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ПРАВИЛА ОФОРМЛЕННЯ І ПОДАННЯ РУКОПИСІВ99



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STANDARDS OF FOREIGN LANGUAGE TEACHERS' PROFESSIONAL TRAINING: PROSPECTS AND FOREIGN EXPERIENCE

ABSTRACT

The article deals with an urgent issue of necessity to enhance professional training of future foreign language teachers. It has been substantiated that the only way to assess its quality is to use a set of professional standards. Theoretical substantiation of the standards elaborated by TESOL, as well as their step-by-step process of elaboration, have been studied. These standards served as a model for developing standards of foreign language teachers' professional training in other countries. On their basis the standards of foreign language teachers' professional training, as well as indicators of teachers' performance for each of them, have been formulated as a role model for other countries which pay special attention to foreign language teachers' training. The main difficulties of the standards implementation have been defined, as well as their possible solutions. One of the most urgent issues raised in the article is the necessity to elaborate a detailed system for assessing teachers' correspondence to the standards and to adjust the existing training programs to them. Conclusions about productivity and efficiency of the conducted research can only be made after the standards approbation throughout the complete foreign language teachers' training program that is 4–6 years (depending on the degree – Bachelor or Master). Still, at this stage of our research it is quite clear that one of the possible solutions to the problem of the necessity to elaborate a detailed system for assessing teachers' correspondence to the standards and to adjust the existing training programs to them is involvement of stakeholders of different levels to elaboration of the standards (from future teachers to educational authorities). The practical value of the presented material is that it can be used by other countries for elaborating their own national standards.

Keywords: higher education, English education, comparative education, educational evaluation/assessment, foreign language teachers, professional standards, professional training.

INTRODUCTION

Globalization and internationalization of society, as well as an increasing demand for specialists fluent in foreign languages, put forward greater demands on professional training of foreign language teachers. This situation is especially urgent in developing countries, as the proper level of foreign language knowledge provides new opportunities for education and employment. Thus, appropriate training of teachers who are to provide



qualitative process of foreign language teaching in schools is one of the top priorities. These teachers are expected to undergo constant professional development, correspond to modern demands (e.g., the ongoing technical progress that enriches the language with new notions) and have the ability to use technologies to enhance learning. Teachers must be flexible, take into consideration multi-cultural and multi-language approaches, diversity of the society, in which foreign language communication takes place.

Foreign language teachers must develop professionally and be competent. To correspond to these demands there must be compiled a list of their competencies which will serve as indicators of their competence in general. Evaluation of competencies is impossible without clearly defined and approved standards. They must determine theoretical and practical knowledge, necessary for teachers of foreign languages, their educational and social duties (e.g., to introduce the culture of the target language to students, to teach them to respect it). At the same time, governing bodies of schools must provide qualitative training programs, presupposing theoretical and practical knowledge of future teachers, formation of their cultural values, as well as special and general competence.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

In Ukraine, particular attention is paid to foreign language teachers' training with consideration of all the above mentioned aspects. A lot of home scientists dedicate their works to issues of future foreign language teachers' professional training and competence formation. V. Barkasi (2004) and I. Bihych (2004) study competence of foreign language teachers, O. Kotenko (2011) pays attention to formation of professional qualities of foreign language teachers, S. Nikolayeva (2010) has worked out the concept of foreign language teachers' training, and others. But still no standards have been developed in Ukraine yet. Some work has been carried out by the British Council in Ukraine within the project "Common European Framework of Reference for Languages: Learning, Teaching, Assessment" (2001). Thus, there is a great demand for elaboration of standards of foreign language teachers' professional training. Therefore, there arises a necessity to follow some foreign experience of developing such standards. We have studied and analyzed a great deal of works dedicated to professional training and performance of teachers, especially concerning: opportunities for teachers' professional development (K. Burke (2011), T. Farrell (2014)), professional education of teachers (L. Darling-Hammond (2017), D. Flink (2003)), teacher professionalism (A. Hargreaves (2003)), professional teaching standards (Kuhlman (2013)), competence and performance in language teaching (J. Richards (2017)), and others. International organizations, such as Council of Europe, International Board of Standards for Training, Performance and Instruction – IBSTPI, National Council for Accreditation of Teacher Education, TESOL International Association, have been conducting research in this field and have an extensive experience in developing the standards of future teachers' training.

Having studied the publications and research papers of the above mentioned scientists, documents and materials of international organizations we have carried out our own research concerning prospects of elaborating the standards of foreign language teachers' professional training in Ukraine. For this we have used a range of general scientific methods (including study and analysis of reference, scientific educational print and on-line sources), as well as comparative method, systematization and generalization. To validate and implement the results of our theoretical developments we have used a questionnaire method, method of statistical analysis and processing of the workgroup's findings and conclusions.



RESULTS

In the result of theoretical and comparative analysis of the material concerning standards of foreign language teachers' professional training, worked out by previously mentioned organizations and professional associations, it has been defined that professional standards of foreign language teaching by TESOL (Teaching English to Speakers of Other Languages Association) – TESOL P-12 Professional Teaching Standards – are the most appropriate for elaboration of the respective standards in Ukraine.

Such a decision has been made due to the fact that the Association not just formulated the standards but worked out the key points for elaborating corresponding standards by other countries. They stipulate the possibility of their usage in different contexts with consideration of the educational policy of a target country. Key points of TESOL standards presuppose all the necessary parameters for working out (adaptation) of the standards that correspond to demands of the global society, take into account national and regional educational policy, stipulate active participation of Ministry of Education, professional and non-governmental organizations. They contain theoretical basis and organizational formats for the standards, indicators of future foreign language teachers' performance, step-by-step process of the standards' working out, methods of their evaluation/assessment, describe the experience of the standards' implementation in developing countries (National Council for Accreditation of Teacher Education, 2010).

Before starting the process of the standards elaboration in Ukraine, we have studied and analyzed theoretical and organizational bases for the fulfillment of this process. It has been determined that to elaborate the standards the following conditions are necessary:

1. Theoretical and conceptual basis (theoretical framework, the aim and tasks of the standards). The concept of foreign languages teachers' professional training standards must encompass teacher's professionalism, which is ensured by four main factors: a) language knowledge; b) culture and its influence onto learners; c) learning process that is planned, implemented and assessed on the basis of foreign language teaching standards and presupposes effective use of resources and technologies; d) assessment of future teachers' language knowledge (TESOL International Association, 2010; TESOL International Association, 2013; TESOL International Association, 2017).

2. Appropriately substantiated organizational formats for the standards. In general, TESOL outlines two approaches to standards elaboration: field and principle-based (the former is more widely spread). The difference between them can be explained as the difference between specific and abstract. At the same time, principle-based approach is more conceptual, while field approach is more performance-oriented (Liyanage et al., 2015)

Principles are a theoretical background for the standards. Scientists A. Mahboob and N. Tilakaratna (2012) define the following principles for standards elaboration: collegiality; appropriateness; scientific substantiation; correspondence to educational programs, curricula and educational policy; transparency; efficiency (Mahboob & Tilakaratna, 2012).

Field standards must comprise teaching performance indicators which testify to the efficiency of teachers' training process. On the basis of TESOL research (2010), there have been defined five main knowledge fields that must be included into foreign language teachers' training: language (main field), culture (main field), learning (applied field), assessment (applied field), professionalism (combination of all fields) (TESOL International Association, 2010; TESOL International Association, 2017).

The Council for the Accreditation of Educator Preparation (CAEP) has outlined four knowledge fields for which standards must be worked out: knowledge of an academic



discipline, pedagogical knowledge, educational environment knowledge and professional knowledge (National Council for Accreditation of Teacher Education, 2010). European Council has worked out Common European Framework of Reference for Languages: Learning, Teaching, Assessment, in which field standards stipulate the structure of teacher training program, their knowledge and abilities, strategies and skills, and values (Council of Europe, 2001).

National Foreign Language Teaching Association of the USA in cooperation with TESOL has defined the most widely spread knowledge fields for foreign language teachers which must have been compassed by their professional performance: language knowledge; values and attitudes; planning, implementation and assessment of learning; critical thinking; research; culture knowledge; evaluation of teaching and learning; extracurricular activities.

3. Standards: every standard (either a specific or a general one) has to outline an aspect of teachers' knowledge or abilities according to every principle or criterion. Standards, to some extent, can serve as evaluation criteria (TESOL International Association, 2013) or a set of aims that must be reached by future foreign language teachers. Standards are an indicator of consistence and stability of fulfilling everything that is expected of teachers. Tests and other types of assessment are worked out to check teachers' correspondence to the standards (Darling-Hammond, 2017).

In general, three types of standards peculiar to foreign language teachers' training can be singled out: subject-based, pedagogical and performance-based. Subject-based standards assess teachers' subject knowledge. They are of two types: declarative (teachers' knowledge of concepts and facts) and procedural (teaching knowledge) (TESOL International Association, 2010; TESOL International Association, 2017).

Pedagogical standards are concentrated on teaching and learning process (curricula and training programs), effective teaching strategies (planning, teaching itself, analysis, assessment), diversity of students and educational approaches, influence of culture on learning and teaching, teachers' knowledge concerning psychological peculiarities of learning, teachers' knowledge of standardized learning and assessment.

Performance-based standards demonstrate the level of professional teaching correspondence to the standards, criteria and indicators of this correspondence; characterize the level of teachers' work; assess learning activities (Seufert et al., 2005).

