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SURVEY ON THE ATTITUDE OF STUDENTS IN ENGINEERING RELATED TO THE NON-FORMAL EDUCATION (I)

BY

MIHAELA COZMA and ROMEO-MIHAI CIOBANU*

“Gheorghe Asachi” Technical University of Iași,
Faculty of Textile, Leather and Industrial Management

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Abstract. This study is a quantitative research in order to identify the attitude of the students in engineering from the “Gheorghe Asachi” Technical University of Iasi, Romania, in relation to the non-formal education. The survey has been conducted on a sample of 48 students and it was based on a questionnaire with 10 relevant questions. The research results are presented according with the specific objectives of the survey, and can sustain a future project in order to develop a non-formal education framework for the students in engineering.

Key words: students in engineering, attitude, non-formal education.

1. Introduction

The actual requirements from the labor market determine an environment in a continuum change with significant challenges for the both

*Corresponding author; *e-mail*: crm_iasi@yahoo.com

students and educational system. It is obviously that in the last years is necessary more and more a continuum education as a priority at the global level. "There are two things which can be considered as the most stressing discovery for the mankind, namely the art to rule others and the art to grow them." (Kant, 1992). Management is the art and science to rule people and education is the art and science to grow people, too.

The education is a specific social and human phenomenon to deliver the social and cultural heredity recognized by any values, knowledge, and skills (Potolea, 1985). There are three types of education from the institutional point of view, namely: the formal education, non-formal education and informal education. It is necessary to understand the complementarities between these forms, in order to sustain and promote long life learning, by their main characteristics:

- a) *Formal education* is :
 - Part of an educational system
 - Organized
 - Structured
 - Planed
 - Certified
 - Controlled
 - Deliberate
 - Based on norms and regulation as the relationships between professors and students.
- b) *Non-formal education (alternatives education)* is:
 - Organized
 - Structured
 - Planed
 - Flexible
 - Deliberate
 - Optional
 - May be certified
 - Contributes to the development of competencies.
- c) *Informal education* is:
 - Unstructured
 - Unplanned
 - Non-deliberate
 - Has a spontaneous action
 - Carries on everywhere and any time
 - Based on individual knowledge and experiences by day to day
 - Has a strong influence on the process of socializations.

Non-formal education is a form of learning that won a higher rate in recent years at young people with ages ranging between 20-24 years (Neacsu-Dalu *et al.*, 2010). This situation is very true because the stage of 21-28 years is under the sign of the sensation soul (Rohen, 1994). Even if the intellectual potential and targets are very high, there are a lot of affective storms because of the sensibility on the impressions, which come from the environment. There are a variety of definitions and perspectives on the non-formal education developed along the time (Freire, 2006), (Gardner, 1983), (Knowles, 1990). Today, the non-formal education starts from the learning cycle based on experience, and it has the following main three actions (Macovei, 2010):

a) The proper activity (the experience) which can use the simulations, games, role games, stories, brainstorming, brainwritting, debates, individual/team working, etc. as work methods.

b) The reflection, namely to awareness the obtained effects.

c) The application, in order to generalize the experience in the future.

The non-formal education has a large scale of advantage as the following:

- It is focused on the student, and it has various thematic.
- It is composed by interactive and attractive activities according the subject of discussion.
- It contributes to the development of the both general culture and technical knowledge.
- It is focused on a quickly application of knowledge obtained.
- It is a response to the requirements and necessities of continuous education.

The survey goal has been to identify the attitude of students in engineering in relation to the non-formal education. The survey has been conducted on a sample of 48 students in engineering from 9 faculties of “Gheorghe Asachi” Technical University of Iasi, Romania.

The survey specific objectives have been the following:

O1: To determine the students’ information level concerning the specific methods of non-formal education.

O2: To determine the students’ awareness level regarding the benefits of non-formal education.

O3: To determine the students’ experience level regarding the non-formal education.

