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A STUDY ON THE TRAINING AND FORMATION NEEDS OF TEACHING STAFF IN TECHNICAL UNIVERSITIES

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Abstract: *The role and importance of continuous teacher training and formation has become increasingly important within the context of present preoccupations for quality in higher education institutions. Teaching staff in universities is represented by professionals that need to be permanently preoccupied with their continuous formation and training, in order to develop both their scientific and their methodological and psycho-pedagogical competences. The present paper present the results of a study on the teaching staff in several higher education institutions with technical profile in Romania. The study aimed to identifying the continuous formation and training needs, including the interest in professional training, the domains where this is a must, the competences that need to be developed. Also the concrete means by which formation is identified. The results of the study demonstrated the necessity of a coherent system in professional development in technical higher education.*

Keywords: *technical higher education, professional training, professional skills, teaching*

1. INTRODUCTION

European policies regarding professional development in the case of teaching staff in technical and vocational institutions represent one of the domains of priority for the European cooperation by education [1]. Thus, there is particular concern at European level in order to develop professional skills required teaching staff from universities [2].

Within this context, the main condition for quality education is represented by continuous training and formation for the teaching staff in universities.

Teaching staff in universities have a particular profile, generated by the professional roles they have. Their profile and competences are complex, owing to the

multitude of activities in which they are involved (teaching activities, research, guidance). Considering these aspects a university professor needs to be a very good specialist in his field, a good researcher, but also an innovator and a model from the didactic point of view. Besides the above-mentioned roles, he or she is - first and foremost - a teacher whose didactic competences are formed and permanently trained.

As a conclusion, alongside professional competences, a professor needs to have acquired general and specific teaching competences, either by completing the psycho-pedagogical program, or in an empirical manner, as a result of his experience in working with students.

On the other hand, as a result of the fact that knowledge becomes outdated very rapidly, and of the changes that occur in society and on the labour market, formation and training should become a continuous process, organised in higher education institutions as well. So, university teachers involvement in training programmes becomes a necessity.

It is a well-known fact that secondary education benefits from a coherent system by which teachers are continuously trained, whereas teacher training in higher education institutions is a matter of personal choice, and is completed, in most cases, by one's personal efforts.

Unlike secondary education, where there is a less rigorous selection of teachers, the selection criteria for teaching staff in higher education system are more restrictive, because the graduates with the highest grades and the best results in research are selected. As a result, the human resource is more valuable and better motivated. This is the reason why the involvement of this social and professional category in continuous education which demands the elaboration of specific learning programmes. It is necessary that these programmes must be adapted to the participants' particularities and focused on their specific needs.

The present paper presents the results of a study regarding the formation needs of teaching staff in technical universities.

2. RESULTS AND DISCUSSION

The study aims at giving a realistic picture of the involvement of teaching staff in Romanian universities in continuous formation and training activities. Also, the extent to which the teaching staff in technical universities are informed on the existent formation offer in Romania is presented. At the same time, in the paper the necessity of introducing a national formation system that addresses the needs of university teaching staff is identified.

The research can be included in the category of quantitative studies; as a research method, we have used the questionnaire-based inquiry. As a research instrument, it was used

the questionnaire made up of 12 items, most of which are closed items. The questionnaire was applied online to the members of the target group.

Since the present paper does not constitute itself as an exploratory study, it should be mentioned that, due to the reduced number of respondents, its conclusions cannot be generalised.

In order to highlight the formation needs in technical universities, a non-probabilistic sample was used, comprising 60 university teaching assistants, lecturers, associate professors and professors, all of them holding permanent positions in the universities where they teach: University Politehnica of Bucharest, Valahia University of Targoviste, University of Bacau, Politehnica University of Timisoara, Lucian Blaga University of Sibiu. The respondents teach mechanical, electrical, chemical and computing disciplines.

The target group presents a certain degree of heterogeneity, determined by age, scientific title and experience in teaching certain technical disciplines. The respondents' structure shows that they have various scientific titles, the distribution according to this criterion being as follows: 57% are lecturers, 20% are associate professors, 16% are teaching assistants and 4% are professors (figure 1).

