

The Project Management Discipline in Education

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Abstract

The organizational structure of the primary and higher education constitutes a timeless subject, while significant questions have been raised during the last decades concerning the effective management of the huge organisational system, the better utilisation of the available resources, the pupils and the beneficiaries satisfaction and the social issues related to all aspects of the public. Education constitutes a dynamic system due to the changes required for the adaptation and improvement of the education system based on the innovative and more efficient pedagogical approaches. The organisational structure of the Greek educational system follows the traditional hierarchical structure where the duties and authorisations are escalated into the hierarchy. This research work focuses on the re-engineering of the primary and higher education structure to a matrix organisational structure at local and regional level based on a project oriented approach. This organisational structure requires significant changes into the roles and duties of all the stakeholders which are analysed in this paper. Also, this structure provides advantages for the adaptation of the Education in the needs of the modern society. Finally, the actions to be taken for the efficient implementation of this adaptation into a rational time range are outlined.

Keywords. Organisational Behavior, Formal Education, Project Management

1. Introduction

The Pedagogic aspect of education refers to a structured learning process which is organised and planned by the State or other authorized bodies (Xohellis, 1986). Education, together with health and social welfare, is one of the most crucial public services. Although the objectives of education differ from society to society, there are some commonly accepted goals in all societies, the most important of which are:

- The development of maturity and "ethos" of young people, helping them recognise and identify their position in society.
- The cultivation of intelligence, knowledge and cognition.
- The fostering of culture and civilisation at national and international level.
- The preparation of young people with the necessary knowledge, skills and competencies in order to become productive and useful members of society.
- To support the social, moral and economic development of communities at local, national and international levels.

The above mentioned general objectives are accompanied with more specific objectives linked to the national and social priorities as reflected in the different educational levels, courses and subjects.

During the last decades the effectiveness and efficiency of education have become burning discussion topics (Bush, 2003; Σαϊτης, 2000). The term effectiveness refers to the strengths and capability of educational organisations to achieve their objectives

and goals (Καρατζιά-Σταυλιώτη and Λαμπρόπουλος, 2006; Παυλόπουλος, 1983). In non educational or social sectors the effectiveness can relatively easily be measured, while structured models can be developed to quantify the achievements according to the targets. In the social and educational field the quantification of expectations is not an easy process, while measuring the effectiveness could be even more challenging. The results of education could affect the whole of society and many times become measurable only after decades.

Another important issue concerns the shift of education from the traditional behavioural approaches to constructivism. The old fashioned learning activities, based on the change of pupils behaviour (Skinner, 1969), can be replaced with those which require the pupils' active participation in the learning process. The learning process in constructivist pedagogy (Chomsky, 1959; Cobb, 1996; Vygotskiï, 1987; Vygotsky, 1994, 1962; Vygotsky and Luria, 1994) is based on a progressive approach. The students' existing knowledge and cognitive structures are updated and reformed with novel information through activities of interactive participation. The educators' role changes: it facilitates and manages the learning activities by paying attention to the pupils' active participation in the learning process. The pupils' participation relies on one's subjective interpretation of experience as opposed to objective "reality". This direction requires an appropriate adaptation of the organisational structure of education allowing the effective utilisation of the constructivist pedagogical approaches.

Crucial for both the effectiveness and the efficiency of the educational sector is the structure and operation within the educational system. The organisational and administrative structures within the public and private sector can be categorized into two major groups.

The first group is named pyramidal (Linear or Hierarchical model). The pyramidal organisational structure is formed on a linear hierarchy where decisions are taken and imposed from the highest point to the lowest. The same hierachical form is used for the transfer of orders and the operations of management (Programming, Organization, Management, Coordination and Control). This structure is fairly straightforward while providing a strict and constant frame for the management of an organisation. On the other hand it is characterised by bureaucracy, cost inefficiency and inflexibility to new conditions and changes.

The second category concerns the Matrix Model, which is focused on the utilisation of specialisations. The hierarchy in this structure is not strict as far as the duties, responsibilities and decision making are concerned. The authorisation and responsibilities are assigned to the project or task managers. Project managers have the duty, with the collaboration of the business unit managers (functional managers) to coordinate the services offered. This structure has become more popular during the last decades, since it is characterised by less bureaucracy, more flexibility to changes and lower operational costs (Τύπας and Κατσαρός, 2003). However, there are concerns over the operation of an effective monitoring and control system, which enhances the full potentials of this flexibility.

