

# E-LEARNING POTENTIALS IN BUILDING ACADEMIC INSTITUTIONS AS LEARNING ORGANIZATIONS

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## Abstract

*The learning organization concept is viewed as a model characterized by collaborative working environment and its flexibility to quickly respond to environmental challenges. Its implementation can be suggested for academic organizations in order to enhance their capacity to permanently renew knowledge of their members and clients. The basic source of competitive advantages can only be found in “investing” in the improvement of organizations. Given the growing need to learn on the individual basis makes the mastery of new and rapidly evolving types of learning methodology essential. IT plays a dominant role in facilitating and enabling knowledge management through e-learning, the creation and distribution of knowledge via the online delivery of information, communication, education, and training. The learning organization concept requires that the learning process also involves knowledge sharing and disseminating in order to transform individual into organizational learning. In that sense faculty members should be connected in clusters, nourish an open mind perspective and will to share the understanding of knowledge, which can be achieved by using digital technology.*

*The purpose of this article is to study the relationship between e-learning technology and learning organization concept especially when implemented in the academic framework. The article generally asserts that in the process, when organizations such as academic institutions exhibit substantial efforts to transform themselves according to the learning organization guidelines, thereby seeking suitable, efficient and cost-effective means of acquiring, disseminating and transforming the knowledge into organizational practice, the e-learning technology serves as the recommended strategy showing the highest potentials.*

**Keywords:** *learning organizations, e-learning, academic institutions*

## 1. INTRODUCTION

The learning organization concept is viewed as a model characterized by collaborative working environment and its flexibility to quickly respond to environmental challenges. It was originally proposed for business environments but its nature shows a great degree of universality. Its implementation can therefore be suggested for educational organizations in general in order to enhance their capacity to permanently renew knowledge of their members and clients. The learning organization model may have

significant benefits when applied in academic institutions helping them adapt more quickly to social changes thereby enhancing their quality and prosperity. In that sense organizational learning takes place as part of the strategic development within academic institutions.

The basic source of competitive advantages can only be found in “investing” in the improvement of organizations. This can be achieved in many ways, one of which is the periodic education of employees. Individual learning is the backbone for all forms of organizational learning. Given the growing need to learn on the individual basis makes the mastery of new and rapidly evolving types of learning methodology essential. IT plays a dominant role in facilitating and enabling knowledge management. An important use of IT is through e-learning, the creation and distribution of knowledge through the online delivery of information, communication, education, and training. E-learning is becoming a dominant delivery method in workplace-learning settings across organizations of various sectors and sizes. E-learning creates a growing repository of knowledge that will deliver to employees just what they need to know at the particular moment of need. It can therefore be viewed as «just in time» learning.

The learning organization concept requires that the learning process involve not only training and education of individuals but also knowledge sharing and disseminating among workers in order to transform individual into organizational learning and achieve improved organizational performance. In that sense faculty members should be connected in clusters, nourish an open mind perspective and will to share the understanding of knowledge. Only through such shared understanding will the necessary organizational learning be meaningful, and manifest itself in organizational action such as better programmes, better research output, etc. Digital technology best serves in that area altering the strategic perspective and operational context of academic institutions.

The purpose of this article is to study the relationship between the e-learning technology and the learning organization concept especially when implemented in the academic framework. The article generally asserts that in the process when organizations such as academic institutions exhibit substantial efforts to transform themselves according to the learning organization guidelines thereby seeking suitable, efficient and cost-effective means of acquiring, disseminating and transforming the knowledge into organizational practice to ensure permanent corporate development, the e-learning technology serves as the recommended strategy showing the highest potentials. However, one must keep in mind that even though technological innovations enhance working and learning effects, they also tend to show diminishing effects when implemented in organizations that fail to adapt new ways of thinking and working – in short to act as learning organizations.

## **2. LEARNING ORGANIZATION CONCEPT IN EDUCATIONAL SETTING**

Challenged by technological advancements along with contemporary social changes, schools, like other organizations are facing greater uncertainty urging them to make moves towards significant transformations and adopt new models of interaction with their stakeholders. Taking into account the principal purpose of schools as learning as well as teaching entities, the model of a learning organization can be proposed as a direction for their transformation. That model should enable the emergence of a “new” school as a learning organization or a learning community with its multiple benefits for the society in general. The desired output of such transformation towards the learning organization should be a collaborative working environment accompanied by the flexibility to respond more swiftly to challenges and operate more effectively based on the general idea that knowledge and learning is the source of individual, organizational and corporate competitive advantages.

The learning organization concept can also be implemented on school’s building blocks. Relationships between board members, principal, administrative and support staff are very important when applying the learning organization concept. The model can also be applied at different school departments such as school boards, parents’ councils, and classrooms but also within any group working in schools. Senge *et*

*al.* (2000) use the term “learning school” to refer to schools, considered to be learning organization, and the term “learning classrooms” when the learning organization concept was applied at the classroom level. They suggested that learning classrooms are important parts of learning schools. Although classes are not usually considered organizations from a managerial perspective, they are important units when the learning organization concept is applied to schools.

It may seem that this idea might have problems with the feasibility in practice. This concern has its justification having in mind the novelty of the learning organization idea and the dominant hierarchical nature in the way the traditional schools are functioning, producing students with the capacity to reproduce facts but with questionable ability to implement system thinking and share knowledge. However, advancements coming from a number of schools described in the literature (Cocklin, 1999; Karsten et al., 2000; MacBeath and Mortimore, 2001) stimulate interest in further studies in this field leading to the gradual but adequate implementation of the learning organization idea. However, further work on the research and popularization of the learning organization concept is also required since empirical findings still discover inconsistencies in definitions and views proposed by school based respondents regarding this concept (Voulalas, Sharpe, 2005). Some are focused on both individual and group life-long learning while others referred to parent involvement, continuous improvement, shared vision, quality teaching and learning, and curriculum improvement.

The lack of a clear understanding will ultimately compromise their efforts and actions to implement the concept in their schools. This problem is well known since authors describe difficulties of other organizations to make the learning organization concept a reality (Garvin, 1993; Hale and Whitlam, 1997; Leitch et al., 1996; Smith and Tosey, 1999). However, when all definitions were pieced together the school as a learning community was perceived as a place where life-long learning takes place for all stakeholders for their own continuous growth and development, teachers act as exemplary learners, students are prepared adequately for the future, and mistakes become agents for further learning and improvement (Voulalas, Sharpe, 2005). School as a learning organization is therefore a place where collaboration and mutual support is nurtured, shared vision is being developed and implemented via emerging strategy and all entities are entitled and responsible to discover and solve problems thereby continuously increasing their possibility to create their own future. It must be noted that the learning organization concept offers a cohesive philosophical base and legitimacy for its implementation and accommodates different approaches towards its implementation regarding the variety of its interpretations. The implementation feasibility of this concept will add value as feedback in further theoretical discussions.