4. Indicators of teachers' performance. For each standard there must be worked out indicators of teachers' professional performance which serve as criteria of their correspondence to the standards. For instance, a standard of learning planning may have performance indicators for four language skills (listening, speaking, reading, writing). At the same time, every standard must contain a scale for assessment of performance according to definite levels (e.g., in TESOLP-12 Professional Teaching Standards these levels are called as "approaches the standard", "corresponds to the standard", "exceeds the standard") (Fenner & Kuhlman, 2012).

5. Application of the standards. It is necessary to define differences between a standardized training program and a non-standardized one. The latter may have some or no general aim or theoretical basis, academic disciplines may have no connection at all, be taught by different chairs or faculties. A standardized program has a definite aim, conceptual basis, general plan and logically connects all the disciplines. Meanwhile, constant relation of teachers within this program is not just desirable but obligatory. Disciplines are interrelated. For instance, an introductory course of linguistics provides a basis for structuring lessons in lexicology, etc. At the same time, teachers are free to use the content and methods of teaching. Some can use a method of work in small groups, whereas others may prefer



practical work. Thus, they use their own individual teaching method aimed at fulfilling one goal – correspondence to the standards within a commonly accepted theoretical framework. More clearly the difference between standardized and non-standardized foreign language teachers’ training programs can be presented in Table 1, which was made partially on the basis of the research conducted by N. Kuhlman (Kuhlman, 2010).

Table 1

Difference between standardized and non-standardized foreign language teachers’ training programs

Characteristics of standardized programs	Characteristics of non-standardized programs (based on separate disciplines)
General plan, macro level, “holistic approach”. Standards are developed with consideration of different academic disciplines which can be interconnected. Flexibility in reaching aims, thorough planning. Integrative assessment, different assessment methods	Microlevel, inability to notice connections or their absence. Autonomy of every academic discipline. Higher level of autonomy in formulating aims and program elaboration. Assessment within a separate academic discipline

6. Evaluation of future foreign language teachers’ work and its correspondence to the standards (e.g., with the help of a portfolio) to check the extent to which teachers correspond to worked out criteria and to find out if they have learned something new. For evaluation it is not enough to use tests because they reflect knowledge in a definite period of time, that is, they are a kind of summarizing or general assessment. And as tests mainly presuppose multiple choice, a student has only one task – to guess, recognize or recall the right answer, which does not provide opportunity to assess their actual knowledge and skills. Thus, on the basis of tests, teachers cannot make a conclusion whether students can use their knowledge in practice. Besides, tests are very subjective, as they reflect only the material, which, to a test compiler’s mind, is important. Because of this, it is much more reasonable to evaluate teachers’ performance by key tasks, such as lesson planning or a portfolio, which provide a wide range of assessment opportunities. Parts of a portfolio can include a video of a teacher’s lesson, their educational projects, results of some international language knowledge exam (TESOL International Association, 2013). Portfolio provides an opportunity to assess competence level and correspondence of future teachers’ performance to the standards. But, at the same time, portfolio must be coordinated with the standards used for teachers’ training program. Besides, there must be elaborated a system of portfolio evaluation according to some criteria, which provide the consistence of its quality assessment. To determine the level of a future foreign language teacher’s readiness to licensed work there must be used thoroughly prepared descriptions of what “corresponds to the standard”, “approaches the standard” and “exceeds the standard” mean (Fenner & Kuhlman, 2012). These criteria can be used even when portfolio is not a part of teachers’ evaluation process, e.g., to define whether every indicator of the individual performance mentioned in the standards is met (Burke, 2011).

It is important to mention that criteria can be holistic, analytical and single. Holistic criteria estimate general performance with one mark. Analytical ones define key characteristics



or divide a holistic mark (score) into key parts, similar to an essay that can be divided into an introduction, main part and conclusion (TESOL International Association, 2017). Every part in itself forms some mark. Single criteria estimate work by one criterion, e.g., assessing an essay by its being persuasive or not. Holistic criteria, as a rule, are used as summarizing assessment, whereas analytical and single criteria are used as current assessment (during the whole academic discipline or academic year) (Arter & McTighe, 2001).

Effective criteria demand the description of the task (what future teachers have to do), presuppose some assessment scale and substantiation of tasks appropriateness (what knowledge and skills have to be formed) (Stevens&Levi, 2005). Thoroughly worked out criteria are clearly formulated, consistent, detailed, and differentiated.

The use of criteria is an excellent means of providing a feedback between a lecturer and a future teacher (a student) as they demonstrate their promotion in correspondence to the standards. Criteria provide consistence and let students know how they are assessed, and to teachers they give useful information for organization of learning. But despite the diligence of standards elaboration, it is important to keep in mind that they are subjective.

7. While elaborating standards it is necessary to compile a dictionary of terms that must comprise all definitions and concepts for their clear interpretation and usage (National Council for Accreditation of Teacher Education, 2010).

All these elements are a basis for standards elaboration. But it is necessary to keep in mind that they must be open (to be extended and upgraded), dynamic (to be easily changed in the result of their approbation), understandable (concerning their content and formulation) (Council of Europe, 2001; Fenner & Kuhlman, 2012). Special attention should be given to teacher's level of language knowledge. For this a special test should be used (e.g., international placement tests, which must be of advanced/proficient level for the fifth year students –TOEFL, PET, CPELT, IELTS, PTE Academic). To define the level of language knowledge, a written test, as well as an interview, video demonstration of teaching process, portfolio and other assessment forms can be used (Kuhlman & Knežević, 2013).

Having studied all these bases for elaboration of the standards of foreign language teachers' professional training, one can have a clear understanding of everything that must be taken into account while working out the standards. The next stage of our research was to study TESOL step-by-step process of creating the standards themselves – finding the participants of the workgroup, defining the quantity of them, duration of the project, and kinds of support (financial, administrative). It was agreed that the workgroup has to prepare a draft of the standards and submit them for consideration of other stakeholders for review and feedback. This workgroup must comprise only people who have knowledge and skills in all the key branches of a foreign language (in our case– English): language itself, culture, teaching methods, assessment, and professional development. The participants of the group must be a unified team, flexible, open, polite, communicative, non-conflicting, have adequate perception of remarks and critic. It must comprise different stakeholders (teachers, lecturers, future teachers, administrative bodies of educational establishments, representatives of Ministry of Education). The group has to appoint a head and a secretary; clearly define responsibilities and duties of every participant to have productive work of the whole group.

To elaborate the standards of foreign language teachers' professional training in Ukraine we have involved 20 English language lecturers of English Language Practice and Teaching Methods Chair (International Relations Faculty of Khmenlntskyi National University) who provide training of English language teachers for secondary school; the Chair's Head; the Dean of International Relations Faculty; 4 fifth year students of "Secondary



Education. English Language and Literature” specialty, and 4 teachers of English from comprehensive schools of Khmelnytskyi city. The result of the workgroup activities was supposed to be a draft of the standards which had to be submitted for consideration of other chairs of the university and the Academy of Liberal Arts in Khmelnytskyi city.

Before the work group started its activities we made sure that teachers were aware of what they were doing, had motivation to reach one single aim and a strategic plan, were consistent and well-coordinated, understood the essence and advantages of standardized education, had support of their initiative from the governing bodies of the educational establishment and other stakeholders, who were ready to help the workgroup with the approbation of their work results within the university (namely, in “Secondary Education. English Language and Literature” specialty).

At the beginning of the work the participants of the workgroup had to fill in the form, which primary aim was to define whether the views of the workgroup participants coincided with those presented in the concept of TESOL standards and whether the latter could be used in the context of educational policy of Ukraine. The last question was aimed at comparing aspects of foreign language teachers’ professional training stipulated by the standards, formulated by the participants of the workgroup, with the respective aspects stipulated by TESOL (Table 2).

Table 2

Questionnaire for the participants of the workgroup aimed at elaboration of the standards of foreign language teachers’ professional training

Questions	Answers with comments
1. What must the basis for the standards comprise and what do you expect to reach in the result of their elaboration?	
2. How can standards be used in the context of your work with students?	
3. How can effectiveness of the standards be assessed?	
4. Which approach (conceptual, e.g., principle-based) or concrete (practical, field) is it better to use while elaborating the standards?	
5. What aspects of future foreign language teachers’ professional performance should be included into the standards?	

Conclusions of the workgroup concerning aspects of foreign language teachers’ professional training that should be stipulated in the standards are presented in Fig. 1 (in percentage correlation).

Having studied the aspects, singled out by the participants of the workgroup, we have determined that they almost coincided with those that were made the basis of TESOL standards (Table 3).

It should be mentioned that aspects of teachers’ professional performance, singled out by the workgroup, namely, increase of motivation and self-motivation, extracurricular activity, interdisciplinary teaching, and professional cooperation, are stipulated by one or another performance indicator in TESOL standards.