The current research examines the wide adoption of the matrix structure in the educational organisation at local and regional levels. The second section describes the existing structure of the Greek educational system, which is mainly based on the hierarchical model. In the next section the application of the matrix model to the Greek educational system is described. It should be noted that the significance and the

range of this change cannot be fully presented in this article and therefore it focuses on the utilisation of matrix model in regards with project management orientation. This structure's advantages, together with its requirements, will be outlined in reference to primary and higher education.

2. The hierarchical Organisation Model of the Greek Educational System

The traditional pyramidal structure is based on the specialisation of the different agents in the hierarchy (Κατσαρός, 2008). Every directory and department is characterised by the high specialisation of its duties. Decision making is the responsibility of the higher levels while the lower levels ought to implement the decisions without much freedom for adjustments. The authorisation and responsibility of the decision making is escalated from the higher level of the hierarchy to the lower. Also, there are strict rules and duties for every department and a communication protocol has to be followed for the co-operation of departments, thus increasing bureaucracy.

The Greek educational system is characterised by the high degree of centralisation of authorisation and decision making. During the last 30 years a lot of changes have been introduced by the government and parliament in order to modernise and improve the system. The hierarchical and pyramidal structure remains the same with minor changes and jobs specifications, without changing the general status quo (Figure 1). At the top of the hierarchy are the Minister and the Junior Ministers of Education, followed by the general secretary, the regional directories, the prefecture directories, the municipal educational committees and finally the schools. Also, in this structure there have been established committees and governmental organisations, with mainly consultancy orientation, such as the Pedagogical Institute and the National Council of Education. Crucial in this structure are the regional and prefecture educational directories and the school counsellors. These directories play significant role in the implementation of decisions taken and rules voted by the higher level of the educational hierarchy. Regarding the operations of management (programming, organisation, coordination and control) for primary and higher education, the programming requires the Ministry's authorisation of the Ministry. On the other hand, the management, coordination and control at regional and prefectural level are the responsibility of the corresponding directories and the school counsellors. The school director's role is limited to the maintenance and monitoring of the decisions taken at higher levels of the hierarchy (mainly the Ministry). Actually, the school directors are not able to select their staff, to schedule the learning activities, to manage the infrastructure, to plan the learning activities, to select or develop learning materials. There is a guiding manual and a textbook for every course and every year for all levels.