### *2.1. Learning organization characteristics in the academic context*

In schools shaped according to the guidelines of a learning organization concept a new culture emerges. Its main feature is the stimulation of the free flow of information and knowledge between all parties. In a learning organization people willingly learn from each other and from their own experiences. The information flow is unhindered and based on the fact that information sharing only multiplies the information value. Currently held positions or dominating politics pose no threat to the individual and organizational process of learning. The results of the individual learning are embedded in the organizational body of knowledge enabling general access. Teachers teach but also continue their own learning through education programs and interactions with other interested parties. Principal holds the leading position but shares and delegates authority with teachers. In the grade and high schools students act as a link between teachers and parents, who are actively participating in the education process: learning themselves, promoting learning for their children and participating in the decision making process especially regarding syllabus. However, the role of the principal or dean is crucial in the sense to ensure that the shared vision is understood and accepted and barriers to the learning and transformation process are identified and removed. The leader is also responsible for promoting communication and

knowledge sharing leading to innovation and continual changes. Such transformation naturally entails changes in the organization and administrative structures and processes with the aim to make decision-making process more flexible and strengthen connections with the environment. In that sense collective learning involves all stakeholders: teachers, students and local community fostering collegiality towards the unifying common goal: raising the level of knowledge and general awareness leading to consequential social progress.

Leadership plays the most important role in the transformation process to learning community schools. The school leader of a new kind should have the ability to maintain professional awareness and stimulate the process of change by identifying the development of factors of influence to the school functioning. Most schools as well as other organizations start the process of transformation based on the decision of the principal or the executive. Others are prompted to change following the initiative of a superior body such as the Ministry of Education.

Even though such initiatives may stimulate the change, its pace is dictated by the perceived obligation and not internal drive. External initiatives would yield the highest returns when combined by internal problems that drive the change. Such problems can be low academic results, discipline problems, student or teacher departure, low staff morale and lack of direction and general purpose. These problems once again accentuate the importance of the leader as a central figure who can draw attention, induce the development of a common vision and facilitate debate moderating it towards the benefits of the learning organization idea.

Even though general perception of failure seems to represent the powerful drive towards change, it is on the other hand the presence of a positive culture and structures that can further encourage the transformation to be built upon these already existing elements. Regardless of the nature of change drivers the leader's role remains clear: that person should facilitate the development of a shared vision, build teams, serve as a mentor and provide support and advice in times of crisis. The need for high levels of honesty, trust and integrity of all members in that process is undisputed. The person acting as a leader should exhibit high degree of intelligence, and further develop the listening abilities and interpersonal skills. Much like in all other organizations, school leaders building the learning organization should be good motivators and human resource managers who can identify and utilize talents among all stakeholders. Needless to say the leader's role is to design motivational rewarding systems and provide opportunities for them to pursue their aspirations and grow personally. If a school is to function as a learning organization all stakeholders, especially leaders, teachers and students should be viewed as partners that are self-reflective, self-correcting and learning from each other's experience.

## *2.2. Senge's five disciplines in schools as learning organizations*

When pursuing transformation towards the learning organization model schools can benefit from the implementation of the Senge's five disciplines (Senge, 1990). System thinking may help not only students, but also administrative and teaching staff to better understand the dynamic relationships between all relevant elements of the value adding process in schools. For example, a teacher's problems in classroom management can be analyzed in terms of not only the teacher's individual behavior, but also other school sub-systems such as school structure and role definition and job description (Betts, 1992). System thinking should be a broadly practiced discipline not only in individual but also in teamwork so that as many perspectives as possible are taken into consideration. In that case today's solutions will have less probability of becoming tomorrow's problems.

When discussing teamwork and team learning it must be noted that traditionally collective learning between teachers and administration is being kept to the minimum. The same applies for collective learning between students and administration. Team learning between students and teachers is also questionable. Power distance shaped by cultural setting can be identified as a determining variable in this

context. Students in collectivistic societies may be more likely to avoid confrontation with their teachers, because teachers should be highly respected (Alavi and McCormick, 2004). Students are required to respect their teachers even outside the class. Hofstede (2001) reported in his study that students and teachers in China (high power distance) were more likely to explain teacher-student relationships in a similar way to a father-son relationship than students and teachers in Great Britain (low power distance).

Personal mastery refers to the learning process of expanding personal capacity and continually improving one's level of proficiency in order to achieve goals (Senge *et al.*, 1994). Developing personal vision and mission is essential for developing personal mastery. Since teachers have a high degree of the self-actualization need their individual learning is an ongoing and continuous activity. Their personal vision should however be in accordance with the organization's vision so that the highest synergistic effect is achieved. Shared visions may improve collective actions in terms of people's commitment to their goals and organizational actions (Senge, 1990). Developing shared vision is a process that should include all stakeholders. Teachers, administration staff, students and parents should engage in the process of teamwork and exchange of ideas to reach a shared understanding of the common vision. Schools as learning organizations should especially foster team learning that continually enhances collective capacities and improves team effectiveness. This process is very important because it has the potential to inspire and enhance collective actions. Team learning and teamwork should foster reflection and inquiry that lead to new ideas and better team cohesiveness.

Reflection and inquiry are suggested methods for identifying and transforming mental models. Mental models are developed throughout the person's life and affect every aspect of the person's activities. Mental models of leaders are especially important in determining the organization's effectiveness. Principal's mental models determine the leadership styles and affect behaviors and actions of all other organization members. Mental models can hinder the transformation towards the learning organization. It must be noted that mental models are strongly influenced by the cultural and social setting of the organization. Socially shaped mental models are therefore the most important prerequisite towards achieving results in terms of voluntary information and knowledge exchange, development of a common vision, teamwork and team learning that lead to adaptive but also generative learning. Mental models concerning the involvement of stakeholders also prove very important. If academic members for example hold a mental model that views parents as unimportant in the school process because they consider them uninterested and lacking time to participate in the learning process of their children, any initiative to build school as a learning community bridging interests of all stakeholders will gain little success in the short run.

Along with the implementation of Senge's five learning disciplines, another issue must be taken into account. A strong barrier towards becoming a learning organization is a person's lack of confidence and power to make significant difference in their field of work. When a school's staff does not perceive themselves to be powerful enough to make considerable difference in any element of the education process, they will put less effort into applying the learning organization model (Alavi and McCormick, 2004). The empowerment of teachers and administrators can be considered a vital component in building the learning school. Empowerment can be viewed as a process of enabling individuals to take action and control work and especially decision-making process in autonomous ways. Teacher empowerment refers to the extent to which teachers perceive themselves to be influential over school policy and management, their work lives, the school experiences of students, and classroom instruction (Marks and Louis, 1999). It is the leader's task and responsibility to create the working environment, which helps foster the ability and desire of employees to act in empowered ways and permanently discover and remove barriers that limit empowerment.