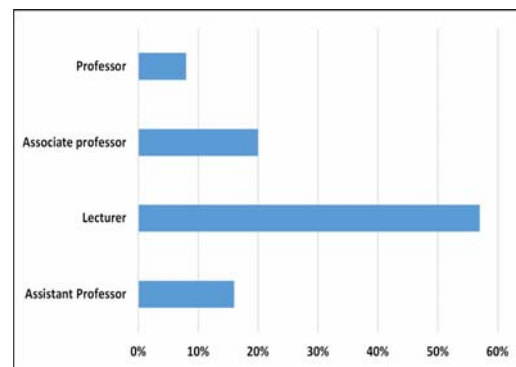


Figure.1 Scientific title

The great number of lecturers who participated in the study demonstrates that they are very much interested in their formation and training at this particular moment in their career. As regards experience, the sample consists of 41% respondents that have been teaching in university for 11-20 years, so they



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are still during the accumulation and formation period (figure 2).

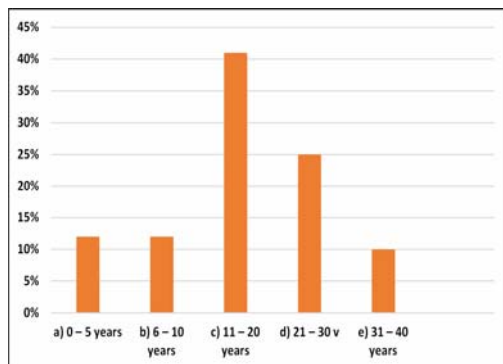


Figure 2. Experience

As regards the *taught disciplines*, most participants teach mechanical disciplines (41%), whereas 27% teach chemical disciplines and a mere 16 % teach electrical and computing disciplines (figure 3).

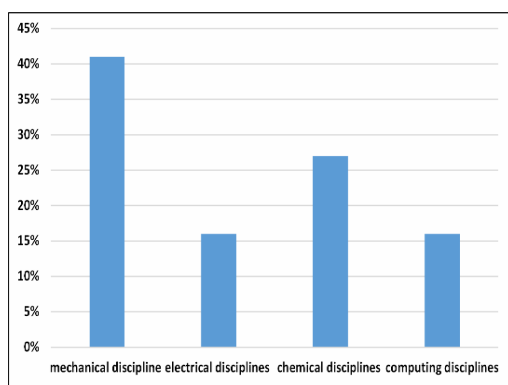


Figure 3. Specialty

A first issue that the study addresses is the *respondents' opinion on the importance of the formation and training activity* among teaching staff in technical universities. Almost all the respondents (98%) considered it of utmost importance or important, whereas a mere 2% deny its importance.

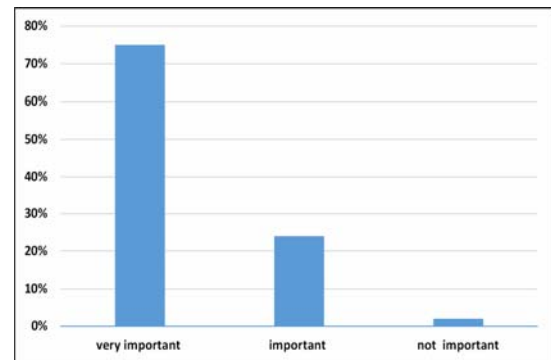


Figure 4. Importance of professional formation

The same percentage (98%) state their willingness to take part in formation programmes, whereas 2% are not interested in attending any formation programme.

When asked on *the reasons why they would like to attend formation courses*, the answers were diverse. Thus, 26% wish to acquire new teaching and specialty competences, 23% are interested in experience exchanges with other colleagues (which is perfectly natural, since we cannot find practice examples at higher education level, the teaching staff being isolated, both in their teaching activity and in research). We remarked the interest in professional development for 22% of the respondents. A mere 2% expressed their interest in obtaining professional credits as a result of their attending formation courses, or admitted that they were determined to participate by the recommendation of the head of the department. Thus, we can notice that the respondents are animated by intrinsic motivation, as, for them, professional formation is - to a great extent- a result of their wish for professional development and advancement, without being imposed by anyone.