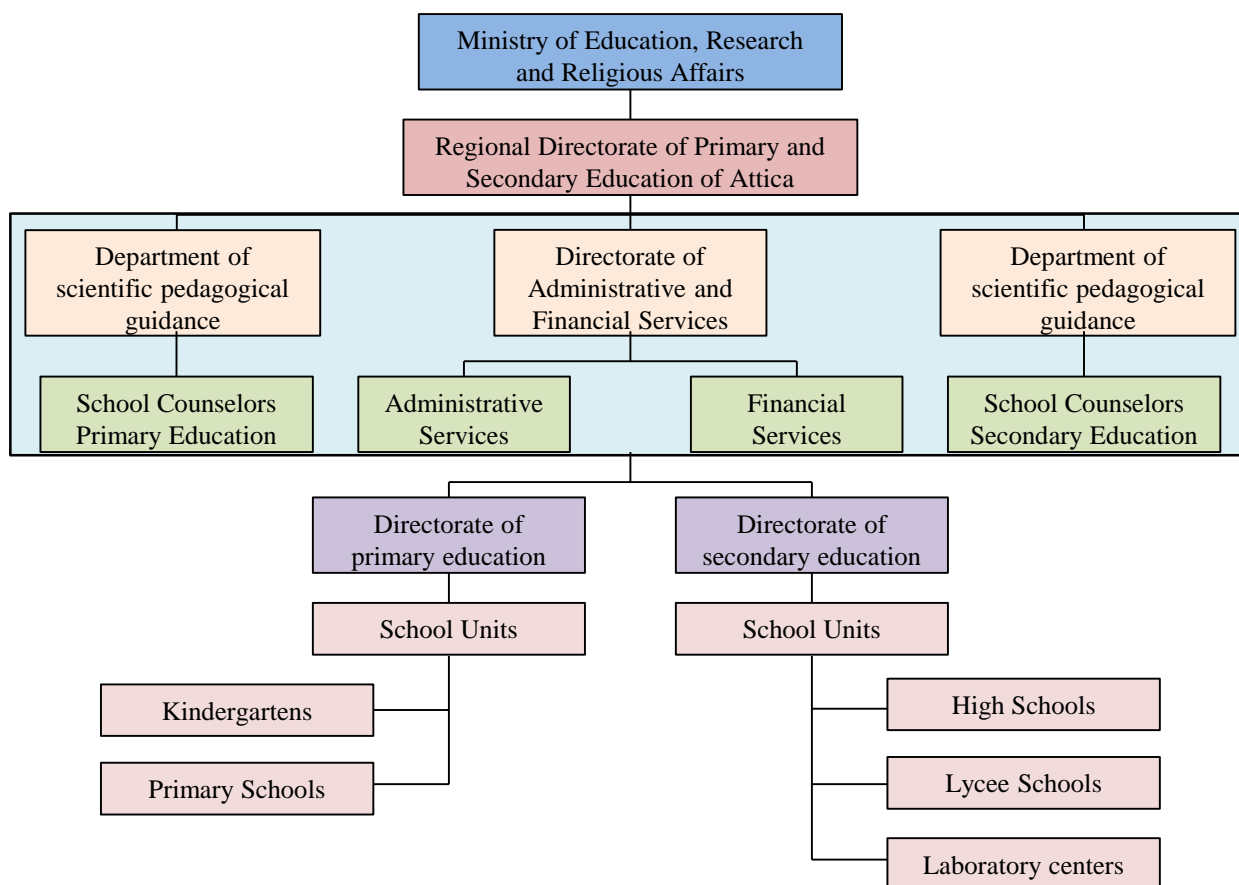


Figure 1. The Hierarchical structure of the Greek Education System (Source: ΠΔΕ Αττικής, 2018)

This organisational structure creates difficulties to the efficiency implementation of Education since:

- There is strict control from the Ministry of Education, which does not take into consideration the local social conditions.
- The whole system operates with high inertia to the utilisation and integration of new modern and more effective managerial and educational methods and innovations.
- The teachers' creativity is being limited since they ought to follow the given guidelines and the strict rules imposed by the Ministry
- The bureaucracy creates work overloads for the staff and difficulties to the services provided; and consequently, it constitutes a major source of disappointment for the beneficiaries (citizens, pupils, local community, etc.)
- Schools cannot improve their educational activities, which have to be implemented in accordance with the Ministry's strict guidelines.
- There are a lot of stakeholders participating in the management of education, with different roles, sometimes unclear; and therefore confusing the school's operation.
- The school directors cannot participate to the strategic planning and identification of the priorities for the schools they run. They cannot select their staff and exploit capabilities and opportunities for the improvement of the educational activities.

- The available resources cannot be optimally exploited. This problem is magnified by the fact that education is knowledge intensive and the outcomes depend on the exploitation of human intellectual capital.

To sum up, the existing managerial structure does not fully exploit human creativity, as staff is obliged to work without the freedom and within a very bureaucratic frame. These conditions transform the educator from public servant to a simple guided dispatcher. Also, the role of the head of the school has been questioned as well as his responsibilities (Σαΐτης et al., 1997). On the other hand, it should be noted that for many reasons this centralization is required by the nature of the education but not to the existing extent. The learning objectives for every level and the outline of the educational curricula can be the responsibility of the Ministry. The Ministry and its consulting bodies can have the responsibility of the strategic objectives, curricula and general educational guides.

3. Project Oriented Organisational Structures in Education

The disadvantages of the above mentioned structure led many executives and researchers during the last 60 years to examine adaptations or other organizational structures in order to increase the effectiveness and efficiency concerning the management of education.

