

THE CHANGE NEED EVALUATION BASED ON THE STAKEHOLDERS SATISFACTION IN TECHNICAL HIGHER EDUCATION

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ABSTRACT: Considering the technology progress and socio-economical dramatic changes too, Romanian technical higher education system has looked for reforms and updates in order to perform adequately in East European region. The current study is based on a set of questionnaires designed to evaluate and cross-check the teachers and students satisfaction regarding the educational processes. Data from the most important six Romanian public technical universities have been collected, as follows: Politehnica University of Bucharest, Politehnica University of Timișoara, Technical University of Cluj-Napoca, Transilvania University of Brașov and "Gheorghe Asachi" Technical University of Iași. An overall conclusion regarding the low satisfaction degree, as well as several pathways to design change projects have been identified in order to increase the service quality in higher education

KEYWORDS: Satisfaction; quality; higher education; change; quality in education.

1. INTRODUCTION

Higher education institutions are undergoing a process of transformation [1]. Massive change is impacting on all facets of society, creating new dimensions and great uncertainty and, the issues facing us today is how to manage such change [2]. Everybody needs to understand the power of change and the benefits that can arise from it.

There are various options of stakeholders' analysis applications in all areas, including education, higher education in particular, which is under continuous pressure of changes and demands to follow the global trends of technology innovations. At the same time, it is expected to promptly respond to demands of market and competition. Universities are, inherently, learning organizations familiar with the concept of lifelong learning, so they value the perspective of changes and the adoption of environment observation from the stakeholders' point of view [3].

In a knowledge-based society, the university becomes the main supplier of „raw material”, being an entity that produces information through scientific research and then transferring it to the society by practical results[4].

”Universities can be very different, not only from one country to the next, but also among different scientific sectors within the same country” [5]. This statement confirms that in order to improve quality, it is not enough to define the concept of quality in higher education and follow general principles. Although it can be a part of the progress, it is also so important to define the requirements and essential changes according to the field of education [6].

In this context, the higher education's mission is to meet the individual's needs for professional development, so that they have the possibility of labor market insertion straight away after graduation. At the same time, the university must answer the competences required by the socio-economic environment. It must be taken into consideration that these needs change over time; they are under the influence of an accelerated pace due to fast evolution of technology and management paradigms. This way, with the graduates' environment continuously changing, an effort of accommodation and anticipation is required from the universities [4].

In order to increase the quality in higher education we must gather, remember the goals that bring us together, debate how we perform in achieving them, identify weaknesses and find remedies, apply remedies and ultimately meet again to debate if the applied remedies managed to achieve the desired outcome [7].

The problems and challenges that the higher education faces nowadays require innovative and adaptive solutions that will be applied through an effective change management.

In order to be able to establish some of the changes that need to be done to improve the global quality of the technical higher education, a diagnosis of the current situation regarding the stakeholders' satisfaction was required.

The stakeholders were chosen following the ISO 26000:2010 and ISO 9001:2008 Standards Guidelines. By adapting the ISO 9001 Standard principles, which help to ensure that customers get consistent, good quality products and services, followed in turn by many business benefits, to the higher education environment and combining it with the ISO 26000 Standard that provides guidance on the relationship between an organization, its stakeholders and society, on recognizing the core subjects and issues of social responsibility and on an organization's sphere of influence, we have been able to define the stakeholders in technical higher education and to establish a research method for the study [8] [9].

According to Edward Freeman, in „Strategic Management: A Stakeholder Approach”, the stakeholders, meaning every “individual or group that has an interest in any decision or activity of an organization”, play a vital role to the organization's performance, in our case, to the higher education performance and quality [10].

2. MATERIAL AND METHODS

In order to be able to identify in a structured way areas for improvement and to draft change projects in the technical higher education sector, sets of questionnaires have been developed following the stakeholders level of satisfaction. Teachers, students and employers were identified as main stakeholders; a questionnaire has been designed for each category. In the first step, the teachers and the students were considered and the collected information has been cross-validated and used to develop, in the second step, the employers dedicated questionnaire.

Using the guidelines of designing questionnaires [11][12], questions were raised for teachers and students, and then the questionnaires have been sent to six technical Universities in Romania. Even if the private educational system has developed in the last two decades, no private technical universities may be identified.

The teachers and students questions were grouped into four categories, as follows: work environment, financial resources, professional development, and satisfaction.

The questionnaires structure is presented in the figures below, where abbreviations were used for the questions within the questionnaire.

