THE APPROPRIATE LOGISTICS AND BUSINESS INFORMATICS IN LOCAL EDUCATIONAL ENVIRONMENT

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Abstract
In this paper will be shown the general concept of the techno-economical development in Western Balkan countries (esspecialy in R.Macedonia), as a result of the closed privatization and including the direct investment in the field of education, economy and other parts of interest. An explination of the state and public legislative in the high education (Bologna, EKTS, Curriculum of Business Informatics, Informatics and IS, Business Logistics), the economy standards and laws, forcasting of new technologies, environmental aspects, production of health foods…

1. Introduction

Various programmes related to Management, IS, IT, Computer Sciences, Business Informatics & Logistics, Business Logistics, Industrial Logistics as Industrial Engineering with Business Informatics, many universities have offered over the last three decades.The curerent Bologna Declaration in Europe with its three level study structure as well as the increasing pressure to ensure funding within most departments adds further pressure to many universities. Despite attempts being made to provide reference to curricula and guidelines, many universities and faculties struggle with the proper direction and design of the IS, IT & Logistics curricula.

The final curriculum comprises a balanced and interdisciplinary structure that centers on engineering principles and focuses on transformation, models and methods. The engineering emphasis throughout the programm is seen as one important characteristics. Contemporary, this one differentiates the forcasted programmes from other management oriented IS , IT, Logistics, Business Logistics degrees. Therefore the mentioned programmes appear to us to be innovative with regards to its interdisciplinary character. Furthermore rhe engineering perspective and the integration of socio-cultural studies and practical experiences in an international setting equip graduates with unique and career oriented capabilities.

As the student figures illustrate, the rapid society and industry changes in recent years require constant evaluation and modification of education programmes in order to make them attractive and suitable for students according to the economy, industry and states demands of possible profiles. Indeed, claims that Information Technology, Information Systems, Business Logististic or Informatics etc. are no longer sources of strategic advantage have generated a growing concern over the loss of technology-oriented jobs. Generally speaking, it is expected that demand for subjects such as application design and integration, enterprise architecture, information management, and business process management will increase, specially in the countries od "real "undeveloped Western Balkan. The demand of graduates capable of coordinating complex IT, IS, ……, SCM, Logistics networks and project managers managing global IT projects it also expect to rise. Students may Also need to understand how to manage project teams, especially geographically and ethnically diverse teams. On the other hand, innovations in information and software technology should also be considered as key elements if information systems.

Consequently many universities struggle with the proper direction and design of an information systems related curriculum. Aiming to provide guidelines for the faculty in universities (Such as Goce Delcev University as youngest in The Republic of Macedonia), the objective of this one thinking and article is to evaluate some selected IS, IT, Business Informatics, Business Logistics, Industrial Logistics degrees. It's known that there are selected programmes for Anglophone-European Countries and Continental Europe. The another part of Europa (including Western Balkan) have had similar approaches and thinking for evaluation of these problem and studying.

The major goal of programmes are to prepare students for their future career in these above mentioned fields, either in industry (practice) or academia. However, because the work environment is changing rapidly, some students will have a "job for life". Graduates will have to be adaptable and be willing to become "lifelong learners". For this reason, in addition to the strong knowledge these programmes aim to enhance key transferable skills. This will enable the graduates to take on a variety of jobs in various types of organizations. Transferable skills are those skills which, having been learned in one context, can then be applied in another. The curriculum and module descriptors include compulsory and elective discipline:

- Guided independent study and activity, with specialist input when appropriate
- Recent or current case studies
- Essay and report writing
- Collaborative group work and discussions and decision
- Presentation of findings to the group as a whole
- Intercultural work experience

Various programmes (three or four years courses) related to Management, IS, IT, Computer Sciences, Business Informatics & Logistics, Business Logistics, Industrial Logistics as Industrial Engineering with Business Informatics in particular consist the following objectives:

- The courses will equip students to analyze informatics technology, information systems, optimization methods, numerical analysis, business problems from both technological or engineering opportunities and business requirements.
- The courses will equip students to develop solutions to business problems using ICT, IS to its full potential.
- Students will learn methodologies that enable a clear understanding and thinking of business problems and the function and relationship of ICT in business.
- Students will understand constraints, both organizational and technological in designing information system, logistic system solutions.
- Students will be provided experience in working in an inter-cultural work environment.