The most popular organizational structure, constituting the main stream in large firms and organisations, is the matrix model or project oriented organisation (Argyris, 1964, 1957; Bartlett and Ghoshal, 1990; Clegg et al., 1996). The matrix organizational model keeps the traditional structure of the hierarchical model but with other roles and responsibilities assigned to the functional modules of the organization and with the addition of a major role: that of project or product managers. The most important differentiation from the hierarchical structure concerns this new position in the organisational structure, out of the hierarchy structure, which comes with crucial and upgraded responsibilities. The effective implementation of the Matrix organizational models required a set of adaptations to the hierarchical model, the most important of which are the following:

- a) The functional departments of the firms or organisations are established in order to group the staff which has similar expertise and duties. The functional manager's duties are closer to those of a human resources manager and less to the management of the production or of the business operations.
- b) The operations of the firms or organizations are grouped together in relation to the production, services offered or projects' implementation. For every project, product or services offered an executive is assigned, which has the major responsibilities to manage and carry out it.
- c) The staff assignment as well as the allocation of the required infrastructures and resources comes through a co-operation of the project/product managers with the functional managers. The project/product managers have the strict responsibility of the project implementation, product production or services offered while the functional manager's authorisation is limited to the staff or resources handling.

The clearest picture of the Matrix organizational structure can be acquired by the identification of the roles, duties and responsibilities of the project and functional

manager’s positions. Project managers are in charge of the following (APM, 2012; PMI, 2013):

- a) Project planning (Definition of project scope, development of the project plan and scheduling),
- b) Administration of the project implementation (organization of the project’s team, identification of the staff’s roles and positions in the project implementation, identification and organization of products or services offered by externals, etc),
- c) Leading of the project implementation (provision of the direction, coordination of the activities and motivation and supporting the project team) and
- d) Controlling and monitoring (Defining project baselines, tracking project progress, reporting and taking corrective actions).

On the other side the role and responsibilities of the functional managers can also be considered crucial as it is not limited to the allocation of staff or resources to projects. Functional managers are charged with the task to (APM, 2012; PMI, 2013):

- a) cooperate with the project managers for the approval of the project plan and schedule,
- b) support and consult the project managers during the project implementation for problem solving,
- c) manage the activities within their functional department
- d) support the staff in order to improve their performance and
- e) improve the staff utilization within the firm or organization.

The above mentioned duties and responsibilities of these two crucial positions constitute the frame by which the organisational structures are established and are adapted with flexibility related to the individual conditions or business culture in every firm and organization (Figure 2).