Table1. Motivation for attending the formation programme

Motivation for attending the formation programme	%
Acquiring teaching and technical competences	26%
Interest in professional development	22%
Developing Personal portfolio	11%
Obtaining of professional credits	2%
Recommendations of department / faculty management	2%
Exchange of experience	23%
Curiosity	10%
Others	2%

Among the *sources of information on the formation and training programmes* we should mention friends, colleagues and collaborators (38%), the universities they belong to (28%), but also the internet (specialized sites) 17% or the conferences they participate in (16%) (figure 5).

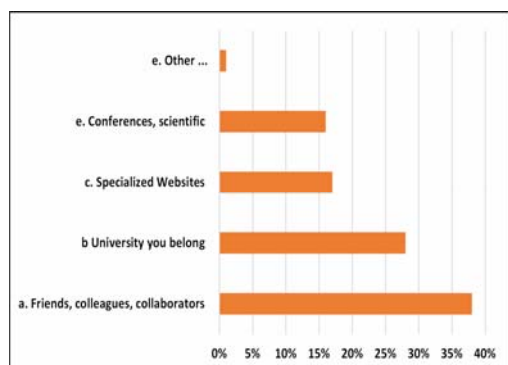


Figure 5. Information sources

Another item of the questionnaire referred to *identifying the most effective means of professional formation and training*. The answers were centralised in table 2.

Table 2. Training means

Training means	%
Training to improve teaching skills	18%
Training for specialized skills	18%
Self-study	12%
Participation in professional conferences	13%
Participation in seminars, themed events, workshops	18%
Exchanges with other professionals in the field	19%
Call a mentor	2%
Other	1%

We can conclude that the respondents are in favour of formation and training by their direct participation in formation courses, in order to improve their teaching and specialized skills, by participating in seminars, themed events or workshops and are less in favour of individual study and attending conferences. An interesting fact is that only 2% would call a mentor. We can notice the respondents' interest in their training in a formal environment, by acquiring information from their colleagues, rather than by individual study or personal research.

Regarding *the frequency of formation opportunities*, 61% appreciated they are rare, whereas a mere 2% appreciated these opportunities appear often; 6 % could not give any answer (figure 6).

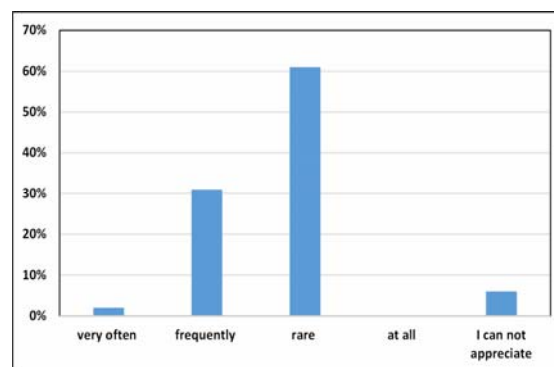


Figure 6. Frequency of formation opportunities

Another item referred to *the types of skills that should be developed by the respondents' participation in formation courses*. We could notice that the respondents are mostly interested in developing their specialised skills (75%), but also with improving their communication with students, using modern teaching techniques and approaches (61%), and using equipment and multimedia products in teaching, learning and assessment. Certain aspects, such as communication in foreign languages and learning specific methods of scientific research should be improved by professional formation courses. More than 65% of the respondents are genuinely interested in project management, whereas a much smaller percentage are interested in entrepreneurial competence.

When asked about *the criteria they take into account when they choose the formation programmes*, 19% indicated the topic of the



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course, a second criterion being the costs that the formation implies (17%). Other important criteria are the formation period and the period of ongoing (17%). The answers are reflected in figure 7.

