Conceptual modernization and methodological support of courses in higher education pedagogy at Slovak University of Agriculture

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Abstract
The paper is aimed at the field of higher education pedagogy. There is description of the actual state of university pedagogical staff preparation and training and also describes the requirements for the profession of teacher in higher education. It deals with the latest educational needs of the staff and describes the transformation of the pedagogical and psychological preparation of the university teachers in Slovakia, particularly at Slovak University of Agriculture in Nitra. Some results of the survey among university teachers aimed at their educational needs and satisfaction with the courses in higher education pedagogy are available in the paper. The results originated as the outcome of the research project KEGA no. 026SPU-4/2013 “Conceptual content modernization and technical support of Higher Education Pedagogy Course for teachers at technical universities”.

Key words: higher education pedagogy, university teachers, conceptual change, improvement of higher education quality, didactics of higher education, educational and psychological preparation

JEL Classification: I20, I21, I23

1. Introduction
Nowadays there are very few educational researches conducted in the field of higher education in Slovakia and also the theoretical discipline - Pedagogy of higher education has inadequate response in the academic field of Slovak higher education institutions. It is generally believed that universities are the top-level institutions in the educational systems. On the other side there exists constant criticism concerning the unequal quality of education and the overall quality of teaching process at these institutions. The requirements to improve the quality of university teaching are usually formulated as a challenge (such as the Bologna Declaration, 1999) or the recommendation of education policy documents (Adopted 1997, White Paper 2001). It is also included into the evaluation reports of accreditation commissions or other evaluation and expert institutions. Even the universities refer to the field of teaching process improvement in their development programs. But less are the particular changes and innovations enforced into educational practice. It is difficult to recommend general pedagogical principles, strategies and methods in a variety of learning situations that have a different character at higher levels than at lower levels of education. Therefore there is an urgent need to permanently develop pedagogy of higher education. On the other hand, there are various barriers and adverse circumstances of economic origin or barriers connected with human resources. According to the above mentioned, it can be summarized that there are many factors that determine the concept of university education, and this requires a deeper examination. The aim of this paper is to describe the transformation of the pedagogical and psychological preparation of the university teachers in Slovakia and to provide a brief description of the project solved at the Slovak university of Agriculture. Project KEGA 026SPU-4/2013 „Konceptuálna modernizácia obsahu a metodická podpora Kurzu vysokoškolská pedagogika pre učiteľov technických univerzit“(Conceptual content
modernization and technical support of Higher Education Pedagogy Course for teachers at technical universities) was aimed at conceptual analysis and curriculum innovation in the field of pedagogy of higher education. The project KEGA that was solved at Department of Pedagogy and Psychology (in the present Center of Education and Psychological Counselling FEM SUA) oriented to design the new content of higher education course for university teachers and to innovate it in line with the latest requirements of the current scientific knowledge and needs of the social practice. It is important to watch both professional growth and the educational and psychological training of teaching staff as part of obtaining the scientific degrees and scientific-pedagogical titles.

1.1 Development of the pedagogical and psychological preparation of the university teachers in Slovakia

In the 70s and 80s of the 20th century in the context of criticism of universities has been proved the necessity to equip higher education teachers with skills for the improvement of teaching in differentiated educational settings, i.e. in different types of studies, with diverse students in diversified institutions with different educational goals and outputs. So there was a need for teacher education, which was designed and implemented by specialized university institutes, providing courses, seminars or textbooks, which core was in higher education pedagogy. Higher Education pedagogy as a scientific discipline was developed also at some faculties in the Czech Republic and Slovakia. In the 80s of 20th century were in Prague and Bratislava constituted institutes – Institute of Higher Education Development - dealing with the problems of higher education, including teacher education. Both institutions were liquidated due to the change of higher education laws in the 90s. (Zaťková, 2014)

Worth remembering is the content and organizational model of teacher education, which was in the 80s designed and practically implemented as a so-called "System of increasing educational qualifications of university teachers" in the former Czechoslovakia. This system was created following the model of Western countries and in its time was a progressive act. Further education system was codified according to edict no. 39/1980 that was modified in 1983 as obligatory for all university teachers. System included two levels of teacher education:

- basic study of higher education pedagogy, that was obligatory for young teachers up to 5 years of experience in higher education institutions,

- specialized study of higher education pedagogy, which was obligatory for all teachers up to 10 years of experience in higher education institutions. (In Tollingerová, 1983)

The first level of teacher education included general issues relating to higher education pedagogy concerning education at the university, student's personality, academic profession, teaching forms, methodological innovations etc., always taking into account the psychological aspects.