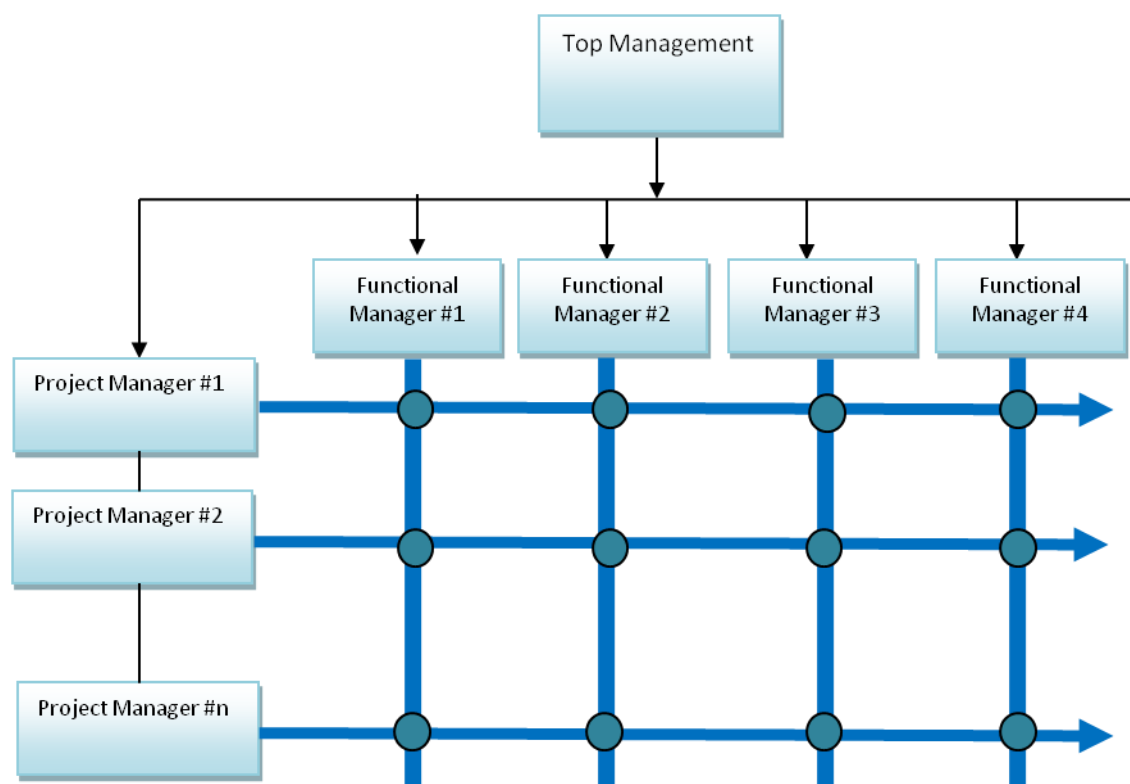


Figure 2. Simplified diagram of the MATRIX Organizational Structure (Source: PMI, 2013)

These two jobs are usually accompanied by two more positions: one at higher (portfolio manager) and one at lower level (task manager). The job of the Project Portfolio Manager is related to the identification of the projects/products/services meeting the goals and the strategy of the organization, keeping balance of factors such as resources allocation, budgeting, etc (PMI, 2013, 2008). Also, it monitors, maintains and evaluates. At executive level, the projects/products/services portfolio implementation is done with the cooperation of project and functional managers to ensure the efficient implementation of the projects and to examine opportunities for further developments. The responsibilities of the task manager are related to the effective implementation of the corresponding tasks in the project life cycle (APM, 2012). The main duty is ensuring that the task products are implemented on time, at the identified quality specifications and within the budget allocation. Of course, the responsibilities are not limited to the above since a set of activities and measures have to be also taken, such as data collection, reporting, communication (internal and external) etc.

The Matrix organizational structure impacts with cons and pros. The most significant advantages, probably responsible for the recent popularity of the matrix organisational structure, focus on the optimization of the resources utilisation, the cost minimization and the incensement of the organisation functionality (Maylor, 2010). Actually:

- The communication barriers within the organisation can be broken down, while the functional duties become flexible and the communication between members of staff is facilitated.
- It increases the staff's participation in the projects, in a way that exploits their skills in a motivational manner.
- It increases the productivity since better staff assignment across the organisation can reduce the costs and fully exploit the available human resources.
- It increases the cost effectiveness through the better sharing of the resources into the projects' activities
- It encourages the cross fertilisation of ideas and supports the knowledge management within the organisation (through the sharing of good practices and ideas)

The major disadvantages of the matrix model are recorded to the need to handle the complex situation produced by the roles of functional managers and project or product managers. Staff has to report and refer to two managers which might produce difficulties in coordination. Also, this kind of operational structure requires time and workload for the staff to become familiar to this type of co-operation and work organisation. It is worth noticing that the effective utilisation of information technology can help to address this undesirable situation, as well as training and mentoring of the staff involved. Galbraith (2009) in the book "Designing Matrix Organizations That Actually Work" says that "Organization structures do not fail, but management fails at implementing them successfully." He argues that strategy, structure, processes, rewards and people need to be aligned in a successful matrix implementation.

One of the main questions in this research is how this matrix structure can be applied into the formal education, and especially in the primary and higher education. There are a lot of aspects to be taken into consideration since primary education has

134.000 employees, who support more than 1.350.000 pupils and more than 5000 primary and 3455 high schools dispersed all over the country. The size and the structure of the educational system make difficult the evolution and implementation of new structures or innovations followed by the existence of high level of inertia in changes. For the needs of this research work will be focused only to the Educational Aspects and not the other administrative activities related to the education.

The key points to present the functionality of the matrix organisation is the roles, the duties and the responsibilities of the involved stakeholders (task managers, project managers, functional managers and program or portfolio managers) into the organisational structure of the formal primary and high level education. A simplified approach is to assign the task manager and project manager roles to the teachers and school directors correspondingly and the roles of functional managers to the regional or municipality counsellors while the head of the regional directorate of education could have the role of the program manager (table 1).

It may seem easy to assign roles and positions but the implementation is very difficult and demands an extensive re-engineering process at all levels of primary and higher formal education. Actually, this re-engineering is not limited to the change of the procedures but includes interventions concerning the way of working and the organizational culture of the entire educational systems. Another crucial factor is related to the duration and the workload of this re-engineering process since the preparation activities includes: a) the legal status which has to be studied and legislated, b) the new regulatory frame to be prepared through social dialogues, studies and benchmarking so as to clarify the duties and responsibilities of all the stakeholders c) a training programme for all the involved staff to be implemented prior the time of the turning point.

