Lifelong learning within engineering pedagogy

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Abstract

The main essence of this study is to introduce and analyse the lifelong education, and also its inclusion into engineering pedagogy issues. We refer to its interconnections with engineering pedagogy too. We would like to refer to the present state of lifelong education in engineering pedagogy, especially in Slovakia. Within the frame of study, we deeply focus on the area of complementary teacher training belonging to the most important aspects in the education of engineers – the future teachers of technicians in the vocational high schools. We will analyse its meaning, system, importance of position and mainly its importance in the area of engineering pedagogy.

Keywords: education, lifelong education, further education, engineering pedagogy, complementary teacher training;

1. Introduction

Hardly anyone can deny that there is a relation between the education level of population and the wealth of a state. That is why each country tries to provide the best education system possible. People need to be educated in different fields so they can meet demands of the labour market. The education can be provided in schools, universities or other educational institutions. However, the lifelong learning has also its place when concerning the educational as whole. As for the technicians – engineers, there are always new inventions, procedures and development of new technologies. Those specialists are forced to be up to date in the field they specialise in. That means to know the task theoretically as well as in practise. Those technicians who plan teaching technical subjects at secondary vocational schools also have to study pedagogy, psychology and didactics. IGIP (Internationale Gesellschaft für Ingenieurpädagogik = International Society for Engineering Education) is an institution established by Professor Adolf Melezinek in Austria in 1972. Since then, the engineering education has been spread to other EU countries. As for Slovakia, the Engineering Pedagogy was adopted at the Department of Engineering Education of the Faculty of Materials Science and Technology of Slovak University of Technology in 1996. From that period, there have been many approaches and possibilities how to study the field of Engineering Pedagogy. One of them is...
the realisation of Complementary Teacher Training (CTT) for those who want to complete their pedagogical education. However, this article compares CTT in the Czech Republic and Austria.

2. Complementary Teacher Training in the Czech Republic

As for Austria, the Complementary Teacher Training (CTT) is adopted in the Coll. of Laws, specifically in ‘Hochschulgesetz HG 2005 (BGBl. I Nr. 30/2006 vom 13.3. 2006)’ and in ‘Hochschul-Curriculaverordnung 2006 – HCV 2006 (BGBl. II Nr. 495/2006 vom 21.12 2006). The study is realised through the country, for example in ‘Pädagogische Hochschule Steiermark’ in Graz. The curriculum of the study also respects the demands of IGIP and the system of its realisation is based on the credit system. For the final exam, it is necessary to defend the final work as well as to attend all the lecturers during the study for 100 %. The evaluation criteria are divided into 5 marks:

1. ‘Sehr gut’ which means Excellent
2. ‘Gut’ which means Very Good
3. ‘Befriedigend’ which means Good
4. ‘Genügend’ which means Poor
5. ‘Nicht genügend’ which means Very Poor

However, there is also an option to choose the evaluation based on two forms, i.e. pass and fail. If a student fails, he/she has a right for the second examination (up to 3 times). After the final examination is passed, the student is given a certificate which allows him/her to teach technical subjects within countries of European Union.

3. Features of Complementary Teacher Training

The next part of our study was focused on the attributes of Complementary Teacher Training in the Czech Republic as well as in Austria. We were interested in the attributes such as: amount of subjects, amount of lessons and amount of semesters (Fig. 1).
According to our survey, there are no many differences in the Complementary Teacher Training realised in the Czech Republic and that realised in Austria. Even the content of the subjects and the curriculum are approximately the same. That is why there is also the same graduate’s profile in both institutions.

4. Conclusions

Based on the survey in both institutions we came to the conclusions that the graduate of Complementary Teacher Training should:

- have professional methodical and vocational competencies
- know how to use the knowledge of humanities in technical subjects
- know how to plan, realise and verify educational processes
- know how to support team work and cooperation
- know how to evaluate objectively a pupil’s performance
- know how to improve the quality of a school
- have the self-evaluation reflection

To sum up, it is confirmed that the IGIP organisation fulfils its aims. Thanks to the organisation, the institutions in many countries can prepare their future graduates and specialists also in the field of Engineering Education. Those teachers – engineers are able to work within those countries where the Engineering Education is adopted.

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References


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