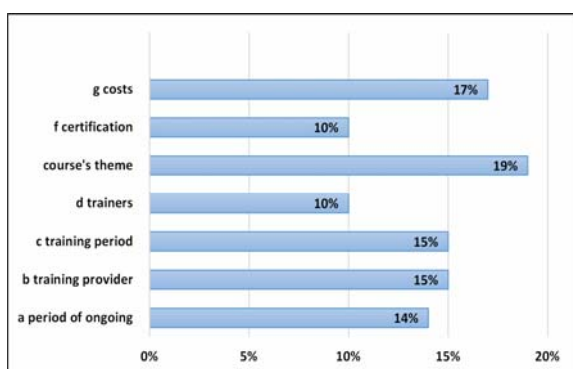


Figure7. Selection criteria for courses participation

When asked about the number of formation programmes they participated during the previous 5 years, 76% specified they had attended 1-2 programmes and 8 % had attended more than four programmes. An encouraging fact is that all respondents had attended at least one formation programme, owing to the fact that formation programmes have been organized with the support of European projects for the last 3 years.

For the question *To what extent does the professional formation/training offer at the level of the Romanian education system fulfill your needs for personal development?* the answers were ambiguous, as 39% answered “excellent”, whereas an equal percentage answered “fairly satisfactory”. 4% considered the present offer fulfills their formation needs only to a very small extent.

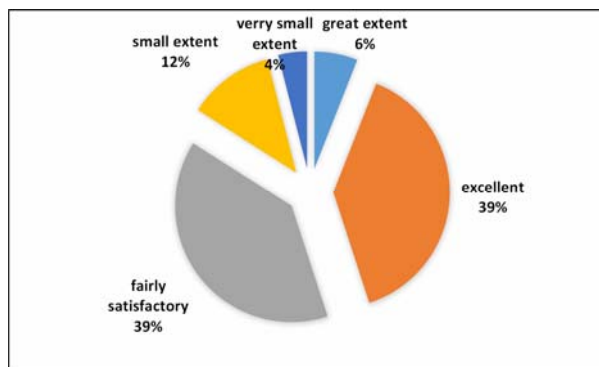


Figure 8. The extent to which the educational offer fulfills the formation needs

67% of the interviewed teaching staff appreciated the *necessity of a coherent system of continuous formation*, whereas a mere 2 % did not consider it necessary.

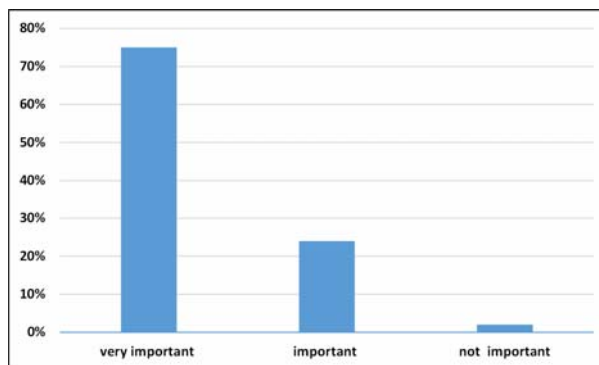


Figure 9. The necessity of a coherent continuous formation system for teaching staff in universities at national level

3. CONCLUSIONS

The following conclusions can be drawn, as a result of the present study:

- teaching staff in universities, irrespective of their scientific title, are aware of their needs for formation and professional development, both in their specialties and related to teaching;

- although their motivation is different and varies from professional development, experience exchange to the acquisition of specialised knowledge, most of them are intrinsically motivated, being aware of their formation needs and willing to evolve professionally;

- the information on the formation offer is rarely available; the main sources are colleagues, specialised websites or communication sessions, conferences, seminars;

- the formation ways are mostly represented by meeting specialists in the same field or related fields, workshops, the respondents being less interested in professional formation by individual study;

- their formation needs include both communicating with students, and using equipment and multimedia products in teaching, learning and assessment ;

- they are particularly interested in acquiring project management skills, foreign languages and research methods, but they did not manifest much interest for entrepreneurial skills;

- the courses are selected by topic, but also by cost and the ongoing period.

We can conclude that there is an explicit necessity for the teaching practitioners' formation at university level, which requires the existence of a formation system, similar to the one at secondary level, in order to enable their professional evolution.

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