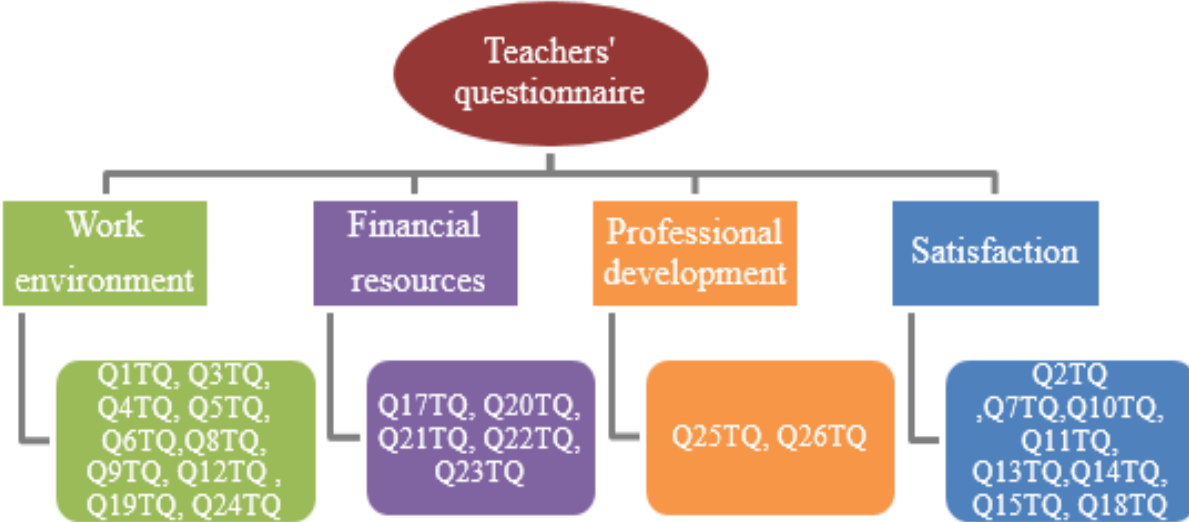


Figure 1. Teachers' questionnaire structure

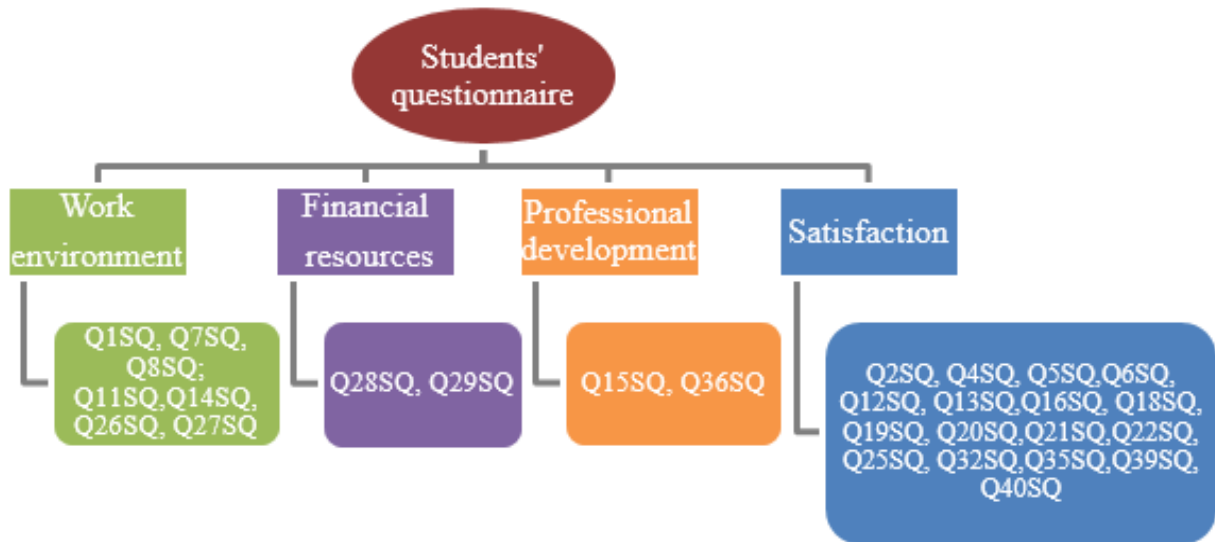


Figure 2. Students' questionnaire structure

3. RESULTS AND DISCUSSIONS

3.1 Teachers' questionnaire analysis - Answers distribution for the questions related to working environment

Starting from the answers offered by the teachers (Figure 3), the first category, referring to the working environment, stands out by the answers received at questions Q9TQ and Q19TQ where the majority of the teachers consider that the number of students assigned to a group is too big and the time dedicated to practical activities is not enough. The number of students in the study groups is linked to financial indicators responsible for public universities financing. The same link is related to the ratio teaching (courses) versus applications (practical activities).

An important aspect refers to the teachers' involvement in the decision-making process; nearly 60% opinions were related to no-involvement (lack of consultation). By taking into consideration the teachers' views and opinions, changes tailored on their needs may be applied, but in reality no consultation of teachers has been conducted in relation to the financial indicators. Sometimes adjustments were applied, but neither informing about the reasons of certain indicators, nor a minimal consultation of the teachers has been effectively launched.