### *2.3. Benefits of implementing the learning concept in academic environment*

This concept has already proven valuable in various organizations because of its connection to increased performance and motivation, lowered absenteeism and turnover, along with heightened stability, satisfaction and involvement of employees (Weiner, Vardi, 1980.) The ideology forms a centripetal force that protects an organization from outside influences by drawing human resources towards inner values, especially inner cooperation. By socially indoctrinating individuals into organizational norms and values, empowerment may best be regarded as the central ethos and the life-giving force and spirit of an organization. Along with empowerment initiatives leaders in learning organizations as well as learning schools play a dominant role by continuously enhancing employees' personal mastery experiences, system and collective thinking and acting on the basis of shared vision and emerging strategy to enhance the effectiveness of organizational changes and actions.

Schools possess knowledge embedded in their routines and practices and in the particular strategies they select for performing teaching and organizational tasks (Argyris and Schoen, 1996). The outcomes of a school's learning process can be observed in its organizational structure, systems, procedures, policies, routines, processes and practices that make the set up of each school unique. Such practices are for example school disciplinary codes, honours, and ceremonies, reward systems, teaching practices etc. This knowledge, distributed through the communication systems, constitutes the existing beliefs and practices, and forms the basis of new organizational learning.

Learning cannot be viewed solely as a process of knowledge acquisition. Individuals need to improve their ability to search for the unfamiliar knowledge by improving their inquiry and reflexive ability. While "normal" training is directed towards finding questions that have already been posed and answered, action learning is more oriented towards learning how to ask appropriate questions. Learning should be highly situational and flexible in solving problems. It should also combine organizational features and socialization with individual needs. The former demands are features of the action learning approach, while the latter requirements are by definition the constituents of the learning organization framework.

Action learning is the Aristotelian manifestation of all managers' jobs: they learn as they manage, and they manage because they have learned – and go on learning (Dilworth, 1996). Sandelands (1998) views action learning as a form of learning by doing i.e. working on real life issues focusing on learning and implementing pragmatic solutions. The action learning approach suggests that people learn best when the learning assignments are embedded in their work and carried out in a climate and setting which encourages learning. In that way the results can be twofold: the individual's self-development and the improvement of organizational performance leading to organizational development.

Mumford (1995) proposes the following important elements for action learning approach: (1) Learning should mean learning to take effective action. (2) Learning to take effective action involves actually taking action not just recommending action. (3) The action-learning project must be significant to the learners themselves. (4) Learners learn best from one another in their learning set. Action learning approach can be very useful when used as a learning technique for adults. Howell (1994) compares the similarity between action learning and the andragogical model for adult learning in that the learner is self-directing, can make a valuable contribution from past experience, and is motivated to learn in order to improve performance, self-esteem, recognition, quality of life, self-confidence, and self-actualization. He views action learning as both a concept and a form of action which aims to enhance the capacities of people in everyday situations to investigate, understand and, if they wish, to change those situations in an ongoing fashion, with a minimum of external help.

O'Hara *et al.* (1996) outline the following benefits of action learning:

- Learning to learn (participants develop the capacity to be life-time learners)
- Self-management of learning (autonomous responsibility to assess own and others' work)
- Self-awareness (being achieved through group interaction and reflection in set meetings)

- Learning with and through others (reinforcing the social aspects of learning).

Action learning therefore stimulates critical approach to the learning content, sharpens the learner's ability to act as an empowered partner based on their values, rights and insights. Schools' principal purpose is to prepare students for employment market where continuous self-improvement and innovation is the only way to keep afloat faced with increased requirements and rapidly changing trends. Schools should therefore pursue a balance between traditional and action-oriented methods so that students acquire information, build a coherent body of knowledge and develop wisdom to continually practice inquiry and reflection. Academic institutions need to review their curricula to ensure more space for action learning. That should naturally be accompanied by the equivalent training on action learning of the teaching faculty. This process leaves plenty of room for numerous cooperation initiatives bringing together various stakeholders in the learning process. The emphasis should therefore be on learning based on testing new ideas instead of teaching. Constant examination and possible modification of mental models of both teachers and learners is the desired outcome of the whole process. This would in turn stimulate not only the development of the organization as a learning entity but also the learning society.

The organizational knowledge base is being built through the process of individual learning. Individual learning becomes organizational learning when it is shared and distributed among participants in the organization. There are two mechanisms for this kind of learning: collaboration between teachers and collaboration between administrators and teachers (Tschannen-Moran, Uline, Hoy, Mackley, 2000). Establishing the so-called professional communities among teachers can especially stimulate individual and therefore organizational learning. Such communities should nourish practices such as reflective dialogue, sharing of classroom practices, the development of common knowledge base for improvement, and collaboration on the development of new material and curricula. Such informal groups contribute to the creating of new, shared norms when increased trust and respect are practiced accompanied by improved means for conflict resolution. Professional community groups also engage in the problem solving process thereby practicing the skills involved in the development of expertise. Sharing in the problem solving process brings about the benefit of increased inclination towards risk taking. This process encourages productive levels of debate that can stimulate mental model transformation and enrichment of the thinking process. That represents the subtle form of transforming the knowledge of individual teachers into organizational knowledge. Organizations that appropriately pool the knowledge of various members in decision-making process become smarter. These shared decision-making processes also expand the school's capacity for innovation and invention. That is especially important because in the modern ever-changing environment schools cannot afford to maintain highly standardized and formalized organizational forms for much too long.

The successful implementation of the learning organization idea in the academic environment also depends on the physical factor. The principal purpose is to create quality-learning environments that enhance the teaching and learning process and have multiple uses to serve the community. Schools are constructed to mirror the nineteenth century factory layout. Students are housed in silos based on grades, grades organized in specific order, and seating arranged in rows. Students progress from grade to grade, from room to room, as in a production line (Hargreaves and Evans, 1997). Even though shop floor has since evolved towards customization and process orientation, the work in schools is still focused around individual classrooms where the teacher is the most important individual. School layout still resembles the hierarchical business entities, based on organizational divisions, functional areas, command and control, top-down emphasis, and layers of bureaucracy. Structure is the factor that determines the school environment: it controls lesson time, school focus and curriculum thereby becoming a vital part of the school culture.