Table 1. Assignment roles and positions to the various stakeholders

Organisational Level	Roles Assignment			
	Program (Portfolio) Manager	Project Manager	Functional Manager	Task Manager
Educational Units (Schools)		Head of the School		Educational Staff
Municipality (School Committee)			Vice Major/Schools Committee	Administrative Staff
Regional (Regional and Prefectures Educational Office)	Head of the Regional Educational Office		School Counsellors	Administrative Staff
Ministry (Primary and Secondary levels Directories)	Head of the Primary and High Level Directory			Administrative Staff

A general description of the duties and responsibilities of the jobs in the matrix organisational scheme of primary and high educational systems is presented in the following:

Head of School (Role: Project Manager)

- Coordinate the Educators for the flawless execution of school learning activities
- Ensures that all the teaching activities are delivered on time and within scope
- Ensures the resources availability (Educational staff, Material, Infrastructures)
- Co-operates with the teacher for the organisation of the learning activities including teaching material, learning events, scheduling etc.
- Develop a detailed plan for the Education and track its progress
- Co-operates with the Regional Counsellors for the ensuring of the available resources
- Measures the education performance using the appropriate methodologies and systems
- Manage the relationships with the pupils, parents and social partners
- Keeps the school documentations and files in a yearly basis
- Reports to management (municipality and regional level)

Teacher (Task Manager)

- Schedules the detailed teaching activities of his/her responsibility
- Implements the teaching activities in the classroom
- Ensures the compliance of the learning activities to the specifies qualifications
- Reviews and determines all the appropriate activities to ensure the knowledge transfer to the pupils
- Monitors and ensures the compliance to all quality assurance procedures and evaluate the beneficiaries

Municipality Directorate of Education- Committee of School Counsellors (Functional Managers)

- Allocates staff to schools and collaborates with the heads of schools regarding the resources' availability
- Participates in the planning of educational activities at consultancy level
- Provides subject matter expertise and consulting to the teachers
- Approves the final educational program and schedule
- Recommends changes to the educational program, including corrective actions
- Assists with problems related to teachers team performance
- Improves teachers team utilization

Regional Directorate of Education - Program (Portfolio) Manager

- Defines strategies to achieve the objectives of the education at regional level
- Initiates educational activities to deliver the required outcomes
- Provides clear achievable and effective direction, leadership and motivation to the heads of the school.
- Helping school directors to develop their managerial skills
- Negotiating stakeholder issues and resolving problems at any organisational level
- Planning the organisation's work in order to ensure the objective's achievement
- Monitor the schools' performance and takes corrective actions to resolve potential problems

- Manage the resources allocation to schools and forecast the future resources needs for the schools

The utilisation of the project management approach in education's management required fundamental changes to be adopted, institutionalised and implemented. These changes constitute the key points which on the one hand will change the status of education in Greece and on the other will improve the management and the efficiency of the educational system of primary and higher education.

- The first crucial point is the teachers' position which ought to be registered at municipality level. So, the organisational structure of the municipality will be responsible for the teachers and they will be allocated to schools regarding the educational needs with the collaboration of the schools directors.
- The second change concerns the authorisations of the schools directors and the teachers. The strictly dominated administration of education by the Ministry where the educators follow faithfully the instructions even more in the learning activities drawn up centrally must be changed. Authorisations must be provided to the directors of the school and the teachers in a systematic way, so that it will maintain balance.

4. Conclusions

The existing management structure of the primary and high education is based on a hierarchical model, which provides barriers to both the effectiveness of education and its administration. This traditional organisational structure cannot exploit the available resources and curtails the creativity of well-trained educational staff by reducing them to simple solicitors. The adoption of the matrix organisational structure based on project management features provides new trends and improvements to the education since:

- The better utilisation of the human resources and the infrastructures for education leads to cost reduction.
- The exploitation of the teachers' creativity upgrades their role.
- It connects the organisational structure to the new trends and the pedagogical needs are satisfied within a constructivist educational environment.

Actually, this change constitutes a very difficult process because apart from the technical and procedural difficulties there are difficulties concerning the change in managerial culture, public administration and the way people are involved in the education. This research constitutes a first approach for the highlighting of the subjects to be studied and examined within the frame of re-engineering the educational structures into new forms.

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