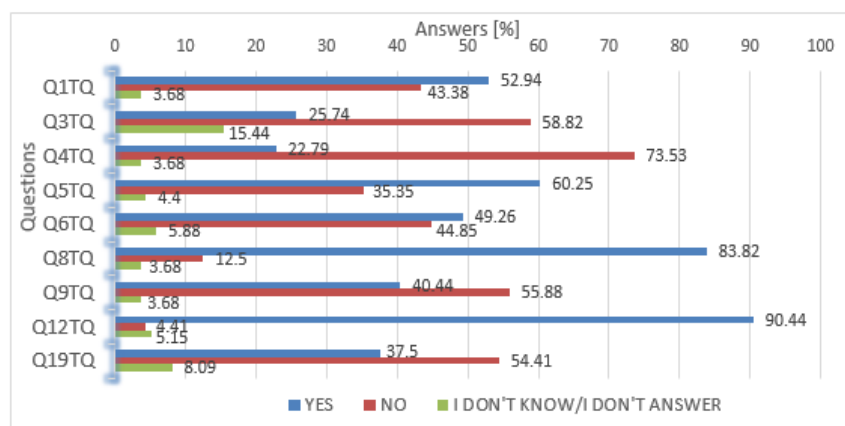


Figure 3. Teachers' satisfaction versus the working environment

- Q1TQ - Do you find the laboratories and classrooms adequately equipped?
- Q3TQ - Does the University involve you in the decision-making process?
- Q4TQ - Are you having problems collaborating with your colleagues?
- Q5TQ - Are optimal working conditions assured (office supplies, IT etc.)?
- Q6TQ - Is support provided for computers and laboratory equipment?
- Q8TQ - Are cleaning services provided in laboratories?
- Q9TQ - Do you consider that the number of students assigned to a group is optimal?
- Q12TQ - Do you consider that the university parking should be free for teachers?
- Q19TQ - Do you consider that the time dedicated to practical activities is enough?

Cumulating the „very big” and „big” answers received at the question 24TQ, more than 50 % percent of the teachers find the teaching load too high reported at the schedule. Though the other half expresses their opinion regarding the teaching load as being moderate, it is not necessarily positive due to the schedule partially adapted to the teaching load. The Q4TQ result of nearly 23% of teachers reporting communication problems with the colleagues may be correlated with Q3TQ result of nearly 60% lack of teachers’ consultation.

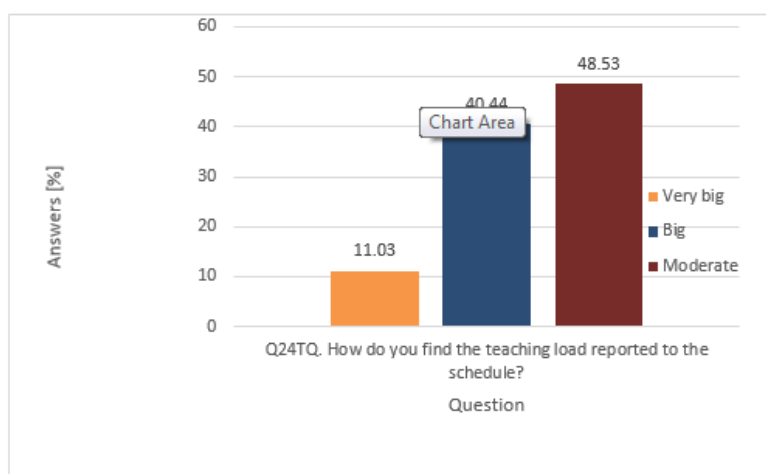


Figure 4. Teachers’ teaching load in relation to the schedule

3.2 Teachers’ questionnaire analysis - Answers distribution for the questions related to financial resources

Analysing the answers received at the questions referring to financial issues, it can be observed that most of the teachers share the same beliefs. A very important and also worrying resulting aspect is that more than 86% of the teachers agree that the current funding system is inappropriate. Teachers would also like to change the way the remuneration is made, they consider appropriate a funding based on career performance.

The need for changing the present funding system in higher education is strengthened by the last three questions chosen to be a part of the above graphic, as far as more than 60% of answers approve potential solutions for funding as identified through teachers perceptions : recovery of graduate tuition, scholarships linked to students performance allocated directly to students.

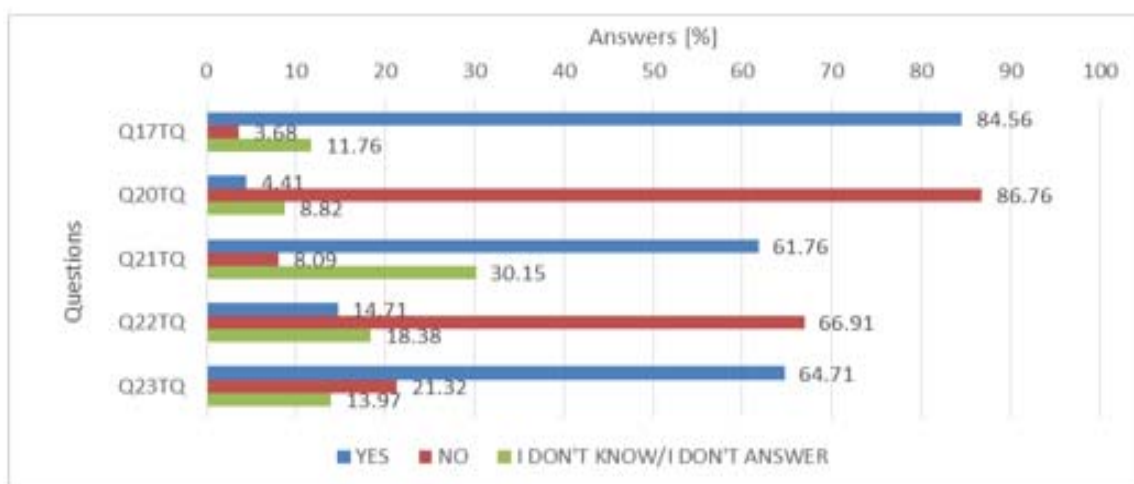


Figure 5. Teachers’ satisfaction versus financial resources

Q17TQ - Do you consider that remuneration should be done based on performance?

