EDUCAȚIE ÎN INGINERIE

THE QUALITY EVALUATION OF EMOTIONAL ENGINEERING EDUCATION OF STUDENTS FROM THE PROCESS EQUIPMENT DEPARTMENT AND THEIR IMPLICATION OF UNMET TRAINING IN THE ACTUAL GLOBAL CONTEXT[2]

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Abstract: *This paper is a new research about how to intented to emphasyze the possibilities to grow up the Romanian economy within* young engineers *in spite of all problems related to education, poverty, economic crisis, unemployment, migration, unmet training[1].*
On the one hand, it identifies and proposes the approach of a new research regarding theevaluation of the quality of emotional engineering education of students from the process equipments departmentand implication of Romanian youth of unmet training in the actual global context.
On the other hand, the paper reflects the role of engineering training development in the process equipments department during the current economic crisis. We investigate how the Romanian labour market and the educational system may contribute to the decrease of the option for emigration as the only saving opportunity for more and more young people[1].

Key words:*. unmet training, driving forces, brain migration,emotional* engineering educatio*n*, *process equipments*.

1. INTRODUCTION [1,2,3]

The paper highlights thenew trend influencing the youth labour market and the changes in the interactions between the engineering educational services market

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and the labour market.The Romanian economic crisis is a decisive factor that determines young people either to migrate from Romania or to find new solutions in research and development area.
The objectives refer to the assessment of the tendencies of Romanian youth migration and reflect the analysis of the impact on the educational system. The results of the research draw attention to the potential loss of our knowledge society
.

1.1. Objectives:

1. An appreciation of the role ofRomanianemotional engineeringeducation as a driver of technological change in economic development, past, present and future;
2. Awareness of key models of the education, research and innovation process, their strengths and weaknesses and their implication on the labour market of young people which want to work infield of industrial process equipment [1];
3. An appreciation of policy and regulatory educational challenges for youth in relation to technological change and innovation [1].

1.2. Prior Work [1,2]

From the perspective of unmet training, we examined the new trend influencing the youth labour market and the changes in the interactions between the engineering educational services market and the labour market.
We also discussed the main strategic choices available for the Romanian engineering education in order to successfully integrate in the European area of education and research.
Education and training are crucial to economical and social change. The flexibility and security needed to achieve more and better jobs depend on ensuring that all citizens acquire key competences and update their skills throughout their lives.

1.3. Design/ Methodology [1,2]

This report presents a study of past, present and future changes to engineering education and training of youth, versus low Romanian standard of life.

1.4. Implications [1,2,3]:

New technology in education and labour market; tools and services enhancing learning; open education and resources; assessment, accreditation and qualifications; globalization of education; roles of institutions; individual and profession-driven education; life-long learning; formal education goes informal; individual and social nature of learning, the epistemological and ontological bases of pedagogical methods [1,2].

2. EXPERIMENTAL RESULTS [1,2,4,5,10,11]

Emotional engineering education iskey driver of scientific discoveries.
Scientific discoveries are key drivers of economic growth, drivingand fueling the economy **[2,5].**

Leading economists have identified technological progress as the single most important determining factor in sustained economic growth. While some technologies can be anticipated, especially those that are improvements or new uses of old technologies, there is such rapid change in fundamentally new areas that it is hard to fullyunderstand the implications **[2,5].**

Our expectations are:

a) show the importance of appreciations of the students'role in emotional engineering education and labour market; **[2,5**]
b) demonstrate the differing types of quality tools/techniques attributed to the Japanese but used by all of us in educational organizations/ companies;**[2,6,7]**
c) illustrate the applicability of tools and techniques of quality teaching methods improvement using American models;**[2,6,8,9]**
d) describe individual applications of appropriate quality tools which involve evaluation of the quality of emotionalengineering education.