Incorporating new teaching methods and techniques requires the transformation of the environment. The environmental adjustment can enable the transformation from teacher-centered towards learner-centered setup. The school transformation should reflect the learning organization principles. Learning organizations require open structures and flatter organizations. Contemporary structures include

boundaryless organizations (open systems approach where job roles and formalization are de-emphasized), modular organizations (organizations where non-core functions are outsourced), and virtual organizations (temporary organizations composed of multiple organizations formed for a specific purpose) (Randeree, 2006). The new organization in a learning environment needs to become layer-free in order to enable teachers to communicate and create professional communities of practice based on interdisciplinary and multidisciplinary programs. The emphasis in the molding of the physical environment should be on the social interaction and adaptability. However, the restructuring of the existing schools is a daunting task due to the existing baggage of procedures, policies, and visible culture elements. Since total success of the restructuring process is not very likely, school designers should adopt a strategic approach and include the physical as well as cultural elements in their planning. This is especially an important prerequisite if information technology is to be effectively incorporated. The implementation of the information technology leads to the ultimate stage of the school redesign, leading to the virtual learning environment.

### **3. THE IMPACT OF THE NEW TECHNOLOGY ON THE DEVELOPMENT OF THE LEARNING PROCESS**

Educational institutions especially universities can no longer be viewed as individual organizations with clear-cut boundaries, pursuing a single strategic direction by a single mode of knowledge production. Universities have become highly-differentiated systems. They provide a wide range of courses at different levels to a diverse audience, are constituted by a number of academic and professional schools, research centers, and operate in both public and private sector markets, with faculty that has become increasingly autonomous, acting as free agents (Moratis, van Baalen, 2002). Universities have become multi-purposed and hybrid organizations. They can best be described as a series of communities and activities held together by a common name, a common governing board and a related purpose (Kerr, 1963). Kerr has introduced the idea of a “multiversity”, which covers the polymorphic nature of the university, encompassing its dispersed activities, its inconsistencies in objectives, contrasts in approaches, cultural discrepancies and often conflicting constituencies.

The mission of the education institutions is basically creation and dissemination of knowledge. The widespread distribution and recognition of knowledge is the most important factor that enables and facilitates the economic and social growth. The power of knowledge is the most important source of leadership and change as well as one of the most important single elements of the contemporary culture. Its social implications are manifold, affecting the rise and fall of professions and even social classes, of regions and even nations, as was realized some 40 years ago (Kerr, 1963). That is why the creation and development of new means for knowledge dissemination has become the vital source of economic and social progress. Education as well as every other aspect of social life is being redesigned by the processes of globalization and developments in the field of information and communication technology.

The accomplishment of the stated goals and objectives require a high degree of flexibility, which can be achieved by implementing the ICT. The ability to access learning-on-demand is the basic requirement to ensure rapid and effective skills acquisition. The development of electronic media offers learners a convenient access to various sources of information. The ability to disseminate material among the stakeholders has become the expected norm. In that way education can reach a wide variety of audience and be organized independent of time, place and pace. That is why the term used in a variety of educational contexts referring to online and e-learning is “weapons of mass instruction” (Butson, 2003) because it enables access to the mass international market without requiring costly investment in the campus infrastructure.

The era of electronic publishing has offered vast opportunities for self-managed learning. In addition to the electronic libraries, there are many news groups on the Internet where action learners can freely discuss their ideas and seek assistance from each other (Koo, 1999). Online learning was recognized as



the only feasible method of delivering training consistently and cost-effectively to individuals across a vast geographical region. It has also enabled the organization to enhance the transfer of knowledge throughout the organization. Learning through the Internet offers an entirely new horizon with virtually unlimited boundary. Total learning support can be customized via online courseware, database libraries, forums and online administrative functions needed to support the learning process. Apart from that ICT offers other benefits related to flexibility such as the possibility of an interactive patterns of student-teacher relationships, the possibility of structuring education in modular ways, and opportunities to create open educational platforms in which different customized platforms can be plugged into (Moratis, van Baalen, 2002). The desired outcomes are educational effectiveness and cost-effectiveness. Educational effectiveness can be associated with advantages such as greater efficiency in course delivery, increasing flexibility for learners and offering broader opportunities for interactivity. Cost efficiency is discussed in relation to physical infrastructure and staff. Education can be provided to a much larger group of students without the need for extensive investment in physical infrastructure, material developed by staff can be delivered to a much larger audience, and online communication can be quicker.

There are two basic models of online learning (Ennew and Fernandez-Young, 2006); the campus-based model sees the online medium as a complement to traditional delivery modes while the distance-based model sees online learning as a substitute for traditional forms of delivery. The latter may be in either a blended form (mixed media, including print, CD-ROM, DVD and so on, or a combination of these with some face-to-face contact) or pure play (exclusively online, with all learning materials supplied via the internet).

E-learning can be defined as a type of learning supported by information communication technology that improves quality of teaching and learning. It can be described as a learning process in which learners can communicate with their instructors and their peers, and access e-learning materials, over the Internet or other computer networks (Curran, 2004). The key features of e-learning include the following (Maeda, 2002):

- High quality of educational materials can be provided, regardless of the quality of the instructor
- Educational materials are made available in accordance with the level and progress of the learner
- Learning opportunities can be provided to a large number of learners simultaneously
- People can learn anytime, anywhere and at their own pace
- Student progress and performance can be monitored in real time
- Unlike correspondence courses, e-learning eliminates the work of distributing printed materials, CDs, videos and others, and awaiting learner responses
- Educational resources can be updated in real time
- E-learning systems can support interactive communications
- The time and costs involved in bringing learners together for classroom training can be eliminated

The adoption of e-learning represents one of the most important phenomena in the development of higher education institutions (CEC 2001). The use of ICT is seen as “the single most important change driver in education and training systems” (HECTIC, 2002), alongside being an opportunity for universities to modernize and answer the social and political pressure towards wider access to higher education and lifelong learning.

The e-learning initiative is part of the comprehensive eEurope Action Plan, the aim of which is to allow Europe to exploit its strengths and overcome the barriers holding back the uptake of digital technologies. It also falls in with the Report on the concrete future objectives of Education systems by adopting information and communication technology development as one of its objectives. The purpose of the eEurope Action Plan, which covers the period 2001-2004, is to present ways and means of implementing

the e-learning initiative. The intention is to involve education and training players, as well as the relevant social, industrial and economic players, in order to make lifelong learning the driving force behind a cohesive and inclusive society, within a competitive economy. The proposed Action Plan explains how e-learning fits into the context of eEurope, identifies the areas in which it will contribute, and mentions the programs and instruments that will enable EU Member States and other European countries participating in these programs to act. The details are available on web page: <http://www.ntua.gr> (CEC, 2001).