Q20TQ - Do you find the current funding system suitable?

Q21TQ - Do you believe that by allocating scholarships directly to the students and not to the Ministry of Education, their performance will be increased?

Q22TQ - Do you believe that the budget subsidizing for students who leave the country is effective for Romania?

Q23TQ - Do you believe that a graduate's tuition expenses should be recovered in time?

3.3 Teachers' questionnaire analysis - Answers distribution for the questions related to professional development

Though every teacher has the ability and freedom to draw he's professional path, most of the surveyed find the opportunity for research and projects as to be insufficient. Considering sufficient and insufficient answers, one may reach nearly half of the surveyed, concluding quite a non-motivating environment for professional development. Greater involvement on their part, concerning their professional growth, would make the percentage of negative answers decrease, but in a non-motivating professional environment, the motivated teachers appear the exception (i.e. 4.41% perceive certain opportunities).

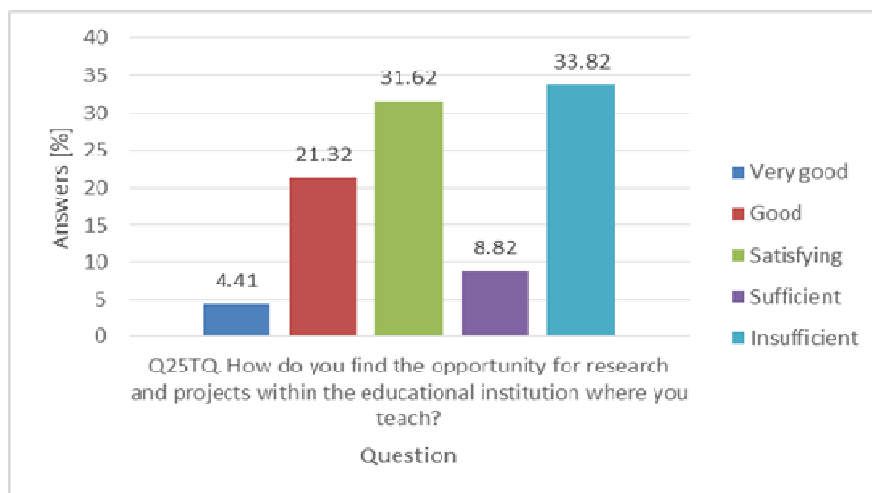


Figure 6. Opportunity for research and projects

Although many of the teachers are satisfied with the mobility and inter-university exchange opportunity, an important percentage of 39% state the opposite. Considering the negative and absent answers, more than half of professors find the need for change concerning the mobility. This may be correlated to the previous item concerning opportunities for research and projects with a similar level (about 50%).

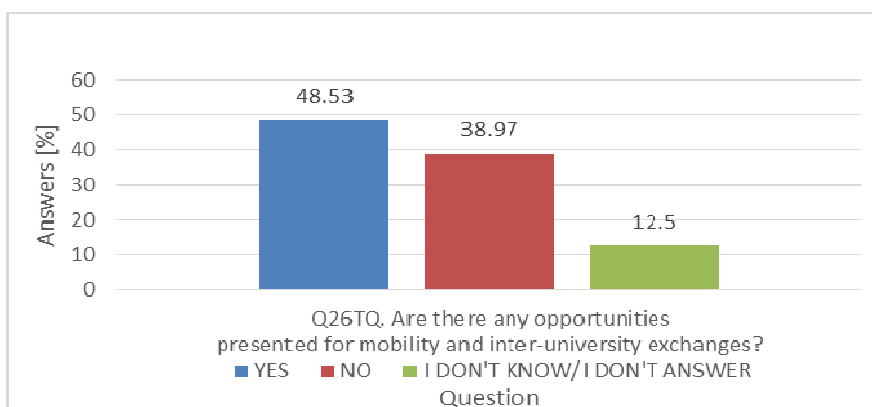


Figure 7. Opportunity for mobility

3.4 Teachers' questionnaire analysis - Answers distribution for the questions related to overall satisfaction

The students' knowledge background is an important factor for the university's performance and prestige; therefore a high satisfaction coming from teachers would be needed in order to achieve the aforesaid. Unfortunately, resulting from our study, not even one teacher can state that students come with a very good knowledge background, showing by this the need for communication and cooperation between the school units and universities. The pupils' background has been discussed at national level, too, an expert working group has been established at the Ministry of Education level and a study is actually in progress looking for solutions to increase the general background with a benchmark indicator the rating of Romanian pupils at PISA testing.