"The 21-st century has seen launching in the same time the atom era, the space era, the electronics and informatics era, the modern biology era, the new materials era and that of the universe understanding".

At the beginning of this century when the technological fever comprised most of the developed countries, we can call the first decade quite the *technological revolution decade in education*.

At the beginning of this article, concerning the way the education reflects the tomorrow's society needs, there are to keep in mind the *common tendencies of the informatisation in the European countries*, enunciated at the European seminar "An European Platform for the Development of a Cooperation Mechanism in The Informational Technics Field in Education" – Moscow, 1991. [E. Noveanu, D. Noveanu, 1993]:

- the education systems regulates according to the suprasystem trying to answer to the necessities of the individual integration in an informatised society;
- the state decisively involved in the promotion of education informatisation; it has been awared of the education role in the society programme, but also the necessity of improving it faster, in order to assure to the respective society the competitive character in technologic and scientifical perspective;
- the informatisation approaches comprise an extremely large area, stressing on the applications which assure a basic informatics culture for each graduate;
- it is assured a minimum technical equipping for the practical activities;
- it is assured the specific training of a sufficiently great body of teachers;
- it has been crystallized a coherent programme (programmes, projects) for the education informatisation;
- it is payed an increasing attention to the pedagogic, psychological, socio-pedagogic, economic investigations.

The science is – paradoxically today – in a conflict with the society: admired and suspicioned in the same time, bearer of hopes for the future, but also a proposer of some ambiguous notions, generously financed and in the same time unable to keep all its promises, showing spectacular successes and in the same time accused of not serving directly the society objectives.

Nevertheless, *science and technology* are extremely powerful instruments today. Comparing science and technology, Gradwell's (1986) shows that:

Technology – is an opened system;
- it uses deductive reasons;
- it uses practical methods;
- it is preoccupied by what things should be;
- it has discoveries which lead to theories as a result.

Science – is a closed system;
- it uses analitical reasons;
- it uses scientific methods;
- it focuses on things that exist;
- it starts from problems and it is guided by theories. [James L. Barnes, 1988, p. 215]

To all of these is added the culture too, the research and the education, completing this way the list of the civilisation factors. The unity of education with research and technology and their role in the development of science and culture are revealed by G. Secară in the scheme:

2. *SCIENCE - CULTURE – EDUCATION – RESEARCH - TECHNOLOGY*

by culture understanding that factor, creator of spiritual values; by science- that factor, a theoretically provider of new knowledges concerning the world around us; by technology- a practical factor, a constructive of material objects one; by research- this methodological factor of the action led in the knowledge field; by education- that instructive-educative factor, a new human values provider, in order to continue and develop the civilisation. [G. Secară, 1986] Trying an underlying of the relations between CULTURE – TECHNOLOGY – SCHOOL, Ray Page designs the following scheme starting from the nature of technology till the adoption of some strategies for the introduction of technology in school, depending on the characteristics of each culture.

The modernizing of the instructive-educative technologies must be achieved so that the efficiency of those which are taught to be enhanced, meaning the learning time saving, the getting thoroughly into the studied material and the stressing of the operational character.