Second level of teacher education was focused on the issue of teaching specific courses based on the constitution of university didactics. System of increasing educational qualifications was organized only at the platform of experimental verification. Organization of the courses included teaching blocks and self-study, as well as lesson observations.

Basic studies were completed by a board examination, which consisted of pedagogy, psychology and didactics. Specialized study was organized similarly and also followed by examination from the relevant special didactics. For the purpose of self-study were created sets of learning texts in the eighties of 20th century (by authors: J. Kotásek, P. Byčkovský, J.Mareš, J.Špůr, D. Tollingerová, M.Řehořková etc.). At the same time in Slovakian part of
Czechoslovakia emerged edition of textbooks series on topics in higher education pedagogy, didactics and psychology. Authors who contributed were for example: J.Štefanovič, J.Grác, R.Štepanovič, V. Prusáková, M. Černotová, etc. (In Zaťková, 2014)

The system of university teachers training come to the end in 1989 with the socio-political changes in the country. After that year the higher education pedagogy stagnated in its development.

Vašutová (2010), Czech expert in higher education, notes that when we evaluate the “system of increasing the educational qualifications of university teachers”with today’s broader view, we probably would not avoid the criticism. The main problem was that completion of higher education pedagogy was mandatory, regardless of individual needs and pervasive ideology that penetrated the study materials. On the other hand, positive results have been proven in influencing educational work of university teachers - beginners.

In the 90s the educational courses and seminars in pedagogy at universities occurred only occasionally as an interest and they were optional. Over the time there began again to be rediscovered the need for teacher training of novice university teachers. Today, universities themselves organize pedagogical education for their staff as a teaching minimum, according to their needs. Some universities provide it as an obligation, some as optional course. Some of the higher pedagogy courses are conditioned by internal regulations of the university or as criteria for habilitation process; some of them are accredited by IGIP (http://www.igip.org) or as a part of one-shot projects. Not always, however, the content and didactic design is related to university specificity. In the last decade, we can see a positive trend in an effort to increase the quality of the educational process at some of the Slovak universities. Especially universities of technical orientation are beginning to organize teacher training courses for their staff (eg. SUA, Slovak University of Technology in Bratislava, Technical University in Košice, University of Economics in Bratislava).

1.1.1 Development of higher education pedagogy at Slovak University of Agriculture

Development of higher education pedagogy at Slovak University of Agriculture in Nitra (SUA) does not lag behind the trend. Tradition in pedagogical preparation of the university staff continuously maintained at the SUA to the present day with some modifications. In 1964 was established Department of Education at former College of Agriculture in Nitra (later SUA). In that year was the department mandated by the school administration to enable pedagogical staff of the university to acquire the necessary knowledge in the field of Educational Sciences and Psychology. In the eighties of 20th century the System of increasing educational qualifications of university teachers was also applied at College of Agriculture. Since the establishment of the department until the year 1989 eight courses with about 300 graduates of Higher Education Pedagogy were organized. (Zaťková, 2014)

After the year 1989, when the System of increasing educational qualifications of university teachers in Slovakia was abolished, SUA in Nitra became the only higher education institution in Slovakia, which continuously pays attention to the pedagogical training of its´ staff. University administrators hereby declare interest in improving teaching, bearing in mind the axiom that teacher in tertiary education must, in addition to professional expertise, have a quality pedagogical and psychological preparation. This requirement was part of the minimum standards for the habilitation procedure and procedure for the appointment of professors at SUA valid from 18.12.2008 up to 2015: - “criterion of educational activities - point f) Teacher education (basics of pedagogy)” - and this applies equally to internal staff of
SU A and staff from other universities, who apply for obtaining the scientific degree at SUA. “(Slovak University of Agriculture, 2008).

Today are courses only optional. Pedagogical training is a tradition at SUA and organization and its content is being constantly innovated since the times they were established. Two cycles of one-semester courses run in the academic years 1964-65 and 1966-67. Some of the lectures from Theory of education, Psychology, Methodology were provided by lecturers from the Department of Higher Education Teaching from Comenius University in Bratislava. Courses were later transformed into three semester study. Such a course in the academic year 1971-72, and the next course in the year 1973-74 were completed by a total of 53 teachers and the courses were fully provided by the Department of Education and Sociology (today Centre of education and psychological counselling). (Hraška, 1976)