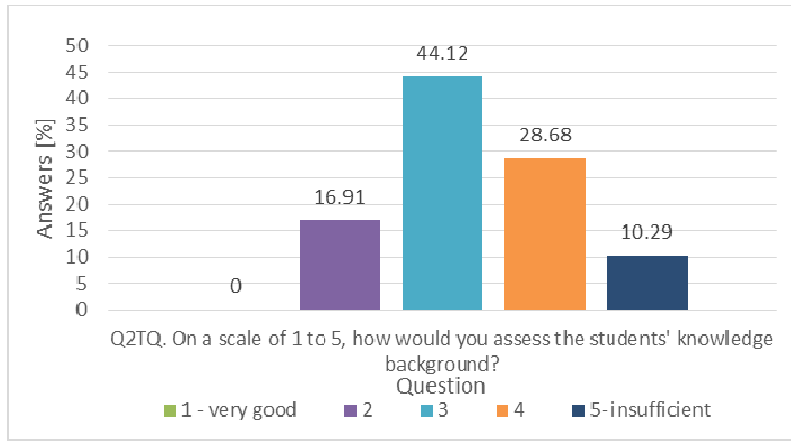


Figure 8. Students' knowledge background

Questions regarding satisfaction on various issues confirm the clear need of change by the categorical answers received from the teachers when they were asked about their income, the way of licensing new study fields, the funding, the promotion opportunities etc. Q13TQ and Q22TQ, Q23TQ may be correlated, nearly the same level, around 60%, is reported.

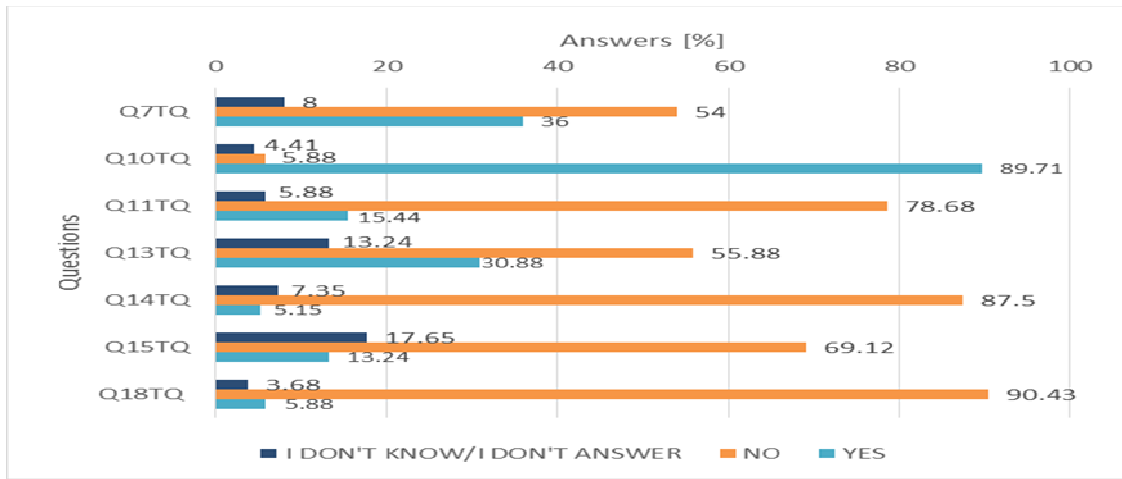


Figure 9. Teachers' overall satisfaction

Q7TQ - Are you satisfied with the conditions and opportunities for promotion?

Q10TQ - Do you believe that the employers' requests should be taken in consideration when creating the schedule?

Q11TQ - Are you satisfied with your income?

Q13TQ - Do you consider that the licensing of new study fields takes into consideration the market's need?

Q14TQ - Do you believe that the funding provided for research is sufficient to make progress?

Q15TQ - Is the concept of performance-based pay applied in the institution where you teach?

Q18TQ - Do you consider that students come with a sufficient knowledge base from secondary school?

3.5 Students' questionnaire analysis - Answers distribution for the questions related to working environment

A very important aspect drawn from the answers received to the questions below is that students strongly believe that the disagreements between the members of the department affect them directly. Apart of the general conviction that a working environment where conflicts are manifested appears as incompatible with the education itself, the students answer may be linked to the teachers' lack of satisfaction, partial mobility, partial lack of professional opportunities, all these being a source of disagreements disseminated outside the professors' community and perceived by the students. This item may be correlated with Q4T (reported nearly 23% collaboration problems with colleagues).

In order to have an adequate concentration and working capacity a student should be offered the time to nourish himself, statement confirmed by 70 % of the students. This item appears the simpler to be applied, as for the students' daily schedule the university is responsible.

Linked to the necessary logistics, that usually exist in universities, the lunch break is the easiest change to introduce. The students' lack of awareness (more than 50%) about the guidance and counseling facilities appears as an indicator of ineffective university management, as this indicator is reported in external assessment of universities, too.