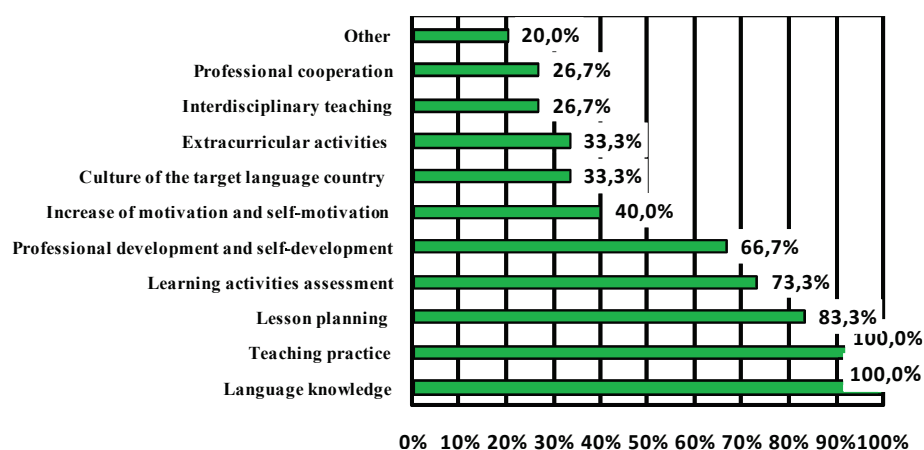


Fig. 1. Conclusions of the workgroup concerning aspects of foreign language teachers' professional training that should be stipulated in the standards

Table 3

Correlation of aspects of foreign language teachers' professional performance (in TESOL standards and those, singled out by the workgroup)

Professional performance aspects, stipulated by TESOL standards	Professional performance aspects, stipulated by the workgroup
Language. Culture. Planning, implementation and control of the learning process. Assessment. Professionalism	Language knowledge. Target country's culture. Lesson planning, teaching practice. Learning activity assessment. Professional development and self-improvement

Thus, we have made a conclusion about possibility of using TESOL standards for elaborating our own standards corresponding to the Ukrainian educational environment. After all the participants of the workgroup have studied TESOL standards, a questionnaire was conducted. According to it, 24 participants out of 30 stated that TESOL standards could be used as a basis for working out Ukrainian standards, 6 participants claimed that they could be partially used being adapted to the context of the Ukrainian educational system. 26 participants preferred field approach to standards elaboration, and 4 participants favored the conceptual one. At the same time, 17 participants mentioned that while working out Ukrainian standards the fact that TESOL standards are worked out for native speakers-teachers should be taken into account. In Figure 2, the participants' views as to what should be taken into consideration while developing standards on the basis of TESOL standards are shown in percentage correlation (as the result of the conducted questionnaire).

Then, the very work on the development of foreign language teachers' professional training standards has started. It consisted of the following stages:

1. Determining the aim, appropriateness and theoretical framework of this process.



2. Defining the format/approach to the standards. In the result of the questionnaire, 80 % of teachers chose field approach, according to which standards and indicators of performance are developed for each branch of knowledge.

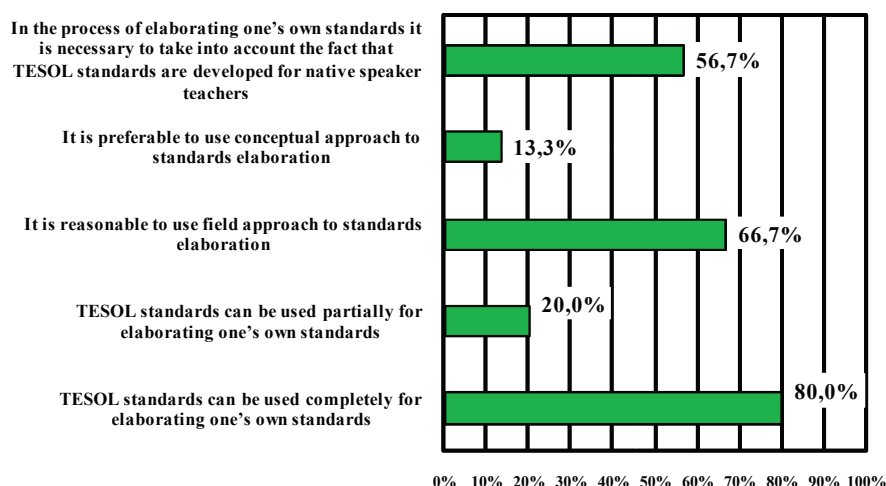


Fig. 2. Results of the workgroup questionnaire about possibilities of using TESOL standards for working out Ukrainian standards

3. Establishing short-term aims (determining fields for formulating standards and defining the standards themselves), long-term aims (elaborating performance indicators for each standard, their approbation on students of “Secondary Education. English Language and Literature” specialty), and deadlines for their fulfillment (3 months – for short-term aims and 5 years – for long-term aims).

4. Thorough study and analysis of TESOL standards by the participants of the workgroup.

5. Elaboration of Ukrainian standards in subgroups to make a draft variant of the standards with the use of respective TESOL standards as a model.

5. Discussion of the draft standards by the whole workgroup and finding out if they correspond to our educational environment and what kind of standards they belong to (subject-based, pedagogical or performance-based).

6. Elaboration of performance indicators for each standard (after their being approved by the whole workgroup).

7. Discussion of performance indicators and elaboration of criteria for each of them. It was agreed by the group that for the Ukrainian standards it was enough to work out a “corresponds to the standard” criterion without TESOL criteria “approaches the standard” and “exceeds the standard”.

Step-by-step process of the workgroup activity aimed at developing the standards is represented in Table 4.



Table 4

Stages of the standards elaboration and their fulfillment by the workgroup

Stage	Fulfillment
Aim and theoretical substantiation. Organizational work (deadlines, participants, stakeholders, duties distribution)	Discussion within the whole workgroup
The choice of the approach to elaboration of the standards (field or principle-based)	Discussion within the whole workgroup
Developing Ukrainian standards on the basis of TESOL standards	Preparing a draft in subgroups. Discussion within the whole workgroup
Developing a system of standards' evaluation	Work in subgroups. Discussion within the whole workgroup
Implementation (approbation) of the standards	Combination of standards with training programs (curricula, syllabi, disciplines)
Discussion of the results, formulation of conclusions, further approbation	Discussion and work within the whole workgroup

In the result of the workgroup activities, there have been formulated the standards, presented in Table 5.

Table 5

**Field standards of foreign language teachers' professional training, elaborated
by the workgroup**

Fields	Standards
Language	1. Language as a system. 2. Language learning and its upgrading. 3. Use (practicing) of the language
Culture	1. Culture and its influence onto the students' learning. 2. Comparative analysis of the target country culture and of the native one
Planning, implementation and control of the learning process	1. Planning of the foreign language learning on the basis of standards. 2. Implementation and control of the foreign language learning on the basis of standards. 3. Effective use of technologies and resources in foreign language learning
Assessment	1. General principles of assessment system. 2. Current assessment of future foreign language teachers concerning language knowledge. 3. Assessment of the future teachers' language level (advanced/proficient)
Professionalism	1. Professional formation of future foreign language teachers. 2. Teachers' professional development. 3. Professional cooperation of all the stakeholders

For the standard "Language as a system" the workgroup has developed performance indicators, presented in Table 6.



Table 6

Performance indicators for future English language teachers according to the standard “Language as a system”

Performance indicator	Indicators of correspondence to the standard
A. Knowledge of the components of the language and the language as an integrative system	Teachers use components of a language and language as an integrative system to teach a foreign language
Performance indicator	Indicators of correspondence to the standard
B. Using knowledge of phonology, morphology, syntax, semantics, pragmatics to help students with the development of speaking, reading, writing in English.	Teachers apply knowledge of phonology, morphology, syntax, semantics and pragmatics development to define aspects of English which present difficulties for learning, and define how they can positively influence the learning of these language aspects by learners. Teachers help learners to identify, use, master sound system of English and other communicative skills, thus encouraging the development of speaking skills. Teachers teach syntactic structures which are necessary to learners for effective social and educational communication. Teachers incorporate different learning technologies to help learners with the development of literacy skills. Teachers incorporate different learning technologies to help learners with understanding and appropriate use of vocabulary in oral and written forms. Teachers provide learners with timely help and sufficient contextual practice with idioms, set expressions, phrasal verbs, etc. Teachers work out contextualized learning with the use of formal and informal language to help learners with the use and mastering a language with different purposes
C. Knowledge of discursive structures, which take place in studying English as a foreign language.	Teachers use different strategies to help learners master discursive structures, peculiar to oral and written forms of English
D. Demonstration of proficiency in English knowledge and giving learners a good example of language proficiency (being a role model)	Teachers demonstrate proficiency in all aspects of English

CONCLUSIONS

After elaboration of the standards and indicators of teachers' performance there has been chosen a group of fifth year students – future teachers of English in Secondary Education. English Language and Literature” specialty whose correspondence to the standards has been checked. A questionnaire form was developed to get a feedback from the students themselves and the lecturers who performed their training to estimate their attitude to standards and correspondence to them. The questionnaire included the following questions to students:

- Is this standard necessary, important?
- Is it clearly formulated?
- Can it be estimated?



– Do you consider yourself being able to correspond to all the performance indicators and if not, why?

Teachers had to answer students' questions, as well as to say whether the standards were completely covered by syllabus/curriculum, whether standards covered the whole content of professional training and if not, what should be taken into account, whether it was easy to estimate the correspondence of future teachers to the standards, whether future teachers understood standards and how they would be assessed on their basis, whether standards stipulated future foreign language teachers knowledge and abilities.

The questionnaire forms presupposed obligatory commented answers. The conducted questionnaire testifies that students (19 in total) consider standards to be necessary, important, clearly formulated, but the majority consider the content of education as not corresponding to the standards, and they consider standards not quite clearly evaluated. Only 9 students considered themselves corresponding to all the performance indicators (on the basis of the approbated standard "Language as a system").