There is a reference to the content of the study in 1985. (Majerčák & Ondruška, 1985) Following disciplines were lectured: Theory of Communist Higher Education (8 lessons); Psychological Aspects of the Educational Process in Higher Education (12 lessons); Sociological Aspects of Education and Teaching at University (8 lessons); Higher Education Didactics (12 lessons), Methodological Factors of Teaching at University (12 lessons), Basics of the Theory and Practice of Teaching Vocational Subjects in Higher Education (12 lessons), Modern Educational Tools (6 lessons), Methodology of Educational Research (4 lessons); Basics of Aesthetics and Language Culture (4 lessons). All disciplines were supported by textbooks. Participants also completed six mandatory lesson observations and they gave a final lecture that was assessed by the committe. The study ended with defense of the final thesis and it was connected with pedagogical and psychological questions on the final work. (Majerčák & Ondruška, 1985) In 1989 in a speech of that time Dean we can find a reference to the implementation of university pedagogy as follows: In addition to supplementary teacher training course, department also organizes in collaboration with the Comenius University in Bratislava specialized study of university pedagogy for teachers from College of Agriculture. This study is carried out annually in the form of selected lectures on current topics in psychology, pedagogy, sociology and didactics of vocational subjects at the College of Agriculture in Nitra. (Hrmo, 1989)

After 1990 fundamental changes entered the educational system in Slovakia. Pedagogical education of university teachers was no more required by law. This led to attenuation of the development of higher education pedagogy in Slovakia. But following the tradition of university teachers’ education also at the beginning of the new millennium courses continued at Slovak University of Agriculture, but with the slightly modified content (Theory of education and didactics, Psychology, Organization and management of higher education, Rhetoric, Sociology- 60 lessons divided into three week training sessions).

Time devoted to the lectured disciplines was the accompanying feature of the course innovation. Number of lessons varied in different years from 60 to 80. Course in the years 2009/2010 consisted of the following disciplines: Higher Education (16 lessons); Rhetoric (lessons); Biological bases of learning (4 lessons); Creation of understandable text (8 lessons); Selected topics in sociology (4 lessons); Modern Educational Technology (8 lessons); Selected Topics in Psychology (12 lessons); School legislation and school management (12 lessons); Final thesis; Educational performance; Final colloquy.

Time devoted to the next year teacher training course for the period 2011 - 2013 remained unchanged. Course was organized in three sessions of three-day workshops (each session in 24 lessons). Face to face training and selfstudy were allocated into three semesters. Little changes were done in the content (the following disciplines were lectured: Basics of
Education and Adult Education (16 lessons); Selected Topics in Sociology of Education (8 lessons); Modern Educational Technology (8 lessons); Selected Topics in Psychology (16 lessons); Educational Communication (8 lessons); Higher education didactics (16 lessons); Final thesis; Educational performance; Final Colloquy).

The newest trend in teacher education at SUA today is "Engineering Education" according to the standards prescribed by IGIP association (Gesellschaft für Internationale Ingenieurspädagogik Klagenfurt/International Society for Engineering Pedagogy). Courses of higher education pedagogy at SUA are based on the curriculum of IGIP (http://www.igip.org/pages/membership/files/crit_accred.pdf). Competency profile of a teacher in higher education of future technically oriented professionals, according to International Society for Engineering Education (IGIP) is based on two pillars: quality vocational education and practical experience and skills acquired in the framework of special training in the field of education. University teacher should dispose with pedagogical, social, psychological and ethical skills, didactic, evaluation, organizational and management skills, with the ability of self-reflection and further personal development as well as the ability of appropriate pedagogical communication in practice. SUA has been accredited in 2015 as Training Center for Engineering Educators. IGIP accredits training centers for "International Engineering Educators" which conforms to IGIP's curriculum for engineering pedagogy. These centers have to be reaccredited every five years. Structure of the currently accredited course for university teachers is listed below in the table.

Table 1: List of all modules of the engineering pedagogical education.

<table>
<thead>
<tr>
<th>Description of the modules</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core and basic modules</strong></td>
<td></td>
</tr>
<tr>
<td>PM1 Theoretical and Practical Engineering Pedagogy</td>
<td>6</td>
</tr>
<tr>
<td>PM2 Didactics</td>
<td>2</td>
</tr>
<tr>
<td><strong>Theoretical modules</strong></td>
<td></td>
</tr>
<tr>
<td>PM3 Selected chapters from Psychology and Selected chapters from Sociology</td>
<td>3</td>
</tr>
<tr>
<td>WPM Ethics and intercultural competencies</td>
<td>1</td>
</tr>
<tr>
<td><strong>Practical modules</strong></td>
<td></td>
</tr>
<tr>
<td>PM4 Scientific Writing and Pedagogical Communication</td>
<td>3</td>
</tr>
<tr>
<td>PM5 Working with Projects</td>
<td>1</td>
</tr>
<tr>
<td>PM6 Educational Technology</td>
<td>2</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td></td>
</tr>
<tr>
<td>FCP Teaching practice</td>
<td>4</td>
</tr>
<tr>
<td>Thesis</td>
<td></td>
</tr>
<tr>
<td><strong>In Total</strong></td>
<td>22</td>
</tr>
</tbody>
</table>