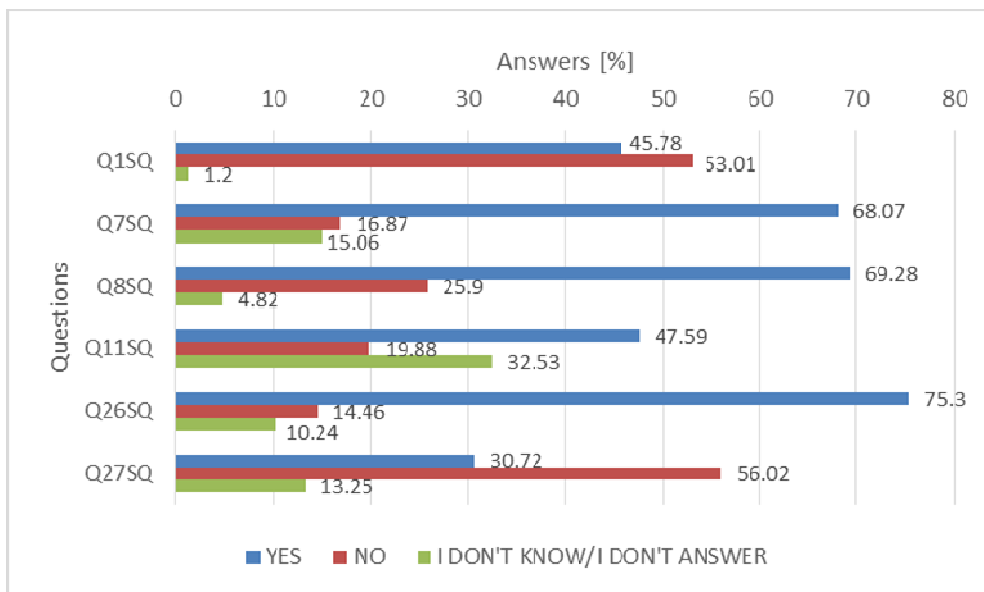


Figure 10. Students' satisfaction versus the working environment

Q15SQ - Do you find the laboratories and classrooms adequately equipped?

Q75SQ - Do you believe that the disagreements between the members of the department have any impact on the students?"

Q85SQ - Do you find a lunch break necessary?

Q115SQ - Do you find the library well equipped?

Q265SQ - Do you have access to information?

Q275SQ - Are you aware of the existence of a guidance and counseling center at the university?

Most students find the teachers' involvement to be moderate, probably due to the teachers' high teaching load that resulted from the questionnaires designed for the professors, but due to the low level of motivation that may be perceived from the answers to Q25TQ, Q26TQ.

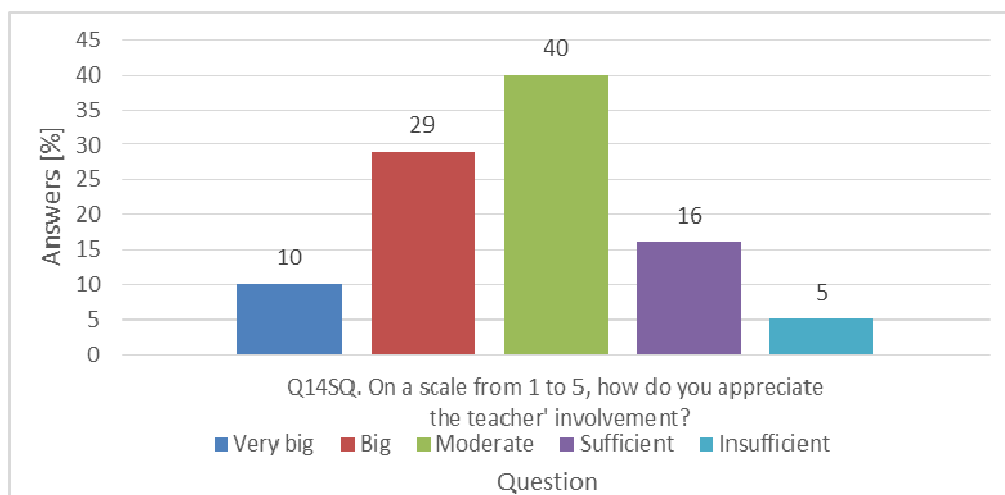


Figure 11. Teachers' involvement

3.6 Students' questionnaire analysis - Answers distribution for the questions related to financial resources

More and more people believe that the budget subsidizing for students who leave the country is not an effective solution, statement fortunately also confirmed by students themselves.

Students also seem to have large opening to the idea of recovering the graduate's tuition expenses in time, which could start from the moment he is first employed, similar to the UK's model.