2.1. Forces For Change of Labour Market andEngineering Educational System [1,3,4,]

Every university and enterprise, personal or commercial, are propelled by particular key factors, such as the human force and goals. Others, such as governmental regulations, are external. Identifying and assessing these fundamental factors is both the starting point and one of the objectives of the scenario methodology [3].

Underlying driving forces can include social dynamics, educational issues, technological issues, economic issues, political issues, environmental realities, technological change, government economic and social policy, demographics, international environmental institutions, and world commodity markets [3]. Is control of driving forces a possibility?

Change is the human experience consists of matching our capabilities against the challenges we face [3].

2.2. Collaborative development of new process technology/equipment in the process industries: in search of enhanced innovation performance[4,10,11]

A theoretical framework has been constructed based onThomas Lager's and Johan Frishammer's researches [10] and on the input from a review of previous publications related to this subject area, a review of collaboration concepts, and some practical previous experience from the authors and some industry representatives.

According to Arslam Aslam [4] we can identify seven points of Engineering Quality of Education(figure 1).

This article can hopefully provide both theoretical insight and practical guidance on how process firms and equipment manufacturers could address the challenges posed by joint collaboration. Its main contribution and purpose is thus first of all to stimulate industry professionals in their search for enhanced innovation performance for the collaborative development of new process technology/ equipment in the process industries. Secondly, the framework is intended to provide a platform for further research into this area, which is of the utmost importance to effective R&D management in the process industries.

Figure 1: Seven Points of Quality Education [4]

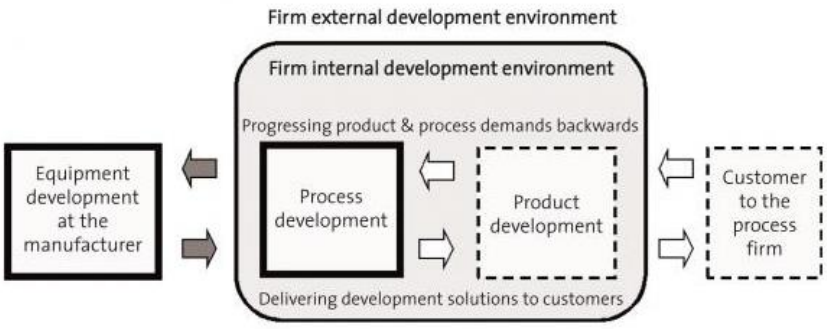

Figure 2: The internal and external innovation environment for firms in the process industries, in the external innovation environment not only external customers prevail, but also the supplies of necessary process technology/ equipment [10]

The proposed framework includes a discussion of expected outcomes for such collaboration and a preliminary list of pros and cons from the perspectives of the different parties. A new conceptual model for the full life cycle of process technology/equipment development is presented, relating potential drivers for collaboration and success factors to be investigated to different phases of the development life cycle.

Furthermore, we used a classification matrix for collaboration which has been constructed by Thomas Lager and Johan Frishammerusing the dimensions “complexity of equipment” and “newness of equipment” as determinants [10]. The matrix is introduced as a part of the theoretical platform, to be used in the selection of alternative forms of collaboration and in the further development of success factors for such collaborations.

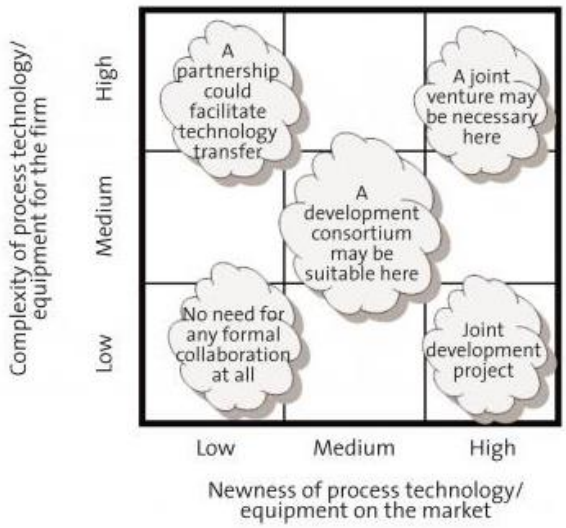

Figure 3: The collaboration matrix for the joint development of process technology/ equipment [10]

The matrix could first of all be used as a tool in the selection of alternative forms of collaboration. Different form for collaboration in different parts of the matrix could be proposed. However, which collaborate forms are best suited in different parts of the matrix must be studied in further empirical research.