Lecturers defined that the biggest problem was absence of a single definite system for estimation of students' correspondence to the standards (performance indicators provide only superficial estimation). It has to demonstrate whether future teachers, who completed training program according to these standards, correspond to them and can teach by themselves. Such estimation stipulates the availability of a portfolio (with lessons plans, demonstration lesson, self-assessment, etc.). One more problem is caused by the fact that existing syllabi and curricula don't cover all the aspects presupposed by the standards. Thus, there arises a necessity to adjust existing teacher training programs to elaborated standards.

But still it is too early to talk about productivity and efficiency of approbation, because the complete implementation of the standards needs approbation throughout the complete foreign language teachers' training program that is 4-6 years (depending on the degree – Bachelor or Master).

Still, at this stage of our research it is quite clear that the main difficulties of standards implementation are caused by the necessity to elaborate a definite system for assessing the correspondence to the standards and the adjustment of existing training programs to the standards. One of the possible solutions to the problem is involvement of stakeholders of different levels to elaboration of the standards (from future teachers to representatives of Ministry of Education). Practical implementation of this issue is the prospect of our further research in the area.

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SPECIFICITY OF STUDENTS' TECHNOLOGICAL TRAINING IN FINLAND AND GREAT BRITAIN

ABSTRACT

The specificity of students' technological training in Finland and Great Britain has been considered. It has been found that the state policy of foreign countries is aimed at providing students with professional knowledge, work skills and combining comprehensive and professional training. Specific attention has been paid to the subjects and courses in foreign countries, which are equivalent to the course on technological training. It has been indicated that establishing connections between school, industry and production is one of the important conditions for improving technological training. The specificity of students' technological training in Finnish schools at different levels of education has been characterized. Indeed, the level of education defines the character of technological operations differentiation based on the materials of manufactured products; gradual introduction of professional and polytechnical optional and specialized courses, whose volume corresponds to regional conditions; organization of visits to production, agricultural and forestry enterprises; active participation of students in professional production, which contributes to acquiring practical experience in the chosen production area. It has been revealed that Finnish schools pay particular attention to the importance of proper facilities and resources and fully equipped workshops, namely joiner's shops, locksmith shops, tailor's shops, fully equipped teaching kitchens and canteens. It has been revealed that technological training of students in Great Britain is characterized by their active involvement into field experience; establishment of mini-enterprises based on comprehensive schools; centralization in solving the main objectives in the field of students' technological training. It has been stated that the mini-enterprises in schools contribute to strengthening the relations between school and the labour market. The common form of students' technological training is industrial placement and the main method is project-based learning.

Keywords: *the education process, technological training, students, technologies, design and technology lessons, production, the learning process, mini-enterprises.*

INTRODUCTION

In the context of reforming the education system based on the requirements of the Concept of the New Ukrainian School (2016) and the Concept of Ukraine's Education Development for 2015–2015 (2014), the approaches to implementing the educational field in technologies and technological training of students have been changed. One can observe



a tendency towards strengthening its connections with production and enhancing the level of school leavers' training for working activity and their readiness to introduce technological innovations. In the leading countries, schools focus on regional needs, provide a diverse choice of studies and promote practice-oriented courses. However, the utmost importance of reforming school education in foreign countries is given to design and technology, technical (polytechnic) education, resolution of socioeconomic problems in society through the use of work skills, extension of students' work experience, development of technical and technological and economic knowledge, practical and productive skills, certain pre-professional and professional training, expansion of students' polytechnic worldview and development of their creative skills based on the integration of technological training with the foundations of sciences, market economy with different forms of management. Thus, the state policy of foreign countries is aimed at providing students with professional knowledge, work skills and combining comprehensive and professional training. In this aspect, foreign experience in organizing students' technological training, in particular in Finland and Great Britain, is rather relevant.

THE AIM OF THE STUDY

The study aims to generalize foreign experience in organizing students' technological training and analyze the main trends in the implementation of technological education in Finland and Great Britain.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

The results obtained from the analysis of psychological and pedagogical researches prove a considerable interest in the specificity of students' technological training abroad. Such scholars as K. Kotun (2014), K. Kurylchuk (2006), M. Muraveva (2014) highlight the specificity of students training in Finland; O. Miliutina (2008) and A. Sbruieva (2004) describe technological training in Great Britain, namely they reveal the essence of technological subjects and the number of hours allocated for their study, methods and forms of technological training organization. Of scientific interest are also the researches by D. Gillard (2011), A. Green (1990), K. Jones (2003), O. Lokshyna (2005), H. Yehorov, O. Krasovytskyi, V. Lokshyna, V. Madzhon & B. Melnychenko (2006), R. Perchenok & G. Semenova (2008), A. Sampson (1982), M. Warnock (2005) devoted to the study on technological training of students abroad. All these researches have laid the basis for this article.

The problem under study has been theoretically explored due to analysis and synthesis of research findings on technological training of students; generalization and systematization with the aim to distinguish technological subjects and specialized courses, highlight the specificity of students' technological training and draw relevant conclusions.

RESULTS

Solving the issues of technological training is one of the main conditions for educating a fully developed personality, which is directly related to moral, intellectual, aesthetic and physical education (Ministerstvo osvity i nauky Ukrainy, 2014).

It must be noted that each country solves this problem taking into account its own national traditions, attitude to work and mentality. In addition, European countries have introduced the course on Technology to the list of compulsory subjects. The process of mastering the Technology course allows individualizing the education process due to the use of special methodical and technological means. However, most countries take into account relevant regional needs and, therefore, the vast choice of study fields is still preserved. The EU statistics indicates that most students choose professional profiles. In 2014–2015, 8 million 227 thousand students proceeded to general academic education and



11 million 123 thousand students – vocational education (Eurydice, 2015; Madzihon, 2006, pp. 21–24). Therefore, establishing the connections between school, industry and production is one of the important conditions for improving technological training. Moreover, the institutions of general secondary education should foresee the changes taking place in production within the country and make necessary adjustments in educational activities in order to provide the younger generation with better training for life and work.

In general, the socioeconomic development in foreign countries positively affects vocational technological education, which has changed its function and now occupies a leading place in the system of continuing education. The objectives of education have changed too. Schools used to prepare young people for admission to higher education. Today, they aim to prepare students for practical activities in the field of innovative technologies and work in production and agriculture in accordance with modern market requirements. The increase of interest in technological courses has been caused by the introduction of the educational field “Technology” into middle and high school curricula abroad. In Great Britain, technological training is represented by the course on Design and Technology, in France – Technology, in Germany – Production Technology, Labour Studies, in the USA – Career Education, Technology, in Japan – Introduction to the World of Professions and Labour (Lokshyna, 2005; Yehorov, Krasovytskyi, Lokshyna, Madzihon, & Melnychenko (2006); Perchenok, & Semenova, 2008).

In Finland, general secondary education consists of the main school and lyceum, which follow the polytechnical principle of education. Finnish schools pay particular attention to the importance of proper facilities and resources and fully equipped workshops, namely joiner’s shops, locksmith shops, tailor’s shops, fully equipped teaching kitchens and canteens.

In Finland, the course on Crafts (1–2 academic hours per week in grades 1 and 2; 2 academic hours per week in grades 3–6) is introduced into the curriculum of the main school (the first stage). Students learn how to work with paper, cardboard, small material and, starting from grade 5, wood. Specific attention is paid to the quality of the product. From grade 5, students are divided into groups. Such optional polytechnic courses as Home Economics (grade 7 – 3 academic hours per week; grade 9 – 1 academic hour per week) are introduced at the second stage of the main school (grades 7–9). In grade 7, students master the basics of working with textiles (3 academic hours per week). Also Finnish students have the opportunity to study such optional courses as Technical Activities, Working with Textiles, Home Economics, Agriculture and Forestry (2–4 academic hours per week) (Kurylchyk, 2006). The lyceum offers a differentiated curriculum (3 years of study). Optional courses include IT-Equipment, Technical Activities, Working with Textiles, Home Economics, whereas specialized courses are professional and polytechnical, whose volume corresponds to regional conditions. During Years 1 and 2, lyceum studies amount to 2 academic hours per week; during Year 3 – 1 academic hour per week (Kotun, 2014, pp. 42–45).

Similar to the main school, lyceum studies motivate male students to master the basics of technical activities and female students – to work with textiles (handweaving, tailoring and health care). At lyceums, technological training involves visits to production, agricultural and forestry enterprises, participation in professional production and acquisition of practical experience in the chosen production area. It must be noted that industrial placement contributes to acquiring theoretical knowledge of the course on Technologies, developing students’ technological skills, accustoming them to work in the production environment, to be responsible for the assigned task, to be independent while performing production tasks (Muraveva, 2014).



In Great Britain, secondary schools have introduced technical training in accordance with the needs of the national economy, including Home Economics. Describing the British system of technological training, one should mention the special trends inherent in it: increasing interest in the problem of rapid changes in the economy of agriculture, production equipment and technologies; attempting to solve educational problems through using active, innovative teaching methods and involving students in production; establishing mini-enterprises in schools; promoting centralization in solving the main objectives in the field of students' technological training (Miliutina, 2008).

The country's main approach to solving problems of technological training is reflected in the acts adopted by the Parliament, the recommendations of The School Curriculum (1981), Examination at 16 Plus: a Statement of Policy (1982), The General Certificate of Secondary Education (1986), which highlight the need to involve all students into technological training, regardless of what professional activities (physical or intellectual) they might choose in the future. The National Curriculum includes the course on Technology in the list of compulsory subjects (4–7 academic hours per week). The course includes such sections as Art and Design, Business Studies, Design and Technology, Home Economics (Sbruieva, 2004).