2. Research Methodology

A questionnaire based on 10 relevant closed questions has been used as the tool of survey. It has been used the nominal scale of classification because the survey has been a quantitative research. Thus, we have used the Likert scale that is composed by a lot of affirmative expressions. Each answer in relation to

these affirmations has the next four ranks: 1- not at all; 2 - a little; 3 - much; 4 - very much and each subject has pointed the appropriate answers.

The questionnaire has been administrated by accessing the internet, and it has the following questions:

1. Do you associate the non-formal education with one of the following methods?

- Non-educational Educational Non-conventional Formalized
 Non-formalized Traditional

2. Who can get benefits from the non-formal education?

Table 1

Beneficiaries of the non-formal education

	Not at all	A little	Much	Very much
Community				
Society				
Employers				
Volunteers				

3. Does the non-formal education help you to develop individual/professional skills?

Table 2

Skills and non-formal education

	Not at all	A little	Much	Very much
Individual				
Professional				

4. How do you agree with the following affirmations?

Table 3

Personal opinions concerning the non-formal education

Alternatives	Rank
The non-formal education is completely different from the formal education	
The non-formal education is composed by educational activities and actions	
The non-formal education is an optional learning method	
The non-formal education carries on in organized educational institutions	
The non-formal education is an opportunity to learn	
The non-formal education is a trump on the labor market	
The non-formal education is recognized by employers	
The non-formal education could be much promoted at the national level	
The non-formal education contributes directly to reach the key EU objectives	
The non-formal education supports the people to get new competencies	
I use the non-formal education if it should be certified	

I have used the non-formal education	
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5. What is the specific environment for the non-formal education?

- Institutions of education Out of institution of education
 Family/Friends/Colleagues/Social environment

6. The non-formal education has been promoted for me in the next circumstances:

- To come into contact Faculty Mass-media
 Family/Friends/Colleagues another method

7. What Faculty do you study?

(Please, mark your own faculty from the list of 11 faculties)

8. What year of study are you now?

- I II III IV
 V (Master, the 1st year) VI (Master, the 2nd year)

9. What is your age?years

10. What is your sex?

- Male Female

3. Research Results

The students of target group became from 9 faculties and they are from 20 to 26 years old, 65% males and 35% females. The information gathered in this survey has been processed and illustrated in 26 diagrams as an important part of the entire study, as a subject of a dissertation work.

The most important results are presented in the table 4 as the positive (+) and negative (-) conclusions according to the survey objectives.

Table 4

Relationships between the survey objectives and results

<i>Survey Objectives</i>	<i>Survey Results</i>
O1: To determine the students' information level concerning the specific methods of non-formal education	(+) For 42% of students the non formal-education is associated with a "non-conventional method", and for 35% it is an "educative method". (+) 81% of students consider the non-formal education carries on at this moment outside of the educational institutions. But, 68% agree with the educational environment. (+) All of students consider that the non-

	<p>formal education is different from formal education.</p> <p>(+) 98% of students consider that the non-formal education is composed by educational activities and actions.</p> <p>(+) The non-formal education has been promoted for 91% of students by using the family/friends/colleagues (35%), direct contact (35%), mass-media (17%), and faculty (4%).</p> <p>(-) A lot of students (83%) consider that the non-formal education carries on inside family/friends/colleagues.</p> <p>(-) There are certain students who don't know the non-formal education contains educational activities (2%), and it is an optional learning form (6%), too.</p>
<p>O2: To determine the students' awareness level regarding the benefits of non-formal education.</p>	<p>(+) 90% of students are conscious that the volunteers benefit much and very much from the non-formal education.</p> <p>(+) 87% of students are conscious that the employers have a lot of benefits.</p> <p>(+) 79% of students are conscious that the society has a lot of benefits, too.</p> <p>(+) 73% of students consider they could benefit very much for their individual development, and just 50% have the same answer regarding their professional development.</p> <p>(+) 60% of students consider very much the non-formal education is a trump on the labor market, and it is much recognized by the employers, too.</p> <p>(-) But, 33% of students say the non-formal education is a little recognized by the employers.</p> <p>(+) 83% of students are conscious that the non-formal education has an important role in the people competencies development.</p> <p>(+) 93% of students say the non-formal education is an opportunity to learn.</p> <p>(-) But there are certain students who are non-conscious of these benefits (10% regarding the volunteers and 2% regarding the employers).</p>
<p>O3: To determine the students'</p>	<p>(+) 54% of students have profited very much, 29% have profited much and 10% just a little</p>