(Source: Application Form for Engineering Pedagogy Training Courses SUA, 2015)

2. Data and methods

The actual curriculum of the course and its accreditation is one of the results of the research project KEGA no. 026SPU-4/2013 “Conceptual content modernization and technical support of Higher Education Pedagogy Course for teachers at technical universities” that was financed
by the national grant agency during the years 2013-2015. The project aimed to expand knowledge in the field of applied educational discipline Higher education pedagogy and to modernize and rebuild the curriculum of courses in higher education and to harmonize it with the current requirements and practical needs. Partial aims were:

- To propose appropriate ways and forms of implementation of higher education pedagogy into the process of teacher training;

- Monitoring the impact of courses in higher education at the level of ongoing evaluation and analytical studies, including a survey among the teachers;

- Analysis of educational needs and motivation of university teachers in further education.

Aims were fulfilled on the basis of information retrieval and document analysis, comparative studies and empirical research using questionnaire surveys. Qualitative methodology was used.

3. Results and discussion

Among the selected results we can briefly conclude that during the period of the project realization a new study plan was created and verified by the former Department of Pedagogy and Psychology (since the 1st of June Centre of Aducation and Psychological Counselling) and the group of 20 teachers from the six faculties of SUA graduated from the Higher education course. Verification of the course in 2015 led to the application for the accreditation of courses within the international organization IGIP and the course was successfully accredited in October 2015.

Within the project was published one textbook - *Selected chapters from the higher education pedagogy* (Vybrané kapitoly z vysokoškolskej pedagogiky, 2015), which is intended as study text for the courses. Textbook has a practical contribution to the further education of teachers. Two books of scientific works were published that expand the resources in the field of higher education. In addition to these publications 60 other texts and articles were published in conference proceedings and journals and two conferences were organized in the years 2013 and 2014 by Department of Pedagogy and Psychology (*"Teória a prax vysokoškolského vzdelávania"*- international electronic conference, „*Pedagogika a sociológia vo vysokoškolskom vzdelávaní“*- international scientific conference). Component part of the project was also survey on the motivation of university teachers to their further education and educational needs in their teaching profession. Views of the participants on the organization and curriculum of the Higher education pedagogy course were also examined and the results will be further used for the teacher training improvement at the Slovak agricultural University.

Questionnaire was administrated to all 20 graduates via e-mail, but only 12 questionnaires were filled in. Survey was done among participants of the course with teaching experience from 3 up to 15 years of pedagogical practice and one participant with teaching experience more than 16 years. Half of them had no previous teacher education and the second half of them graduated from Pedagogical Supplementary Studies for Secondary Vocational Education.

The most important motivator of course attendance was the prospect of professional growth and the requirement of the head of department. The absolute majority of respondents expressed interest in the course, because the scientific-pedagogical growth of university
teachers has for a long time been conditioned by the requirements of the university management as one of the criteria for habilitation and inauguration process (until 2015).

Participants indicated that as a part of their further education they would voluntarily chose mainly foreign languages, than followed psychology, ICT courses and pedagogy.

Survey showed that teachers feel the greatest individual asset of the course in the development of their knowledge in the field of pedagogy, psychology, educational communication and rhetoric. In the field of higher education pedagogy participants would prefer more lessons from didactics and courses aimed at application of new pedagogical and psychological knowledge into teaching practice.

Assessment of the importance of courses in higher education according to the opinions of respondents is shown in the graph 1.

**Graph 1: Importance of the course according to respondents**

![Graph showing the importance of the course according to respondents]

Source: Own computations of the author

Evaluation of available study resources found out that graduates of the course have enough opportunities to access adequate study sources only three respondents state that they have partial access to adequate resources. As obstacles to their pedagogical development majority cited lack of time, two respondents have no obstacles, three teachers stated lack of finance and one teacher stated that their head of department did not allow them connection with the practice in the form of activities outside the department.