At the same time the lack of sustainable innovations and of diffusion of e-learning experiences outside the circles of directly involved academics is a concern of many observers, both in the European Commission and in Higher Education (HECTIC, 2002). Report of the project “Higher Education Consultation in Technologies of Information and Communication” (HECTIC) reflects the views of the authors based on contributions in the Workshop by its participants and has been validated by the world of Higher Education. This Report contains a number of specific recommendations, some of which are addressed to institutions and their associations and some to the European Commission. Among the former are those relating to strategic leadership and management; while those to the Commission include proposals for the improvement of ICT infrastructure across Europe and the incorporation of e-learning in the development of the Bologna Process. In the HECTIC report the accent is put on the three main objectives of the Educational Policy of the EU which concern:

- increasing quality and effectiveness of education and training
- facilitating access of all to education and training
- opening education and training to the wider world

The conclusions of the workshop were that e-learning is relevant to all three objectives, but also noted that significant perceptual, conceptual and practical frictions exist between the two worlds of policy objectives and educational developments. The solution of the problem is to generate real synergy and thus relevant implementation of e-learning serving also institutional strategic priority achievement. The HECTIC report is available on web page: <http://www.flp.ed.ac.uk/HECTIC/HECTICREPORT.PDF> (HECTIC, 2002).

### *3.1. Advantages and disadvantages of e-learning*

E-learning can deliver many benefits, but only if learner-centered opportunities are developed and e-learning giving learners much greater choice in how their learning is delivered, enabling them to interact easily with teachers and access appropriate levels of administrative, educational and technical support. It means designing the system in ways that best fit the circumstances and needs of the learners. Detailed analysis of advantages and disadvantages of implementing e-learning in academic institutions was done using the SWOT analysis methodology (Table 1) (Hunjak, Begicevic, 2006). SWOT analysis has been a starting point in interpreting e-learning potentials in building academic institutions as Learning Organizations.

Table 1: SWOT analysis of e-learning (Hunjak, Begicevic, 2006)

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>▪ Creative teaching (e-learning is more fun and interesting)</li> <li>▪ Better visualization and simulation, innovation and multimedia capabilities</li> <li>▪ Possibility of dynamic interaction (student can get better access to the instructor and immediate feedback; discussion with other students - collaborative learning)</li> <li>▪ Students are treated more equally</li> <li>▪ E-learning adapts to the learner's style (students learn independently and at their own pace)</li> <li>▪ E-learning integrates training and work</li> <li>▪ E-learning saves money: travel expenses, facilities and supplies (students take the class from their own offices or homes; classroom supplies are reduced); reduced administrative costs</li> <li>▪ E-learning saves time (for both teachers and students)</li> <li>▪ Access to resources (information are easily accessible)</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>▪ Students need to be well motivated, active, self-conscience and self-organized</li> <li>▪ Students loss of educational value (students miss the lectures, discussion, questions, assignments, group work, and the professor's views and perspectives)</li> <li>▪ Lack of student participation in interactive online activities (they are afraid of embarrassing themselves in public)</li> <li>▪ Students fear of losing human contact - (face to face communication); Internet has the potential to isolate students</li> <li>▪ Misunderstandings and misinterpretation</li> <li>▪ Financial investments and costs</li> <li>▪ Technological base and technical requirements for students and teachers</li> <li>▪ Required re-organization</li> <li>▪ Problem of authorizing class contents on web</li> <li>▪ Problem of student identification (when knowledge testing)</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>▪ Learning anywhere and any time – “just in time – any time” approach</li> <li>▪ Lifelong learning</li> <li>▪ Flexible access to learning (e-learning can reach more students over a range of times and locations, possibility of parallel working and studying)</li> <li>▪ Cutting down education costs</li> <li>▪ Increased share of high education staff</li> <li>▪ Answer to technology “imperative”</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>▪ Problem of acknowledging such education and the acquired diploma from employers</li> <li>▪ Possibility of increased share of potential employees with easily acquired diplomas, without having the knowledge adequate to their graduated degree</li> <li>▪ Technology could overcome face to face communication (e-learning can fail in developing required social skills and human contact can be lost)</li> </ul>

### 3.2. Introduction of e-learning in higher education

E-learning has become very important in the process of building academic institutions as Learning Organizations. The introduction and implementation of e-learning in higher education (HE) has been causing numerous changes in HE institutions, especially with respect to their educational delivery and

support processes. The quality of academic education needs to be improved in order to make the process of education more effective and available, to encourage collaborative work and lifelong learning and to confront challenges of education market.

ICT and e-learning implementation is one of the ways to improve quality of teaching and learning, encourage collaboration and raise flexibility of learning. The prerequisites for ICT implementation in HE (Collis, Van der Wende, 2002) are: establishing an institution-wide technological infrastructure, making rich pedagogical use of this infrastructure and developing strategic plans to use ICT with a view to different target groups. The steps of the introduction of new technologies in higher education can be distinguished (Boezerooij, 2006):

1. Pre-initiation and initiation (bottom-up experiences)
2. Implementation (strategic approach is developed)
3. Institutionalization (the change becomes institutionalized and becomes an integral part of the core processes in higher education institutions)

At the same time with the introduction and expansion of new technologies came awareness of the potential of online technologies and more universities moved to develop institutional strategies for the implementation of e-learning. The main feature of the e-learning strategies universities adopt is their diversity. These differences in strategic approach are influenced in part by institutional goals (widening access, reaching new students, enhancing the quality of teaching, reducing costs, and increasing academic productivity) and in part by institutional constraints (the need to reconcile divergent goals and interests; to involve faculty in e-learning initiatives; and to have due regard to ethos, mission, and the economy of established methodologies). The University strategies have to work in a complex environment and be capable of accommodating potentially divergent interests (Curran, 2004).