It must be noted that young people pay special attention to various crafts, design, technology, which can be mastered during the course on Technology. In 1990, the course on Technology was replaced with Design and Technology as a result of the conducted reforms aimed at preparing the younger generation for work activities. The traditional system of education in the country is represented by a variety of curricula, which may differently define content characteristics of the course on Design and Technology. In some schools, the course on Design and Technology consists of crafts, design and technology and is studied integratively. Other schools offer a differentiated study of these fields (Sbruieva, 2004).

In Great Britain, technological training is rooted in three areas, namely, mastering the course on Design and Technology; pre-professional courses; mini-enterprises in schools, which form the basis for entrepreneurship development (Miliutina, 2008). The course on Design and Technology includes the following: studying the processes of creating and using objects, systems and elements of the environment; working with different materials and tools; informational training, namely searching, developing and transferring ideas; studying the ways to fulfil consumer needs and enhance entrepreneurial culture (Yehorov, Krasovytskyi, Lokshyna, Madzihon, V& Melnychenko, 2006; Miliutina, 2008).

Industrial placement is one of the forms of technological training. The nature of such placement and its duration are defined by the relevant statement and mainly depend on regional economic characteristics. The study of the course on Design and Technology is based on project-based learning. The project aims to teach students how to solve real technological problems.

It must be noted that the country's government pays special attention to the development of entrepreneurial culture, since it is the main factor in solving unemployment problems and enhancing the level of economic development. An example of such a government policy might be the cooperation of banks and schools. If one of the biggest British banks intends to obtain tax benefits, it provides every school with a non-repayable loan of £40 so that they may purchase the necessary training materials and consequently establish a mini-enterprise. It must be noted that the majority of school enterprises turn out to be profitable. Mini-enterprises and their activities in schools have been rather relevant in



Great Britain since the 1960s. In 1985, the Mini-Enterprise in Schools project was adopted (Sbruieva, 2004). Indeed, the mini-enterprises in schools contribute to strengthening the relations between schools and the labour market. So, the main component of technological training is practical activities (Miliutina, 2008).

CONCLUSIONS

So, the study on Finnish and British experience in organizing technological training of students allows drawing the following conclusions: 1) technological training optionally combines comprehensive and professional training; 2) an important role is played by technological training based on developing knowledge and skills through involving students into technological activities at enterprises; 3) comprehensive training is carried out in parallel with technical and technological training of high school students and is combined with practical activities at modern enterprises; 4) the course on Technology is allocated 30–35 % of total study hours in order to ensure the high level of technological training.

The prospects for further researches are aimed at analyzing monitoring of the results obtained from students' technological training in foreign countries and defining the main ways to improve their training in the national education system.

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FORMING COMPETENCE OF SOCIAL RESPONSIBILITY IN VOCATIONAL TRAINING OF FUTURE PETROLEUM ENGINEERS (BASED ON FOREIGN SCHOLARS' VIEWS)

ABSTRACT

The article deals with the issue of forming competence of social responsibility in vocational training of future petroleum engineers in Ukraine and abroad. Various views on the essence of social responsibility, particularly by means of higher technical education, have been given. It has been stated that many scholars have thoroughly focused on the essence of social responsibility used by higher education systems of different countries. The article also emphasized that social responsibility can be examined in terms of obligation, reaction and responsiveness. Therefore, it has been presented that social responsiveness are actions that exceed social obligation and social reaction. Additionally, the essence of social responsibility appears to be associated with perseverance and self-discipline. The foreign pedagogical experience referring to social responsibility provides a focal aspect of the role of the professional educator and vocational training throughout the world. Comparative studies of social responsibility are quite infrequent, typically as opposed to other connected areas, like comparative management, law or governance. It is stressed on an instructive interference in learning activities which inquired to train future petroleum engineers more excellent to evaluate severely all pros and cons of social responsibility that is a way to integrating the concerns of the industry and society. Based on the analysis of scientific and reference sources and international documents it has been concluded that a high percentage of universities include social responsibility related subjects on their curriculum. Social responsibility is taught as either specific social responsibility subjects or as a part of various subjects on the academic curriculum.

Keywords: *social responsibility, comparative studies of social responsibility, training of petroleum engineers, foreign experience, professional competences, interdisciplinary course, curriculum, professional educators, engineer professional development.*

INTRODUCTION

The compelling advance of society necessitates worldwide influential people, chairmen, and leaders to be proficient for the competence of social responsibility. This transferable ability specifies a proper foundation to operate with the perception necessary to realize the tremendously intermixed civil, economic and physical results of peculiar solutions accepted, maintaining a view of continuing systems for the welfare of humankind in total. Scarcity for the competence social responsibility by leaders in any area, for instance, business, management, production or technology, may have implications in selections that can put in jeopardy the growth of current and new age groups.

It is a firm belief that social responsibility is an interdependent skill that ought to be obtained from a curriculum, demanding further growth during any engineer career.



Appropriately, petroleum HEIs due to their curricula, learning plans and professional organizations and due to their professional code of ethics endure a candid authority to expand a solid competence for social responsibility of leaders in their area.

The procedure of acquiring skill of social responsibility by future petroleum engineers is related to a complete education for balanced growth given from HEIs. A comprehensive teaching demands not merely newing curricula, it although includes newing the campus (Koester et al, 2006).

THE AIM OF THE STUDY

Our study is aimed at showing the relationship between petroleum engineering and the competence of social responsibility, the contemporary prevailing context taken by the petroleum sector to develop companies' commitments to all their collaborators because it has a slight part in petroleum ethics training.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

Theoretical and methodological aspects of our study are based on standout works by the outstanding scholars like M. Barth, S. Babidge, J. Boynton, A. Cortese, C. Didier, J. G. Frynas, R. Huet, D. M. Hussey, P. L. Kirsop, C. J. McClelland, R. E. Meissen, J. M. Smith and others are keen to teach the future generation of petroleum engineers to be well-rounded professionals who consider the technical and social aspects and the broader effects of their activities. Their current researches involve pedagogical interventions in labs and lecture rooms, including how to best teach technical and professional competences. Formed on the above-underlined scholars' analyses it has been claimed that it is exceedingly meaningful to deliver such a notion as social responsibility in technical and social aspects of petroleum threats that are appropriate to future jobs, expand learners' complicatedness of outlook regarding social obligation.

The petroleum industry introduces peculiar callings to its specialists who are occasionally obliged to operate contesting general patterns and codes of behavior, various commitments, shared beliefs, values and responsibilities, the importance of individual dignity, social responsibility approaches of their management (M. Blowfield, J. Boutelle, L. Bucciarelli, S. Costa, G. Catalano, D. Douglas, J. G. Frynas, G. Papadopoulos, M. Scoble and others). In short, the competence of social responsibility is the contemporary prevailing core taken by the petroleum sector to develop companies' commitments to all their collaborators because it has a slight part in petroleum ethics training.

To reach the goal of the study we have used such methods as theoretical analysis, systematization, generalization, synthesis, comparative analysis.

RESULTS

Various surveys assume that our Earth will achieve its moving scope with current population rise proportion and exploit of natural resources eventually (Meadows et al, 1972; Meadows, & Randers, 2004). Luckily, these researches focus on a design of steady growth that faces the up-to-day demands without bargaining the readiness of next age groups to satisfy their individual requirements (World Commission on Environment and Development, 1987). The proposed design considers a foreseen boost of industrial effectiveness, but the most momentous need is a difference in society's style of living. What is more, people should substitute their consumption habits accelerating the exploit of renewable resources, rising current recycling scope and assessing the influence created by goods in time of their circulation. Additionally, productive next advances for the human race need comprising social integrity too. This explains in a regular growth of living



conditions and prosperity for current and next generations considering the economic, medium and social results of all implemented activities.

Having the right degree or diploma is no guarantee of promotion, but the right attitude, good communication skills will get petroleum engineers and the competence of social responsibility a long way. Also, petroleum professionals need to enjoy the challenge of working in a unique focused environment. That is to say that it is of great importance to realize how innovative competences are obtained in this field because of the arrangement of competences applied on-site in the extraction of oil and gas, both onshore and offshore.

It is generally accepted that an essential requirement for future petroleum engineers to be proficient for the competence of social responsibility is that HEIs have used a holistic training system for sustainable growth in conjunction with curricula, different researches, campus activities etc. HEIs worldwide present a differential way to use such a model. It is necessary to use an approach to evaluate the level of readiness accomplished by a HEI to take a holistic model of learning for sustainable growth. There are various ways for it, e. g., the Auditing Instrument for Sustainable Higher Education (Rooda, 2010), the Graphical Assessment for Sustainability in Universities (Lozano, 2006), Sustainability Tracking, Assessment & Rating System (AASHE, The STARS Program, 2016) or the Quality System of Science and Technology Universities for Sustainable Industry (QUESTE-SI, 2016), all documents are formed on the grounds of quality support means.

The first instrument was provided by the Dutch committee for steady higher education who developed the Auditing Instrument for Sustainable Higher Education (AISHE). In this approach the idea is that organization is regarded as one of some progress steps according to a series of ratios. AISHE comprises four areas: vision and policy, expertise, instructive objectives and methodology, training details.

The process involves an investigation of four areas to be over with a self-evaluation description that can be inspected outwardly (Rooda, 2010). Another method to evaluate the level of progress of HEIs in training for balanced progress is the Graphical Assessment for Sustainability in Universities (GASU) (Lozano, 2006), dependent on the Global Reporting Initiative balanced markers (Hussey et al, 2001), determined to show peculiar ways of the learning delivered at universities together with education, research, campus operations and community exceed. Its pluses are in its multistakeholder suggestion and its sets of signs in the social, economic and environmental aspects.

