



Professional Development of Physics Teachers through Postgraduate Programmes in Romania

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Abstract

The present paper focuses on a special case of adult education: two re-training programmes offered at the University of Craiova (Romania) in order to enhance the employability on the real labor market of the graduates of a Bachelor in Physics. The findings we are going to present are partially based on the results of a sociological investigation of almost 200 teachers participating in postgraduate programmes. The survey has been applied in the frame of the EU project "Education against marginalization".

1. Introduction

The need for national Lifelong Learning (LLL) policies seems to be undisputed and it was enhanced in the context of the consultation on the European Commission's Memorandum on LLL (November 2000). The majority of the European countries either adopted or is in the process of developing a LLL strategy. Such policies had already been adopted by 2003 in one third of the Bologna signatory countries, namely in Ireland, UK, Norway, Finland, Denmark, Iceland, the Netherlands, Belgium, France, Poland and Slovakia. The general objectives of the LLL system customarily mentioned are: promotion of social inclusion and of active citizenship, sustainable development of people, (inter)cultural awareness and assimilation.

Nevertheless, most of the policies and actions undertaken at the European and national levels do not target the higher education sector as such, and do not address the particular added value or conditions of LLL provision for Higher Education Institutions. At the institutional level, UK, Iceland, France, the Czech Republic, the Slovak Republic and Bulgaria hold the highest percentages of higher education institutions having implemented LLL strategies, whereas Germany, Austria, Italy, Hungary, Turkey, Romania and other SEE countries rank the lowest [1].

There are varying interpretations of adult education in different countries. In European policy discussions, it is defined as all forms of learning undertaken by adults after having left initial education and training, however far the process went. It includes learning for personal, civic and social purposes, as well as for employment-related purposes, and can take place in a variety of environments inside and outside formal education and training systems. The necessity of organizing an Adult education system at the European level was generated by the joint action of four factors of great impact: Increasing number of low-skilled workers; Increasing number of early school leavers; Demographic trends towards ageing population; Poverty and social exclusion.

The main role of the adult education consists in widening the access and participation of the adults in formal and non-formal education, on the following purposes: enhanced labour market access, further social integration, and better preparation for active ageing.

Despite these democratic principles, the European system of adult education started to work improperly - the statistics showed decreasing percentages of population aged between 25 and 64 years attended education and training programmes during 2004-2007, which ranked below those reported by USA and Japan [2].

2. Adult education in Romania: in-service training experiences

Romania is a country with a steady tradition of lifelong education, especially adult education, which has been developed in different socio-economic and political contexts. Even during the communist period, adult education, despite its ideological connotations, was promoted as a mass phenomenon. The largest form of adult education studies was represented by the re-training or in-service training of specialists with already a higher-education degree. A national system of in-service training was in place for teachers working in the pre-university system of education. Periodically, they had to participate in such activities, organized following a national curricula and under the authority of some selected Universities. The training consisted in courses both in the specific teaching disciplines of each teacher



and in educational sciences (teaching methodology, pedagogy, psychology). After an evaluation procedure, teachers received certificates or even new degrees in their professional career. This in-service training system for teachers is still active in Romania, the last laws of education maintaining and strengthening its role. Considerable efforts were directed to issues as recognition of formal education and introduction of a unitary regulating framework. In the last years a series of initiatives related to the adult education were introduced mainly by Ministry of Labour and Social Solidarity, Ministry of Culture and Cults, Ministry of Education and Research. Specialized institutes or departments dealing with the lifelong learning issues were created and a new competence-based labour code was adopted in the frame of the *National Qualification Framework* (NQF). The new Law of education adopted in 2011, as well as the *National Reform Programme* adopted by the Romanian Government for 2011-2013 [3] offer a whole part for adult education, and express as important objectives the increase the youth participation ratio to lifelong learning education, formation of key-competences and enhancing the level of training of teachers.