There are some factors that must be taken into account when implementing e-learning and assessing outcomes of e-learning implementation. The following factors lead to success or failure of e-learning introduction process (Maeda, 2002):

1. Involvement of management (management should set policies for the introduction of e-learning)
2. Clarification of aims and benefits (clearly defined strategy for the introduction of e-learning and follow up activities)
3. The importance of competency management (clarify the types of knowledge and needed competencies)
4. Establishing a learning cycle (cycle of planning, implementation and assessment based on competency management)
5. The importance of instructional design (preparation of quality lectures and teaching materials)
6. Establishing an operational organization (robust operating system and an operating entity)
7. Ensuring the quality of video and audio resources (standard of quality in the material used for e-learning)
8. Establishing distribution systems (broadband infrastructure based on advanced communication technology)

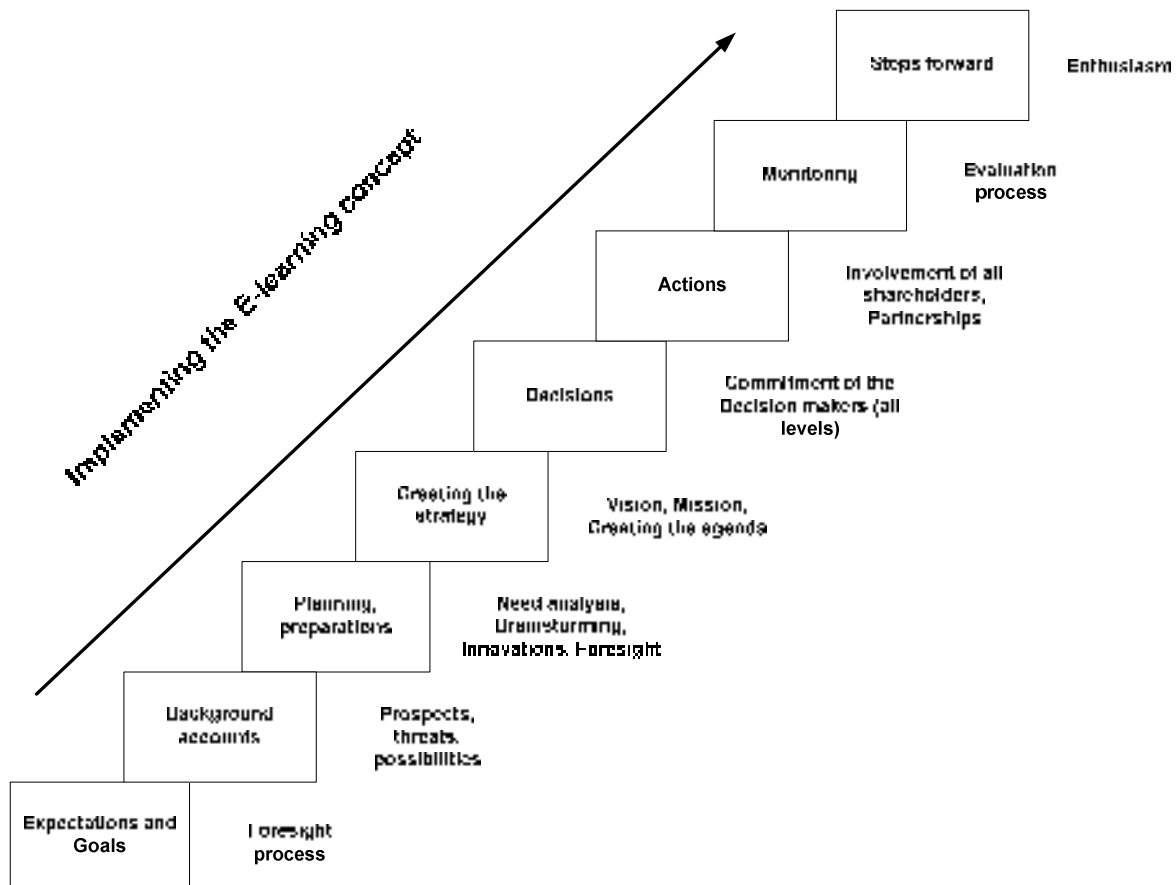
When we assess effectiveness of e-learning, we must also involve three categories of direct users: learners, managers and operators (Maeda, 2002). Implementation of e-learning can be regarded as successful only if it receives high marks from all three categories of users. The most important for learners is quality content, learning environment and systems that are easy to use. Managers need an environment in which knowledge of learners can be applied to business activities and they must be able to

provide appropriate guidance. Operators need quality content in which they can carry out their planning, development, implementation of courses etc.

The process of implementing e-learning concept can be treated as consisting of eight phases (Figure 1):

1. Expectations and goals (identification of central goal, definition of other goals and expectations, foresight process)
2. Background accounts (definition of prospects, threats, possibilities, SWOT analysis)
3. Planning and preparations (need analysis, brainstorming, innovations, foresight, summarizing, road map)
4. Creation of the strategy for e-learning implementation (definition, mission, vision, advantages, goals, creating the agenda)
5. Decisions – commitment of the decision makers (search for alternatives, set criteria for choice, predict and measure outcomes, evaluate alternatives, decision)
6. Actions (implementation, involvement of all shareholders)
7. Monitoring (control system, evaluation process)
8. Steps forward (follow up activities, improvement)

Fig. 1: Implementing the E-Learning Concept (adopted from Markkula 2002)



The most important phase of e-learning implementation is phase of decision-making. All levels of decision makers must be included in the process of decision-making about the most suitable option for e-learning implementation on different levels in various institutions. The options for e-learning implementation in higher education are:

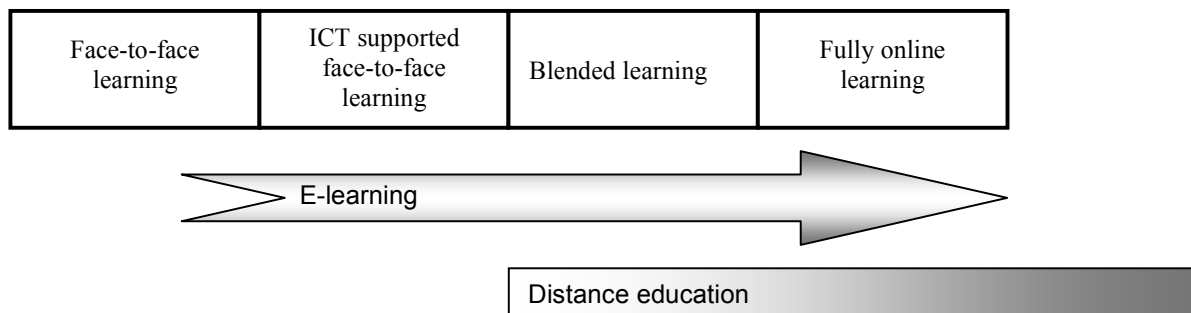
- ICT supported face-to-face learning,
- Blended learning and
- Fully online learning.

In the category of ICT supported face-to-face learning information and communications technologies are implemented to enrich the course. For example, ppt presentations, course notes and grades may be placed on the Web. The instructor may use e-mail and online discussion groups and provide online links to external resources. There is little or no reduction of face-to-face communication. In blended learning the tutor uses information and communications technologies to replace part of face-to-face learning. Students participate in online discussions as part of their course work. They might participate in simulations or participate in virtual classes using videoconferencing.

When the learning is fully online all learning resources and activities are situated online. Supplementary resources can be used, but almost all instruction and communication with the instructor and among the students takes place online.