The Sustainability Tracking, Assessment & Rating System (STARS) is a self-evaluation instrument created for a HEI to get points formed on the efficiency on different parts connected to steady advance united in four aspects: academic, engagement, operations and planning and administration. The last score allows realizing the level of comprising of a HEI in balanced growth (AASHE, The STARS Program, 2016). At last, the Quality System of Science and Technology Universities for Sustainable Industry (QUESTE-SI) is a quality assurance scheme, which holds up quality increase of balanced educational growth at HEIs.

It needs the illustration of internal evaluation information that is pursued by an inspector group external assessment. QUESTE-SI evaluation is placed on the information obtained from four parts: institution strategy, education and curriculum, students' involvement and research and innovation (QUESTE-SI, 2016). Likewise STARS, after the assessment HEIs receive total points that notify the current institutional rank regarding steady growth and contributes to find out cons of their upgrading. These methods, however, are created to evaluate the level of adopting education for balanced growth of HEIs, it is predicted that a more holistic way of establishments in planning a model on education for



steady growth will contribute to a higher achievement of future proficient specialists for the competence of social obligation, even though that demands to be further investigated.

The course module stressing on the medium aspects of the competence of social duty should start to be delivered to future engineers. In essence, scholars of this ability keep emphasizing it in a petroleum engineering curriculum. The engineering educators assume after the module learners are more capable to determine all elements of this term which is categorized as social, such as society progress or communication. Even in the case when learners become more aware with the social aspects of this skill, they are not ready to define a function for experts in this field. At the same time it is essential for learners to identify the restrictions of their learning and look for special knowledge from other subjects, assisting future specialists to understand how engineers and petroleum engineering are precisely involved in matters that are considered as basically social points and aid to make clear both social and technical scopes of their qualified work.

CONCLUSIONS

Summing up the analysis of the competence of social responsibility, as well as some conceptual clarifications on the notion of social responsibility we can define that social responsibility is the term that converses to a feature that incorporates decisive actions. These actions can be characterized as intentional acts that are fulfilled using sufficient instruments to achieve goals in certain situations and are regarded as proper and precise in our times. The foreign pedagogical experience referring to social responsibility provides a focal aspect of the role of the professional educator and vocational training throughout the world. Comparative studies of social responsibility are rather opposed to other connected areas, like comparative management, law or governance. Also, scholars stress on an instructive interference in learning activities which inquired to train future petroleum engineers more excellent to evaluate severely all pros and cons of social responsibility that is a way to integrating the concerns of the industry and society. The obtained results testify that social responsibility is placed in undergraduate and graduate curricula, aims, teaching methods and textbooks. It is worth pointing out that social responsibility has been acquiring much importance in all the fields, particularly in higher technical education. Many scholars have thoroughly focused on the essence of social responsibility used by higher education systems of different countries and indicated that social responsibility can be examined in terms of obligation, reaction and responsiveness. Furthermore, it has been emphasized that social responsiveness are actions that exceed social obligation and social reaction. Based on the analysis of scientific and reference sources and international documents it has been concluded that a high percentage of universities include social responsibility related subjects on their curriculum. Also, social responsibility is taught as either specific social responsibility subjects or as a part of various subjects on the academic curriculum.

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MODERN COMPARATIVE ANALYSIS ON TRAINING OF FUTURE SECURITY AND SAFETY SPECIALISTS IN UKRAINE AND THE USA

ABSTRACT

The article deals with the peculiarities of security activities in Ukraine and the USA and, consequently, aims to comparatively analyze professional training of future security and safety specialists in these countries. The author has presented comparative description of future security and safety specialists' training in Ukraine and the USA. It must be noted that research findings of Ukrainian comparativists on the peculiarities of security specialists' professional training in the leading European countries are of great significance for the problem under study. Indeed, nowadays quality services can only be provided by those security companies, whose staff are equipped with modern technologies and have undergone relevant professional training. In Ukraine, however, professional training of security specialists should be improved in novel and comprehensive ways. The author has singled out some problematic aspects in professional activities of security specialists. The author concludes that taking into account modern requirements, future security specialists should master the foundations of economic knowledge, have a high level of culture, speak foreign languages, show initiative, be responsible, strive for self-development and self-study, introduce important innovations, acquire the skills of working with modern information and communication technologies that will enhance the quality of security activities. The prospects for further studies involve conducting comparative analysis on professional training of future security and safety specialists in the leading European countries.

Keywords: *security activities, professional training, security and safety specialists, foreign experience, the USA, Ukraine.*

INTRODUCTION

At the modern stage of global development in the world and in Ukraine, one can observe crucial socioeconomic and military and political changes that significantly affect the national security of the country and require that substantially new approaches to its provision, including in the field of security activities, should be developed. It must be noted that border security is one of the state's priority interests. Every country has its own security policy specifics, taking into account external and internal factors. In view of this, there appears to be a need to discover fresh ways to enhance the quality of professional training in the field of security activities, reconsider the national experience, as well as study positive experience of foreign countries.

THE AIM OF THE STUDY

The study aims to conduct modern comparative analysis on future security and safety specialists' training in Ukraine and the USA.



THEORETICAL FRAMEWORK AND RESEARCH METHODS

The problem of preparing specialists for professional activities has been studied by many researchers. The aspects of police officers' professional training in foreign experience have been covered by Ukrainian and foreign philosophers, lawyers, sociologists, educators and psychologists. Based on the analysis of relevant publications, it has been found that most Euro-Atlantic countries have not established individual security structures yet. This obligation should be imposed on the Ministries of Home Affairs, and border security should be ensured by police units, as has been adopted in Austria, Belgium, Germany, Sweden and Hungary.

Of great importance are the studies on professional training of security specialists in the leading European countries by Ukrainian and foreign comparativists, namely A. Balendr (Hungary); V. Berkii, O. Kirieiev, S. Psel, N. Ryndenko (Poland); I. Bloschynskyi (Lithuania); O. Didenko (Romania, the USA); J. Bacquias, R. Bossong & H. Carrapico, E. Brunet-Jailly, N. Karampekios, I. Oikonomou & E. G. Carayannis, M. Doubler, M. Jaquish, R. Loik, E. Maggio, J. Monar, O. Zhabenko (the EU and the USA) et al. Profound analysis of the problem under study indicates that individual issues in the organization of security specialists' training have been reflected in the researches by such scholars as O. Didenko (creative activities of future border guards), S. Filippov (organizing psychological training), A. Halimov (organizing morale building activities), V. Raiko (organizing legal training), O. Torichnyi (methodology for developing specific military competency in future border guards) (Mazepa, 2013, p. 23).

The government establishes special bodies, which aim to constantly protect citizens and their property from offenders, detect and prevent crimes and offenses, apply certain sanctions to criminals and offenders. The study on future security specialists' professional training is associated not only with a detailed analysis of its essence, content and nature, but also is related to those issues, which should be reconsidered in accordance with the changing priorities in the development of society.

Noawadays, there are many researches devoted to the law enforcement function that the government must assume. The conducted studies of such scholars as V. Averianov, A. Bratko, S. Bratus, V. Chirkin, A. Komziuk, A. Kuchuk, V. Lukashevych, O. Nehodchenko, P. Onopenko, O. Tykhomirov, B. Yebzieiev et al. have disclosed the nature of the law enforcement function and highlighted various aspects of law enforcement activities.

However, the problem of comparative analysis on professional training of future security and safety specialists in Ukraine and the United States remains unresolved.

In order to achieve the aim of the study, such methods as analysis, synthesis, generalization and systematization of advanced teaching experience have been used.

RESULTS

In order to better understand the essence of future security specialists' professional training at the present stage, it is necessary to consider its history in more detail. The earliest historical mention of the state special enforcement authorities dates back to the Hetmanate. During this period, specially created infantry forces (serdyuk's regiments), which were directly subordinated to Hetman, were called to guard Hetman, Hetman's Residence, Cossack Elders, General Artillery, Military Office and General Court. By the decree of the Russian Tsar as of July 14, 1726, serdyuk's regiments were abolished. Subsequently, a separate military unit called Zholdak's troop was organized for Hetman's protection. After the elimination of the Zaporozhian Sich, the very concept and issue of Ukrainian security activities ceased to exist (Zubok, 2006, p. 67).



In Russia, the police force was established as the Main Police in Saint Petersburg in the early 18th century. Along with law enforcement activities, it was engaged in general administrative activities. The departmental police was first founded in the 1730s, namely under the management of the mining industry in Yekaterinburg in 1734. Already in 1789, departmental police units were merged with the newly created urban police (Kadino, 2005). In 1870, however, departmental police was restored at gold mining areas, where specific “security” posts funded by joint-stock companies and subordinated to governors were introduced.

In his book, titled “The National Guard and Reserve. A Reference Handbook” M. Doubler (2008) indicates that from the earlier founding of the American militia in 1636 to the participation of Guard and Reserve forces in today’s war on terrorism, citizen-soldiers have come forward during the national emergencies to protect and defend the nation (p. xi).

Based on the implications above, one can assume that security services have always been in demand considering the threats to the integrity of states and possible internal conflicts within them. Taking into account today’s challenges, it is rather imperative to demonstrate the differences in modern training of security specialists, in particular in Ukraine and the USA.