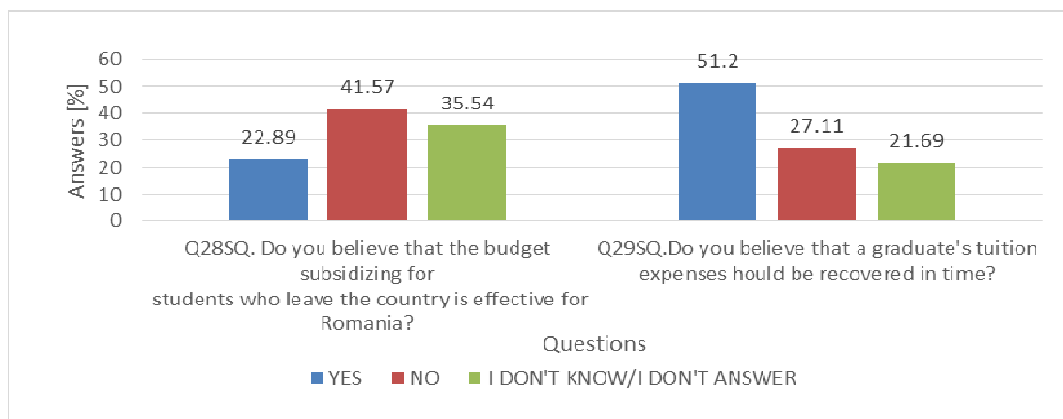


Figure 12. Students' satisfaction versus financial resources

3.7 Students' questionnaire analysis - Answers distribution for the questions related to professional development

A big problem resulting from the students' point of view and personal experience is that the practical activities held during college are not enough in finding a job after graduation. This problem could accrue from the high demands coming from the employers or from the way the curricula is organized. In both cases, an imperative change is needed in order to raise the visibility of the university and to be able to cope with social challenges that wait just around the corner after graduating. Correlating with the teachers' feedback, Q13TQ indicates that more than 55% respondents perceive that new study fields do not consider adequately the market needs.

As far as one noticed, employers ask for experience in order to recruit, but they do not involve effectively in sponsoring research, laboratory settlement or technology updating in partnership with universities, nor in real contribution when consultation is launched in order to improve the curricula and these usually happen due to a limited time devoted by companies, but to quick expected tangible results in terms of "what's in it for the company", too.

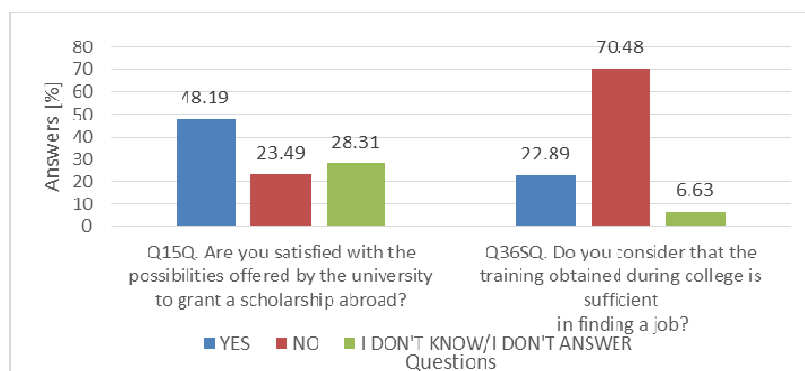


Figure 13. Students' satisfaction versus professional development

3.8 Students' questionnaire analysis - Answers distribution for the questions related to overall satisfaction

Similarly as in the case of teachers overall satisfaction, the results appear far from satisfied in the case of students, too, if we look to Q2SQ (60% not satisfied), Q4SQ (71% insufficient practice), Q5SQ (40% inappropriate scholarship granting), Q18SQ (25% lack of satisfaction with the academic service), Q20 SQ (22% time used inadequately in classes).

High problematic situation should be reported to the high percentage of „yes” answers at Q12SQ, students obviously noticed certain distinctions made between them that are not based on their learning performance. Moreover, the enormous 40% at Q16SQ indicating fraud in examinations should be correlated to Q40SQ (nearly 40% not dispute of exam evaluation) and urgently addressed by university management. These items should be linked to Q35SQ (56% students non-involvement in decision process) and reported back to teachers non-involvement

in consultation (Q3TQ 60% non-involvement). As well as the teachers, students believe that their involvement in high-making decisions is not sufficient.

Students expect to debate on courses content, the lack of satisfaction being significant (Q39SQ 72%).

An interesting fact coming from students is that more than 70% agree with the college enrolling based on exam admission, in which case the university would only have to gain, by prestige, high ranking, outstanding students etc.