According to an e-learning continuum (Zemsky, Massy, 2004) (Figure 2), most of the Universities in Croatia are in the phase of ICT supported face to face learning or in the middle of reaching the border between ICT supported face to face learning and blended learning.

Fig. 2: E-Learning Continuum (adopted from Zemsky, Massy, 2004)



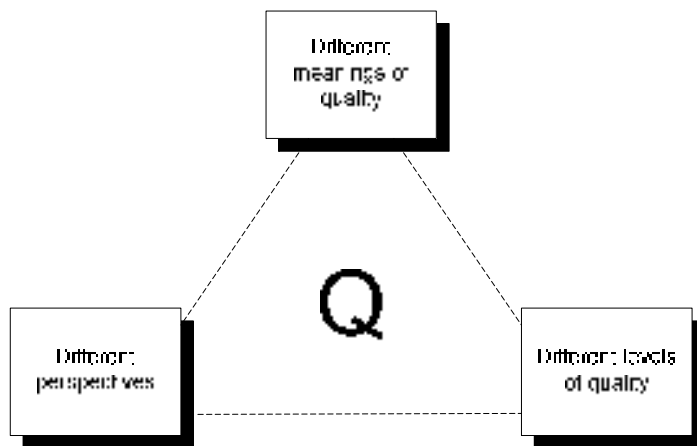
### 3.3. Quality in e-learning

There is no general scope for quality of e-learning (quality management and quality assurance) in higher education. Quality in the field of e-learning is becoming a matter of concern for HE researchers' communities. An obligatory to enhancing the quality of teaching and learning is a current aim of university e-learning strategies especially in traditional universities.

Finding answers to questions concerning quality in e-learning is one of the central goals for theory and practice of e-learning. The problem is based on the different approaches, concepts, methods and certification of e-learning quality which has been developed in the last years and the solution of the problem is a selection of a methodology for their harmonization and synchronization.

The quality of e-learning as a complex concept can be conceptualized as having three different dimensions: different meanings of quality, different quality perspectives and different levels of the educational process to which quality can apply (Figure 3) (Ehlers, 2004).

Fig. 3: Multiple dimensions of the quality concept in e-learning (Ehlers, 2004)



Quality of e-learning can be defined as a process of co-production between the learner and the learning-environment; with the emphasis on learner as the final position of the provision of the learning-services. It can also be viewed as the integration of instructional design and usability. Quality establishment has different perspectives, but two main perspectives are viewpoint of the educator and perspective of the learner. The quality can be distinguished into several different levels. According to quality and evaluation research, an educational process can be divided into five sections (Ehlers 2004): context-quality, structure-quality, process-quality, output-quality or impact-quality.

#### 3.4. E-learning: the case of Croatia

At the moment Croatian universities are faced with challenges: how to maintain traditional values of university education and how to synergize them with new kind of knowledge and skills, demanded by students. Quality issue of university education is at the top of priority list of university management. University management is responding to these challenges by applying new technologies to the existing academic activities because (EQIBELT, 2005):

- new technologies can offer new opportunities for teaching and learning and improve existing teaching and learning methods;
- these technologies are becoming increasingly available and part of students' everyday life, bringing social pressure to university staff to adopt them in their teaching process;
- they make teaching and learning more efficient, especially in the cases of physically dislocated faculties within an integrated university;
- they are the driving force but also basic prerequisites for modern lifelong learning and continuous education programs, offered by university and consumed by citizens of information society;
- they offer better quality control mechanisms for: creation and delivery of course content; online teaching activities and student progress;

The potential benefits of implementation of new technologies including e-learning is recognized by the University of Zagreb development strategy "Breakthrough 2001", as well as by University of Rijeka strategy on "e-University". There are some successful pilot projects in the field of e-learning and some



outstanding achievements. The most important project in HE in Croatia is EQIBELT project (Education Quality Improvement by eLearning Technology) (<http://www.elearningeuropa.info/>; <http://eqibelt.srce.hr>) The goal of the project is to find the right way and methodology for e-learning implementation into higher education system in Croatia. The wider objectives of this project are (EQIBELT, 2005):

- to improve quality of university management and quality of university education by implementation of e-learning concepts and technologies;
- to promote e-learning as universities' instrument to become modern, forward looking and ambitious institution - leading provider of education and training, including the field of lifelong education;
- to practically introduce e-learning as instrument to bring new quality and new opportunities to participants of university education;
- to influence change of laws and university regulations to foster usage of e-learning.

The details about the results of the project can be found on the web page: <http://eqibelt.srce.hr> (EQIBELT, 2005).

#### **4. IMPLEMENTATION OF ICT TECHNOLOGY IN THE LEARNING ORGANIZATION CONCEPT**

Even though technological innovations enhance working and learning effects, they also tend to show diminishing effects when implemented in organizations that fail to adapt new ways of thinking and working – in short to act as learning organizations. The process of IT implementation entails the process of alignment that has both social and technical aspects. This is especially evident in knowledge-intensive services where social processes of alignment create new structures, re-engineer previously fragmented functions and catalyze new ways of working and relating by service providers; in short, acting as a learning organization (Kinder, 2001). Learning organizations and especially schools nourish free knowledge flows as central aspect of their functioning. The deployment of ICT in such setting can therefore greatly increase the speed and efficiency of knowledge creation, accumulation and transfer processes. What's even more important ICT can serve as facilitator in knowledge exchange and socialization. The specific content of sociotechnical alignment seen in the innovation processes of learning organizations using ICTs contains three dimensions: connectivity, interactivity and agility (Kinder, 2001). Connectivity is the technological and organizational openness viewed in effective technological and social networking. Interactivity is seen in a number of interdependent and mutually agreed actions in pursuit of a common goal. Agility can be understood as the ability to learn from and contribute to knowledge networks and to quickly implement the organizational and technological results including new technologies and ways of working. To achieve these three dimensions along with the ICT implementation, agility in structures, processes and interrelationships is necessary to negotiate new ways of working. In schools, this may mean a re-examination of structures, curricula compartmentalisation and specialization by teachers.

One must keep in mind that the implementation of the ICT should not cloud the basic question: what major goal is to be achieved, how does a particular mix of technologies form part of a solution and what are their social implications? The history of education is replete with promissory innovations failing to significantly advance its quality (Bromley, 1997). Computers can enhance pedagogical choices when their implementation is based on a clear vision and transparent goals. The implementation of ICT should therefore be based on a strategy that has emerged from interests of all stakeholders. The trend of mass education has even led to speculations that the ICT can substitute teachers. The fundamental question: to what degree are computers learning tools must serve as guideline in ICT implementation. ICT should foster learning and understanding as well as development computer-using skills that are important for

every future labor-market entrant (Bangert-Drowns, 1993). It must not be forgotten that the implementation of new technological solutions without being accompanied with new pedagogical solutions only brings frustration and alienation. The development of technology has been exponential while the development of the human race has kept the slow pace. New technology has the task of eliminating repetitive work and contributing to the quality of work and life by bringing simplicity and diversity. The learning organization concept is offering a more creative working environment that understands and respects human needs. It respects the interests of all stakeholders and is determined to develop common vision and emerging strategy that takes into account their interest. That is why ICT technology can yield best results when implemented in the learning organization concept.