Among the forms of organization, half of teachers cited that they would prefer e-learning forms and among the rest of answers were cited following: specialized courses, discussions on current topics, workshops to exchange experiences, group discussions and non-formal seminars organized with the participation of experts, interactive workshop and forum.

Course participants feel their own weaknesses particularly in the following areas - mainly in the area of application of a variety of teaching methods (60% of respondents) and then follow the creation of didactic tests, creation of study texts and teaching materials, working with ICT.

According to the majority of teachers, course at SUA has met their expectations. In one case was the answer no and one teacher stated that only partially were met their expectations.

Teachers assessed how passing the course led to development of certain selected areas of their profession and competencies. They had to select one option from the scale 1-5 (1 – absolutely no/5 - definitely yes). The results are shown in the tables 2 and 3 below.

**Table 2: Opinions on contribution of the course in development of the selected areas**

<table>
<thead>
<tr>
<th>Selected areas of professional development</th>
<th>Average answer (from 1 to 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I learned how to teach</td>
<td>3.25</td>
</tr>
</tbody>
</table>
I gained knowledge about new trends in pedagogy 3.91
I gained knowledge from other disciplines than engineering 4.08
I increased my professional competence 4.08
I met new people 4.33
I learned to deal with problematic situations in teaching 3.33
I increased my chance of getting / keeping a job 3.08
I gained points for habilitation process 2.83

Source: Own computations

Table 3: Opinions on development of teacher competencies after passing the course

<table>
<thead>
<tr>
<th>Competence</th>
<th>Average answer (from 1 to 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedagogical, social, psychological competence</td>
<td>3.91</td>
</tr>
<tr>
<td>Didactic competence</td>
<td>3.66</td>
</tr>
<tr>
<td>Evaluative competence</td>
<td>3.58</td>
</tr>
<tr>
<td>Organisational (management) competence</td>
<td>3.33</td>
</tr>
<tr>
<td>Self-reflective and developmental competence</td>
<td>3.83</td>
</tr>
<tr>
<td>Communicative and interpersonal competencies</td>
<td>3.83</td>
</tr>
</tbody>
</table>

Source: Own computations

Based on these findings, we conclude that courses have the ambition to really fulfill their purpose and motivate university teachers to lifelong learning, to develop cooperation and learning environment, which ensures the satisfaction of students and teachers. It helps to increase the success of university education and develop professional competencies of university teachers. University teachers evaluated different areas of the course in the upper part of the scale. Some of the fields were just slightly above the average evaluation and to these aspects should be paid more attention in the future courses. Despite the average answers, no comments for courses improvement were suggested by the graduates. Only three of them state that course is necessary for all teachers in the tertiary education and the course structure is appropriate.

Conclusion

The lifelong learning programs for teachers in higher education need to monitor both professional growth and especially the pedagogical-psychological readiness of the staff as the part of obtaining their academic degrees and academic titles.
Improvement of teaching is based on respect of the learning needs of students and building on teachers’ own experience, but also on experience of other colleagues. Impact on enhancing the quality of tertiary education has also the acquirement of theoretical knowledge in higher education pedagogy and their reflection in the educational practice. Continuous improvement of teaching and learning process requires from teachers to constantly rethink, analyze and evaluate their own work with the students and to try improving it, to innovate. Therefore, regular self-education, development of teaching competencies, improvement of methods of teachers’ work and improvement of teaching methodologies are very necessary for the work of university teacher.
In connection to the previous text, there is a great need for developing a comprehensive system of educational and psychological training for university teachers. This requirement periodically appears from the 70s of the 20th century in different forms. In our paper we pointed out the importance of professionalism and the quality of teachers in higher education. In a small historical excursion, we reminded our tradition in university teacher education. Currently, there is no official requirement for teacher in tertiary education to complete basics of pedagogy and psychology, or to complete a course for beginning university teachers, as it was in the past. University teachers have many options for free democratic conceiving of such education. On the other hand, the teacher is responsible for the results of their teaching activities as well as for development of their professional and educational qualifications. This aspect of the work of university teachers is not always sufficiently appreciated and often, when assessing the qualifications of teachers there are taken into account the results of their professional activity and less regard is for the results of their educational activities.

Practical and most important outcome of our project was to develop an innovative model of courses in higher education pedagogy with regard to developing the educational and psychological competencies of university teachers, which was actually verified in practice. Teachers, who passed the course often emphasize that teacher training should be highly targeted and based on the findings of the particular educational needs of the participants. In connection with the above mentioned our goal to the future is to constantly continue in providing pedagogical-psychological education for them and to innovate the content and organization of the courses with regard to their opinions.

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