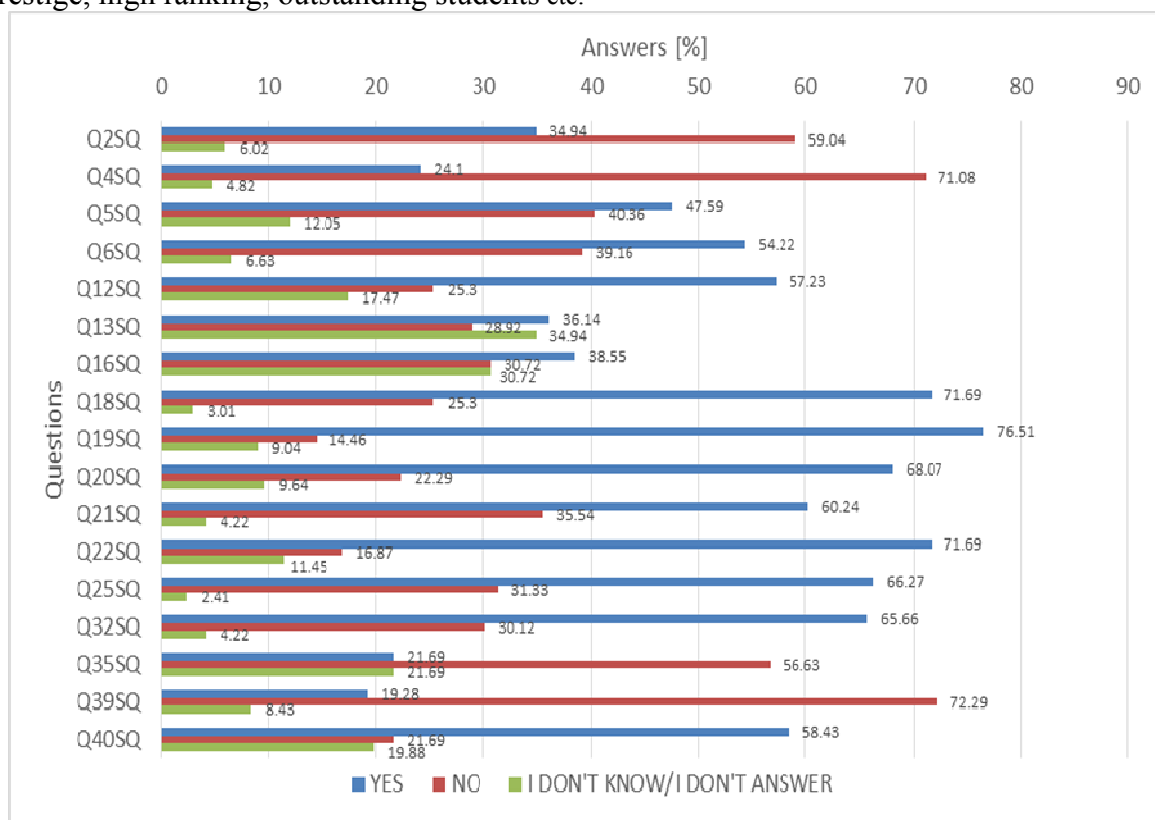


Figure 14. Students' overall satisfaction

Q2SQ - Are you satisfied with the curricula?

Q4SQ - Do you consider that the practice carried out during the years of study is enough?

Q5SQ - Do you find appropriate the way of granting scholarships?

Q6SQ - Are you satisfied with the way that seminars, laboratories and courses are held?

Q12SQ - Do you consider that students' differentiation is done on other basis than school performance?

Q13SQ - Do you find the fees reasonable?

Q16SQ - In your university, are there specific penalties on those who attempt to fraud an examination?

Q18SQ - Are you satisfied with the academic service of the teachers you took contact with? (Communication with students, appropriate language, openness to new)

Q19SQ - Is there responsiveness and availability from teachers for extra help to students?

Q20SQ - Do you consider that the time allotted to classes is used effectively by the teachers in achieving their goals?

Q21SQ - Are you satisfied with the information offered on the university's site?

Q22SQ - Do you consider that the enrolling in college should be on basis of admission?

Q25SQ - Are 3 weeks for exam session sufficient?

Q32SQ - Do you believe that the students that receive scholarships should have the obligation to attend at least 80% of the classes?

Q35SQ - Do you believe that the involvement of students in high-level decisions is sufficient?

Q39SQ - Are you invited to debate on the content of certain courses?

Q40SQ - Is there the possibility to dispute an exam evaluation?

4. CONCLUSIONS

By the answers received from the higher education involved parties, the present paper confirms the need of the change required through the lack of satisfaction found at both students and teachers.

Taking into considerations the both parties point of view regarding all the aspects of the educational process can lead to better management and higher satisfaction.

A common problem for students and teachers is the teaching load which is affecting both of the parties. The students are affected by the fact that the teachers can't manage their time in order to answer all the students' needs and the teachers have a hard time managing the high teaching load. The authors link the teachers' moderate involvement to the high teaching load. In order to raise the visibility of the university and to be able to cope with social challenges that wait just around the corner after graduating, a greater accent should be put on the practical activities held during the years of college.

An important aspect that emerges prominently from the study is that, for both students and teachers, the satisfaction on various issues (income, the way of licensing new study fields, the funding, the promotion opportunities etc.) is very poor, strengthening the need of change.

Involving the teachers and students in the leaderships' decisions is a way to improve the higher education quality by keeping contact with the real needs and requirements.

For continuous improvement, after taking into account and resolving the teachers' and students' needs for change, a similar questionnaire can be distributed periodically in order to permanently keep the leadership updated and aware of the satisfaction degree in which the involved parties find themselves.

Another step taken in this direction would be the development of a research tool designed for the employers in order to find out their satisfaction on the current state in which the technical higher education finds itself. Their answers are relevant due to the fact that they are the first ones who come in contact with the "finished product" offered by universities to society.

5. ACKNOWLEDGEMENT

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