Thus, the modern market of security services in Ukraine is rather wide and diverse. The number of security specialists in the country has exceeded 600,000. All these specialists perform extremely necessary and useful work for society, which can often be dangerous and nervous. Despite this fact, they all strive to be efficient and successful. It must be noted, however, that high-quality services can only be provided by those security companies, whose staff are equipped with modern technologies and have undergone relevant professional training. Therefore, the process of future security specialists’ professional training in Ukraine should be updated and the existing obstacles should be eliminated.

In Ukraine, the main modes of training include full-time, part-time, external and distance studies. Fulfilling licensing conditions security companies deal with the need to enhance the level of their employees’ professional training with the help of new objects, new equipment, new people (Shtuchnyi, 2015, p. 37). Therefore, one can assume that full-time studies are the most optimal way to do it, since future specialists are able to obtain a diploma in a month and a half. As a result, curricular activities do not take much time and the quality of comprehension is rather high, which all together develop into a highly qualified specialist. However, practice shows that full-time retraining is rather unsuitable for security specialists, who work during the day-time and security companies are still reluctant to financially support their employees’ full-time studies.

Thus, external and distance modes of training turn out to be more effective. The duration of such training increases two times and study time covers only four hours per day, since it is rather difficult to perceive any kind of information after a full working day. Those individuals who have chosen external studies should be provided with the methodical literature required for independent study. However, not every educational establishment can provide it. Therefore, there appears to be the need to design educational material according to a single model, since this can largely simplify both the activities of centers for training security specialists and their retraining in the future. It must be noted, the duration of training in these centers is typically up to 20 days. Consequently, ten-day training involves 49 hours per day. Considering an intensive working schedule, it might be rather difficult for trainees to engage in laboratory work and prepare relevant reports. In addition, trainers in educational centers have quite limited opportunities for professional self-development, since there are no advanced training courses dedicated to Object



Security, Technical Security Equipment, etc. As a result, they are forced to spend more time on independent study, which can in a way negatively affect the quality of the educational services they provide. Moreover, one can observe some dumping in the market of educational services for security and safety specialists. Currently, the prices range from 200 to 1,800 UAH for studies per person. One could not agree more that such studies were unlikely to result in full-fledged professional development of these specialists.

Of great importance is distance learning as a process of providing students with the main educational material with the help of digital learning technologies and ensuring active interaction between the students and the teachers during the education process. Indeed, computers are rather available, the cost of the Internet services is affordable, which makes it possible to organize video conferencing. The use of modern technologies in distance learning can rather decrease expenses on the organization of learning, since there is no need in renting office space and organizing both students and teachers' further training outside their educational establishments. Indeed, such a mode of training can involve large numbers of students and enhance the quality of their studies due to modern technologies. Finally, the main advantage of distance learning consists in the possibility to establish a single educational system, which is rather relevant for corporate learning. Unfortunately, distance learning has not been efficiently applied in the market of security services (Kisliakov, 2013, p. 73).

In our opinion, it is imperative to establish a single coordinating authority, which will regulate the activities of educational centers according to a general framework. Also, such an authority could elaborate a policy with clearly defined top-priority goals and learning outcomes of future security and safety specialists' professional training, since it is necessary for these specialists to be able to work under the modern conditions and changing legislation. In addition, it is essential to coordinate the interaction between educational centers and specialized ministries and aim it at improving legislation in the field of security and legal support provision.

In the USA, private security companies first appeared in the 1980s and later on in Western Europe. These companies used to only protect objects and call the police or the fire department if necessary. The demand for security services sharply increased after insurance companies began to offer discounts to the customers, who hired physical security to protect facilities, since this could increase the chances of the insured property to be preserved. Currently, the world's security industry consists of many private companies, which hire private security guards, thus ensuring security in their countries. Therefore, many aspects of private security companies' activities in Western countries can be taken as a model. This includes work experience and technical support, advanced technologies, cooperation with government agencies (Brunet-Jailly, 2007; Jaquish, 2006; Maggio, 2011; Monar, 2005; Zubok, 2006, p. 44).

Modern private security companies provide a wide range of services. Thus, they provide citizens with personal protection and secure the most important public and private objects, patrol city quarters, conduct private investigations, fight against fraud and theft, escort shipments and cash delivery vehicles, provide objects with technical equipment, monitor the security situation, provide detective services and maintain order in mass events. In other words, private security companies partially replace governmental structures and operate in those areas designated by the government. The scope of their activities is determined by governmental authorities, and their decisions, in turn, depend on the general situation in the country and abroad. In particular, the most radical changes in the legal



framework on private security services were introduced after major terrorist attacks in the United States in 2002 (Jaquish, 2006).

In the USA, there are no specific requirements for professional training of security specialists. Many employers do not require any particular education from unarmed security specialists. However, some employers might prefer to hire those individuals, who completed secondary education.

Most US states recognize the need for special training and licensing of security specialists. As a rule, an applicant must be at least 18 years of age to obtain a security guard's license, undergo training in the field of public relations, conflict studies, first aid, special training related to their specific tasks and learn how to compile reports. It must be noted that the security business is one of the most popular in the USA. The powers of private security companies are almost equal with that of the police force.

Despite the high demand for security services in the USA, the employees of private security do not have high incomes. Their monthly income amounts to approximately \$ 2,000 per month (\$ 28,000 per year). Those specialists (approximately 10 % of total population), who work in the field of computer systems and electronics development, as well as in raw material companies receive the maximum income. Their salary amounts to approximately \$ 55,000 – 60,000 per year. Security specialists, who work in hospitals, schools, nursing homes and other institutions funded from the governmental budget, receive the minimum income (Shtuchnyi, 2015).

The American Society for Industrial Security (ASIS) has developed the guidelines aimed at ensuring the implementation of minimum standards for security services quality. In accordance with these guidelines, security specialists are required to study for at least 48 hours during the first 100 working days. Subsequently, they are to take written and practical exams covering topics such as information exchange with law enforcement agencies, crime prevention, evidence processing, use of force, testimony in court, reporting, interpersonal and communication skills, as well as special procedures. In addition, the ASIS recommends armed specialists to undergo annual re-training and additional training on the use of firearms. However, some employers mostly prefer hiring security specialists with higher legal education. In addition, a number of educational establishments offer programs and training courses specifically for security specialists (American Society for Industrial Security, 2018).

In the USA, the security specialists who work in the institutions with enhanced security measures must undergo profound theoretical and practical training. For instance, security specialists at nuclear power plants are obliged to be trained for several months before they are allowed to start work. Even after that, they work under the supervision of senior staff for a considerable period of time. They are taught to use firearms, alarm systems and electronic surveillance, first aid and methods for detecting and solving security problems.

Security specialists and detectives in gambling establishments are required to have completed secondary education and certain specialised training (not necessarily a bachelor's degree). Several educational establishments offer training and certification programs. Training sessions usually take place in classes, equipped as a casino with various means of observation. Previous experience in security is a preference for hiring (Jaquish, 2006).

As evidenced by the above-mentioned statements, the USA has provided all necessary conditions for high-quality professional training of future security specialists, whereas Ukraine should still make major changes to adjust professional training of these specialists to the global level.



CONCLUSIONS

Taking into account the demands of the present, future security specialists should master the foundations of economic knowledge, have a high level of culture, speak foreign languages, show initiative, be responsible, strive for self-development and self-study, introduce important innovations, acquire the skills of working with modern information and communication technologies that will enhance the quality of security activities. The prospects for further studies involve conducting comparative analysis on professional training of future security and safety specialists in the leading European countries.

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ECOLOGICAL TRAINING OF FUTURE NATURAL SCIENCES TEACHERS IN HIGHER EDUCATION INSTITUTIONS ABROAD

ABSTRACT

The problem on ecological training of future natural sciences teachers in Ukrainian and foreign higher education institutions was comparatively analyzed. Novel approaches to ecological education based on the systemic and personality-oriented learning were considered. The forms and methods used to promote ecological education of the individual in Ukraine and abroad were outlined. The studies of individual scholars on the foreign experience in creating an ecologically rational research and educational environment in the UK, Germany, the USA, Moldova and other countries were justified. It was indicated that West European countries created relevant conditions for transforming a model of humanistic education into an eco-humanistic one since it should be considered as a wide-scale educational achievement. It was found that the education process in British universities was targeted at ecological education organization and focused on its practical aspect, namely ecological environment preservation. In the country, there is a national system of ecological education aimed at eliminating the negative effects of the industrialization and the progress of science and technology. The education process in this country employs the forms and methods, which promote ecological education of the individual such as observations, discussions, laboratory work, fieldwork, presentations, etc. In some German universities, considerable attention is paid to regulating the negative changes in nature and mastering the skills for their prevention and elimination. Although there is no a federal standard for ecological education in the USA, it is mandatory in many states and considered not as an abstract phenomenon, but a concrete regional activity. In the country, they also conduct numerous researches on regional ecological problems and actively search for the ways to solve them. It was concluded that the foreign research and educational environment aims to discover the ways to optimize the knowledge of the relationship between man and nature and protect and preserve the environment.

Keywords: *ecological training, future natural sciences teachers, ecologically rational research and educational environment in higher education institutions, ecological culture of*



personality, ecological education of students and pupils, foreign experience of environmental management, ecology-oriented research activities, international cooperation in the environmental protection sector.