Unfortunately, there are still problems in transforming adult education in Romania in a valid partner of the initial training system: (i) the financial resources coming from public funds and devoted to adult education are very limited, except for unemployment; (ii) despite there are effective policies and management authorities of unemployed people re-skilling, the dedicated programmes are not cost-effective. There is not a strong correlation of these programmes with the demands on the labor market; (iii) the adult education still has a reduced contribution to the social inclusion of the vulnerable groups (senior people, low qualified people, disabled people, people in the rural area); (iv) the main providers of adult education are NGOs, using as financial support European funds. More often the teachers special trained to be adult educators work part-time in these organizations, the only full-time staff fulfilling management activities.

Speaking about the role of the adult education in the social inclusion of the vulnerable groups, we have to mention the results of a recent survey made in Romania and in other 7 countries, in the frame of the Grundtvig programme "EDAM **ED**ucation **A**gainst **M**arginalisation" [4]. Its aim was to measure to what extent adult education programme realized an increase of social inclusion and which elements in the learning and life environment of participants have the biggest impact. In Romania the target group of the survey was represented by teachers participating in in-service training programmes held at the University of Craiova. More than 60% among the respondents were women younger than 40 years, 72% of them married and more than 50% with 1-2 children. Four main dimensions of social inclusion were tackled: (1) activation, (2) internalisation, (3) participation, (4) connection. As result of the survey, 92% among the respondents appreciated that the postgraduate courses helped them to improve their social skills and, by that, to increase the inclusion in society. The most influential three factors contributing to this increase were identified as being: (1) improvement of the digital skills; (2) attempting in associations neighbourhood; (3) improvement of contact skills.

3. Postgraduate programmes for Physics teachers at University of Craiova

The University of Craiova is one of the biggest public institutions of higher education in Romania, with 2,000 staff members and almost 30,000 students. The employability of the graduates and their social inclusion on the labour market represent important objectives of the university. In this direction, special attention is paid to the development of Lifelong learning programmes offering to adult learner refresher and training courses in line with the national and European labour market profile. We have to mention that, in accordance with the Romanian legislation postgraduate courses aim to extend the qualifications acquired through initial training (Bachelor), and have a different status as the second cycle of the Bologna system (Master).

We exemplify with two such re-training programmes organized for the graduates of a Bachelor in Physics: *Optometry* and Sciences. Till now, the main professional outlet of the Physics graduates in Romania consisted in becoming Physics teachers. As nowadays it is difficult to find positions in this area and, in addition, being a physicist does not offer a clear status from the employers' perspective, there are real difficulties for the graduates to find jobs in their specialization. The previous mentioned postgraduate courses come just to meet this situation, covering the lack of specialized study programmes in the two fields, demanded on the job market. Concretely, there is a real demand of specialists in optometry. On the other side, the discipline "science" was introduced in the new curricula at high school level (the third and fourth years of humanistic profile) without any specialized teachers to teach it from an interdisciplinary perspective. Both courses last three semesters (180 ECTS), the minimum duration required by law for the new specialization can be practiced. The curricula of these



courses fit the competences offered by the Physics academic qualification with the labour market requests. From the pedagogical perspective, the main question we are facing is how the already existing *knowledge, skills and attitudes* of the adult learners can be transferred and validated (transfer possibilities). Due to the quite large variety of situations we met, the answer found is to adopt a *flexible attitude*, as a reliable tool allowing to bridge formal learning and informal learning. The adult learners should capitalize the competences acquired in daily life, but the trainer should carefully deal with the resistance that this previous experience might generate.

4. Conclusions

Adult education, lifelong learning, marketable competences or social inclusion represent topical issues in the current European knowledge-based society. It is generally accepted in the field of Human Resource Development that an efficient system of adult training provides “cognitive learning gains, improvement of job performance or positive impact on the organisation” [5]. The present paper supported this assertion, presenting the experience of the University of Craiova, Romania, in professional development of physics teachers through postgraduate programmes. Two courses, *Optometry* and *Sciences* were chosen as examples. The two courses fit perfectly with the strategic framework for European cooperation in education and training (“ET 2020”) aiming to improve the quality and efficiency of education and training. Moreover, we are dealing with two courses in the field of *science education*, one of the most important strategic priorities for European policy makers, the acquisition of skills in this domain becoming essential in a knowledge-based society.

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