In "Declaration" of the Stanford meeting (1986) the clear elements of the connection between society and the new technologies are underlined:

- the citizens must be trained in order to live in an informational society;
- in different countries it has been passed to a massive introduction of computers (and of informatics) in education; those who decide that in education must focus the attention on this very important field also;
- the researchers from different countries must unify their efforts in order to get results, applicable to an international level;
- the international organizations which operate in this field must develop these activities which facilitate the change of information and cooperation;
- all of these who have competencies in this field are invited to participate at the organization of such multinational research projects and of pilot-projects of multinational interest;
- the declaration is a message of the participants to this meeting addressed to the international community in order to support the continuation of the surveys concerning the use of computers in education. [E. Noveanu, D. Noveanu, 1993]

3. *General trends that are basis of the introduction of IT in school (politics and strategies)*

The strategies and politics that are the basis of the introduction in school of the computer and of the informing technologies let to see some general tendencies:

- the informing technologies used as a pedagogic tool can have a powerful influence on the way of assimilating the knowledge, on the learning content and the reports between disciplines, on the role of the educators and of the school and class organization;
- the decision of equipping just some pilot-schools or of proceeding to applications in the limited frame of a project or of a discipline is generally based on two series of connected considerations: those linked to the costs and those concerning the efficiency.

The informatics is called to be among the instruments able to improve the internal and external efficiency of the educational systems. It is concretised in this way more strategies for the future:

- the computer number increase offered to schools, teachers, pupils. It must be adopted flexible programmes where these machines will be systematically used as a subject matter and auxiliaries of gaining the programme's discipline;
- the producing of a greater number of quality didactic logistics;
- training of a greater number of teachers, qualified to teach the pupils to use the computer.
- measures which can allow teachers to devote more time NIT studies. In the systems where the syllabus are relatively uniform, it should be easy to introduce everywhere general programmes of initiation in the use of computers in education, allowing the teachers to devote the strictly needed time to know the way of introduction on a computer of the school activity, not being necessary to waste time redoing the programme. "As a consequence of analysing the computer in the 80's education it is noticed that most of the countries applied a very simple diseminating strategy, starting from the hypothesis that the introduction of some informatics material and logistics will automatically lead to a fundamental change of the way the pupils do their work class. The next stage consists – for the specialists in programmes field, for the textbooks' authors, teachers, specialists in informing means and others – in the priority role given to the teachers as main agents of change promotion." [W. Pelgrum, 1992]

4. *Conclusions*

"A world of computer, as the tomorrow world will be, comes with its *uncountable* in front of minds. It gives them new relations, new meanings, but it wants to impose new languages." (C. Noica) In order for the education reform to succeed in what it proposed – the modernisation and the making efficient of the didactic process, which lead at the end to an optimum training of youth for the professional, cultural and social integration – it must realise which is the course and the dynamics of development of the modern society. Its tendency of dynamising and maximum optimising of the human activity, of modifying the report between the creative and the routine activities

The informatics has known an exponentially quantitative and qualitative development. The occurence of the faster and faster computers, of the different performant backgrounds of stocking and sending the information, of some new programming strategies determines as for the informatic field to be one of the top field in the modern society. Starting with the administrative and routine activities, continuing with fields like: industrial-economic, nuclear, aerospatial, research ones, recreation activities, education, artistic creation, the computers came strongly and imposed as an ideal work partner. The huge networks, as the financial-banking ones, the Internet, the commercial networks with dozen of users who change information from all the fields and everywhere, transformed the plannet into "a informational planettary village".

The actual trend tries to integrate the computer in the daily life of people, by working activities, by recreation, informing, selfinstruction, economical administration by the conecting of the users at the informational highways. In this technological context, people's life will transform according to everyone's possibilities to evoluate in the global system. School has a primarily role for the attenuation of the impact with the informatic field, for preparing the youth in the use of the computers and in the field knowing (the synchronising of the disciplines syllabus – informatics; the setting of some informatics labs where to develop classes to almost all the didactics disciplines; the adaptation of the teacher's staff to the new demands).

We are – even we want it or not from the mentally point of view – in an informational society, where information, stocking, processing, transmitting and managing of it are dominant. Being illiterate in the third millenium means lack of experience in the informatics field. Our integration on an individual plan and also, at the national level in the system governing the world, depends firstly by

what the generations who pass and will pass through our schools will achieve.

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