2.3 Results [1,2]

There are the follow results:

- to contribute to this vision-building process on ways of addressing emerging competence needs,
- to contribute to the development of imaginative visions and scenarios of the youth's future of learning and working in field of industrial process equipment in order to support priority setting for emotional engineering education, training and skilling policies;
- to decrease young people's brain migration and unemployment.

3. DISCUSSION [10]

Providing effective education is important in ensuring well-rounded and competent students who can contribute towards the development of our nation**.** This study is part of a larger study investigating the effects of an affective-cognitive approach on learning. Since 2009 our small group of teachers, as wel as parents, involved in educational process has been started to fiind solutions for quality assurance problems in education.

We are now trying to open a new folder with many educational and economical files for improvement Romanian engineering education and economy. The most important files are Emotional Engineering Education, Continual Improvement of Educational Organizations and Teaching Methods Change**[2,5,6]**.

There is the philosophy of making each students/ future worker responsible for the quality of his or her work.

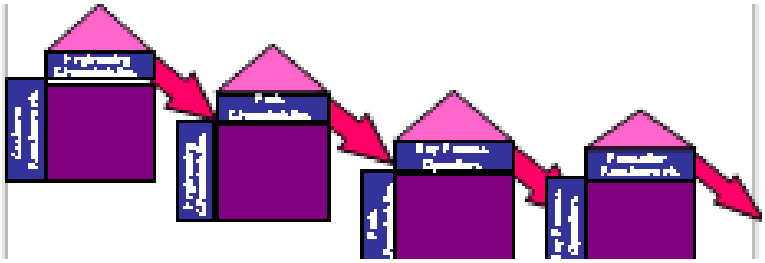

Figure 4: The House Of Quality [2]

The QFD methodology has been developed into a continuous process, and it can be applied equally well to educational or manufacturing environments. QFD(Quality Function deployment) **[2,5,6].**

Customers(Students, Employers , Parents, Representatives of political, social, educational and economic environment)have a dire challenge in measuring and reading performance requirements from variousengineering programs.

4. CONCLUSION [2,5,6,10]

Blended learning has become a higher choice for several institutions as the numbers of enrolled students increase. This method will result in a higher turnover for students of professionals in the next and upcoming generations. This change will shift the academic role as institutions create opportunities for students on other areas of professional departments other than on-campus based programs **[2, 5, 6]**.

On the one hand, successful process technology/equipment development by the equipment manufacturer is thus often largely dependent on access to a knowledgeable process firm as a collaborative development partner. One way to speed up the product and process development processes for both the process firm and the equipment manufacturer in the future may be to “short-circuit” the product and process innovation chain presented in figure 2. Such a desired effect may be best achieved by stronger integration and improved internal and external cross-functional collaboration, a topic that will be further explored and discussed in the following researches [10].

On the other hand,sustainable development considerations require youth to embrace a range of additional skills beyond the science they have traditionally relied upon to solve engineering and mathematique problems. This will require changes to the way in which education prepares students for professional practice. To meet this demand, the existing content-based curriculum was transformed into an outcome based education curriculum for training engineers **[2, 5, 6]**.

The change has created new teaching demands on engineering and mathematique lecturers with the introduction of new compulsory courses (creativity course, soft skills courses, entrepreneurships, community involvements etc.) in addition to the increasing engineering subject matter content to be covered [6].

5. ACKNOWLEDGEMENTS

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