The purpose of an e-school is still the quality of the output, *i.e.* the knowledge students receive and embed in their knowledge base. That should remain the criteria by which school's performance is judged instead of the extent of computer use (processes) and ratios of computers to students (inputs) (Kinder, 2002). Computers and databases are excellent tools for storing and distribution of information. But acquiring information does not guarantee the development of the knowledge base of an individual.

Students should be prepared to interpret information correctly, apply it in the adequate setting and make sound decisions based on information. The idea is not to train individuals to acquire more information or learn more skills but rather to teach them new ways of thinking and working so that their performance is increased. Learning must lead to development and growth, the possibility to apply knowledge and experience, and the upgrading of self through personal transformation. Learning must be experienced as a personal transformation. To learn is not to have, it is to be (Akin, 1987). According to Revans (1982) the traditional education supported with online learning contributes greatly to the so-called programmed knowledge. However, that knowledge is inadequate for coping with real problems and making right decisions. It must be supported with questioning insight, *i.e.* the ability to map one's own ignorance so as to see more clearly what programmed knowledge is called for and how it is deployed.

The US experience pointed to strong market demand of online learning, with annual revenue growth of more than 30 per cent for the top ten publicly-traded higher education companies reported in 2004 (Farrell, 2004). However, Ennew Fernandez-Young (2006) report that the e-learning reality has been rather less promising than expected. The extent to which main stream universities have adopted e-learning as an alternative delivery mode has been limited, student resistance has been significant, and the UK's high-profile £62m investment in online learning failed when the UKeU (UK e-University) was wound up in 2004. UK providers predicted high levels of demand for such courses that have failed to materialize. Although online learning has become increasingly popular as a complement to traditional forms of delivery, it has failed to really develop as a substitute. The technology is still a major innovation so students are skeptical of its benefits. Distance learning diplomas are still not widely accepted. Costs have proved to be a major cause for concern. Efficiency gains are very dependent on economies of scale, while fixed costs of both development and marketing are high, requiring substantial up-front investments and comparatively long-term payback periods. Pedagogical benefits of online learning are also questionable. Such learning methods are effective at giving information, but show limited value in helping students understand how to think. Kultchitsky and Leo (2003), investigated Singaporean business students' preferences concerning the choice of online versus on-campus study. The students demonstrated a very strong preference for face-to-face delivery over internet learning, with the hybrid model in between. Educational solutions should therefore not be driven by what is technologically executable, but rather what is commercially feasible given the nature of the target market.

Having in mind arguments stated above, the article suggests that the learning organization framework is the missing link leading to the success of the e-learning initiatives. The key to the successful learning is human interaction, socialization and story telling. Good teachers strive to make classes fun and interactive while emotional atmosphere contributes to learning. If students and teachers work in a learning organization environment where socialization is an important element of both working and learning,

online learning with all its benefits can represent a cost effective and useful method of learning and developing human potentials.

The ultimate goal can only be achieved by stimulating the process of learning of all stakeholders accompanied by dominating cooperative activities. That leads us to the conclusion that the overall education process should be improved to result in increased learning of all stakeholders as active change agents. Technological innovations such as e-learning can stimulate the learning process. However, when implemented in settings where traditional rigid ways of working, structures and systems still dominate, the potential benefits from information technology are constrained. To be effective, networking technologies need the support of new organisational networks and sets of relationships and rules offered by the learning organization framework. By linking the interest of various stakeholders in the learning organization context, educational, research and consultancy activities can be successfully combined leading to the entrepreneurial and market driven modes of learning and teaching, which becomes a factor of development of the society in general.

## **5. CONCLUSION**

The school's central mission is to construct such an environment that stimulates learning of necessary skills, knowledge and behaviors. Faced with new technologies, increasing and diverse student population, difficulties in resource allocation and increased standards in learning requirements schools are under pressure to modify and adapt their functioning. Like other organizations, schools are becoming increasingly dependant upon information processing activities in order to cope with uncertainty leading to new organizational knowledge. That is why the learning organization concept with all its properties represents the most suitable form of organizational development of contemporary schools. The learning organization concept has already proven valuable in various organizations because of its connection to increased performance and motivation, lowered absenteeism and turnover, along with heightened stability, satisfaction and involvement of employees. Leaders in schools being built as learning organizations play a dominant role by implementing learning disciplines on the personal level. In other words, leaders in schools continuously enhance employees' personal mastery, system and collective thinking and act on the basis of shared vision and emerging strategy to enhance the effectiveness of organizational changes and actions.

The mission of the education institutions is basically creation and dissemination of knowledge. The widespread distribution and recognition of knowledge is the most important factor that enables and facilitates the economic and social growth. That is why the creation and development of new means for knowledge dissemination has become the vital source of economic and social progress. The ability to access learning-on-demand is the basic requirement to ensure rapid and effective skill acquisition.

There is a huge potential for e-learning to give teachers and learners greater control over their teaching and learning. There are also other advantages in areas such as workplace, adult learning or learning in places where people are geographically isolated. The most important fact is that e-learning can be an opportunity for enhancing the quality of learning and initiating collaborative work. There are a number of e-learning opportunities that need to be explored within the context of a central mission and vision of every school. The implementation of e-learning is a complex project that consists of political, organizational, social and technical measures that have to be integrated. That is why schools must carefully plan the process of e-learning adoption. E-learning encompasses a spectrum of activities ranging from ICT supported face to face learning to blended learning (the combination of face to face learning and fully online learning) or to learning that is fully online. Each school must decide which form of e-learning is the best option for reaching their aims. The implementation of e-learning is a successful process if the results are improved teaching and learning process, maximization of choice and flexibility, higher class quality, satisfaction of teachers and learners and cost effectiveness for the school.

The implementation of new technological solutions without being accompanied with new pedagogical solutions only brings frustration and alienation. The process of alignment should entail both social and technical aspects. The idea is not to train individuals to acquire more information or learn more skills but rather to teach them new ways of thinking and working so that their performance is increased. Learning must lead to development and growth, the possibility to apply knowledge and experience, and the upgrading of self through personal transformation. Learning must above all be experienced as a personal transformation. It is therefore essential that ICT serves both as a facilitator in knowledge exchange and socialization.

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