experience level regarding the non-formal education.	from the non-formal education. (+) 58% of students intend to profit much and very much by the non-formal education, and 29% have a little intention if it will be certified. (-) but 13% have no intention to profit by this education. (-) 6% of students tell that they never have profited from the non-formal education.
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5. Conclusions

The main authors' original contribution is the survey itself because its goal has been to identify the attitude of students in engineering in relation to the non-formal education.

This research has been conducted on a sample of 48 students from 9 faculties of "Gheorghe Asachi" Technical University of Iasi, Romania, as a subject of a dissertation work. The research methodology has been based on a questionnaire with 10 relevant questions.

In this work we only presented the main results as certain positive and negative conclusions according to the specific objectives of the survey.

The main conclusions of this research are the following:

- The majority of students consider the non-formal education as an opportunity to learn based on educational activities and they agree with the educational environment. But, they consider it is carried on at this moment outside of the educational institutions, especially in their social environment.
- The students' awareness level regarding the benefits of non-formal education is very high. First of all, they consider the volunteers will benefit very much. The employers and society will have a lot of benefits, too.
- Over 50% of subjects had a positive experience in the non-formal education and they intend to develop it.
- A little number of subjects (around 10%) is non-conscious of non-formal education benefits or has no intention to profit by this education.
- The strong necessity to teach the students about the non-formal education, and its tools and applications.
- The authors consider this survey as an important step to sustain a decision making process to design a future project in order to promote the appropriate non-formal education methods for the students in engineering.

Thus, the formal and non-formal education during the university studies can represent a starting point for each student for his/her individual long life learning according to Rudolf Steiner's words: "*During the scholar studies is not important to get a complete education, but rather to be prepared to get it from the life*".

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SONDAJ DE OPINIE CU PRIVIRE LA ATITUDINEA STUDENTILOR IN INGINERIE FATA DE EDUCATIA NON-FORMALA

(Rezumat)

Lucrarea de față prezintă rezultatele unui sondaj de opinie efectuat pe un grup țintă de 48 de studenți în inginerie din 9 facultăți ale Universității Tehnice „Gheorghe Asachi” din Iași. Obiectivul general al sondajului a constat în identificarea atitudinii studenților față de educația non-formală. Atingerea acestui obiectiv a necesitat trei pași importanți - trei obiective specifice și anume determinarea nivelurilor de cunoaștere, de conștientizare a avantajelor și de experiență a subiecților referitoare la educația non-formală.

Cercetarea s-a bazat pe conceperea și administrarea unui chestionar cu 10 întrebări relevante, rezultatele prelucrării răspunsurilor fiind ilustrate detaliat în 26 de diagrame care fac parte din cercetarea in-extenso realizată în cadrul unei lucrări de disertație. Din considerente obiective, aici sunt prezentate sintetic metodologia de cercetare, rezultatele obținute în raport cu obiectivele studiului și concluziile cele mai importante, urmând ca o serie de detalii să fie prezentate în cadrul unei alte lucrări.

Concluzionând, putem afirma faptul că se remarcă în primul rând necesitatea cunoașterii corecte de către studenți a rolului și descriptorilor educației non-formale și totodată nivelul ridicat al așteptărilor prin aplicarea acestui instrument educațional.