INTRODUCTION

The strategy for solving ecological problems is primarily based on the awareness of the relationship between man and nature. In Ukraine, ecological education of young people has become one of the priorities in the development of society. Environmental protection is one of the strategic objectives aimed at strengthening European integration. The priority of ideals and values within the human-nature interaction is an important condition for achieving sustainable development of society at the international and national levels.

The relevance of ecological problems is compounded by Ukraine's entry into the European and global space, which requires that the teacher should significantly expand his/her functions. Thus, they should be able to master and further employ new teaching technologies, transform the educational paradigm into an effective pedagogical system through replacing reproductive teaching with creative one, etc.

Nowadays, economically developed countries demonstrate a powerful experience in providing ecological training in higher education institutions. Modern lifestyle causes the need to "ecologize" thinking and, in particular human activity. Modern higher education institutions should provide young people with profound professional knowledge and, most importantly, cultivate their ecological culture, develop their ecological views implying a careful attitude to the environment. Therefore, it is imperative to prepare relevant specialists for ecological education implementation.

THE AIM OF THE STUDY

This study aims to comparatively analyze Ukrainian and foreign experience of providing natural sciences students with ecological education in higher education institutions and to outline the educational forms and methods, which contribute to ecological education of personality, and discover the main ways to solve ecological problems, protect and preserve the environment.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

The research and educational environment in higher education institutions is an important information platform for the students who intend to teach and educate a new generation that should be able to solve global problems. Therefore, the main objectives in the Ukrainian strategy for education and science development are the following: 1) to study foreign experience of providing future natural sciences teachers with ecological education and 2) to introduce the most positive aspects of this experience into higher education institutions in Ukraine.

Novel approaches to ecological student education based on the systematic and personality-oriented learning, theoretically structured principles, conditions, modes of learning, experience, theory and practice of ecological training abroad are disclosed in the researches by the following scholars: N. Bidyuk, H. Marchenko, Ya. Poliakova, I. Zadorozhna – the UK; D. Kvasnychkova – the Czech Republic; O. Romanova – Belarus; I. Rudkovska – Germany), D. Tsykhi – Poland. The individual aspects of ecological teacher training in the UK were studied by Yu. Alforova, H. Andrieieva, N. Avshenyuk, Yu. Kishchenko, O. Leontieva, O. Matviienko, L. Pukhovska.

Many scholars (N. Morze, M. Krylovets, S. Semenets, V. Sharko, O. Zadorozhnaya et al.) studied ecological training of future subject teachers in Ukraine. In particular,



T. Bondarenko, N. Mishchuk, I. Moroz, V. Shuldyk, A. Stepaniuk and O. Tsurul devoted their researches to individual aspects in methodological training of biology teachers. N. Hnatiuk (2014) considered the features of implementing research activities in the context of modern education.

The current research relies on the main ideas of the following Ukrainian and foreign scholars. Thus, O. Bondar (2006) studies world trends in ecological education, while M. Hadzhyiev (2007) describes bachelor's courses on natural sciences in pedagogical universities. S. Hilmiiarova (2002) compares the continuity of ecological education for future teachers in Russia and the USA. O. Zadorozhna (2018) analyzes the process of developing worldview in pedagogical universities students by means of nature protection. Ye. Klimut (2002) justifies socioecological training of teachers in Germany, whereas T. Kuchai (2009) characterizes the British system of developing future teachers' readiness to provide ecological training. I. Sichko (2011) clarifies the features of ecological education in educational institutions abroad. T. Chuan (2003) contextualizes attitudes and strategies of US educators towards ecological education development. R. Floden & M. Meniketti (2005) discuss the influence of research activities on the research potential of future natural sciences teachers. P. Tarhon (2004) explores general didactic principles in ecological training of biology teachers.

The following research methods were used to achieve the aim of the study: theoretical methods (analysis of psychopedagogical literature) justified the starting point of the research; interpretive and analytical methods serves as the basis for synthesis, analysis, systematization and generalization of Ukrainian and foreign sources; comparative historical analysis revealed trends in the development of higher education abroad and identified similar and distinctive features in the content of teacher training in Ukrainian and foreign higher education institutions.

RESULTS

To begin with, the British education system is internationally recognized and is well-known for its innovative teaching and learning technologies. Therefore, T. Kuchai's research (2009) is of great scientific interest for our study since the scholar explores the cultivation of teachers' pedagogical mastery under the conditions of teacher education development, as well as professional training of English language teachers in the UK and the ways to implement the innovative ideas of British experience in Ukraine.

According to T. Kuchai (2009), ecological training of natural sciences students in British higher education institutions is mainly aimed at developing their individual readiness to preserve and rationally use natural resources, nurture a harmonious relationship between man and nature and protect the environment. In the UK, they have established an original national system of ecological education aimed at eliminating the negative effects of the industrialization and the progress of science and technology. This important activity is based on universal values and national traditions of environmental protection and promotes ecological ideas within society, which can be evidenced by the national documents such as *A Children's Environment and Health Strategy for the United Kingdom* (2008); *Freedoms of Information Environmental Protection (The Environmental Information Regulations)* (2004) etc. They highlight the need to increase attention to ecological education, as well as education of different categories of the population and identify the priority areas of their further development (Kuchai, 2009).

As shown by a thorough analysis on the British model of training future teachers to implement ecological education of pupils, it is aimed at involving different groups of the



population into environmental protection, which is a holistic pedagogical theory and practice with its inherent laws, principles and forms.

In the UK, teacher training involves attracting future teachers' attention to the need to "ecologize" the education process. In addition, British university curricula incorporate individual environment-oriented modules. Thus, natural sciences students of University of Roehampton study the following modules: Ecology, Forest Ecology, Environmental Physiology, Ecosystems, Human Rights (19 % of the total curriculum time). At the University of Leeds, natural sciences students master such modules as Ecology, Ecology Development, Environmental Science, Environmental Protection (21 % of the total curriculum time). The University of Glasgow offers the following modules: Ecology, Forest Ecology, Environmental Science, Molecular Ecology, Ecology and Environmental Protection, Environmental Analysis, Environmental Management (35 % of the total curriculum time) (Kuchai, 2009, pp. 170–172).

In the UK, the problem of rational environmental management and protection is efficiently solved provided that the continuity of ecological education (general secondary education – higher education – advanced training) is ensured. The education process in British universities is targeted at ecological education organization and focused on its practical aspect, namely ecological environment preservation since it employs the forms and methods, which promote ecological education of the individual, namely observations, discussions, laboratory work, fieldwork, presentations, etc. Some universities pay considerable attention to controlling the negative changes in nature and mastering the skills for their prevention and elimination. It must be noted that the scope of teacher professional development also includes ecological education with the aim to enhance ecological literacy of teachers.

Comparative analysis on the content characteristics of ecological education and methodologies of training future teachers for ecological education in the UK and Ukraine proves similar approaches to organizing the education process in both countries, namely the credit based modular curriculum, forms of the education process organization (lectures, seminars, practical classes, tutorials, discussions, methodical presentations, etc.). At the same time, there are some peculiar features in professional training of future teachers in the UK, namely practice-oriented ecological modules; a wide range of optional modules; considerable time for independent study; well-organized research activities on ecology and ecological education; application of teaching methods that contribute to developing critical thinking of future teachers.

Most West European countries and the USA establish the centres for ecological education. In the USA in particular, these centres are based in museums and libraries, some of them having the international status (Gilmiyarova, 2002, p. 116). O. Bondar and T. Saienko (2006) state that although there is no a federal standard for ecological education in the USA, it is mandatory in many states. In addition, ecological education is considered not as an abstract phenomenon, but a concrete regional activity. Specific attention is paid to research activities, as well as studies on ecological problems in the area of residence.

I. Sichko (2011) indicates that at the University of Michigan (USA) they optimally combine theoretical (developing theoretical knowledge) and practical training (being involved in teacher placements) within degree courses on environmental protection. Due to teacher placements, teachers-to-be learn how to solve specific ecological problems and simultaneously impart their knowledge on their pupils. In addition, much attention is focused on practical methods and forms of learning, namely practical classes, fieldwork, waste management measures, landscaping, animal rescue operations. In the USA, ecological education aims to discover the ways to optimize the knowledge of the relationship between man and nature and protect and preserve the environment.



In Europe during the second half of the 20th century, the problems of environmental protection were rather fragmentarily studied. Despite the fact that the curriculum normally included the module on Environmental Protection, the latter mainly considered professional safety. The situation improved after the introduction of postgraduate education, which presupposed multidisciplinary approach to environmental science (Bondar, 2006). Nowadays, West European countries regularly create relevant conditions for transforming a model of humanistic education into an eco-humanistic one since it should be considered as a wide-scale educational achievement.

Ye. Klimut (2002) states that German scholars hold different views on achieving the aim of ecological education. The followers of traditional pedagogy (Umwelterziehung) prove that ecological education should be provided within one subject or be included in the content of all subjects. There is also an alternative approach or eco-pedagogy (Oekopaedagogik), whose supporters oppose instrumental thinking and promote comprehension of environmental perceptions. They approve socioecological training of teachers, whose essence should be seen in the development of ecological culture, that is, an attitude to the environment.

M. Gadzhiev (2007) indicates that the international cooperation on ecological education in European universities includes the following areas: an exchange of information about the research findings on the ecological conditions of the environment; joint research and methodological developments in the field of educational technologies that contribute to developing ecological culture of young people, as well as initiation and implementation of joint ecological educational and research projects and programmes; an organization of the international ecological tourism and fieldwork; a joint organization of international forums, conferences, seminars, participation in the activities of international funds; scientific internships in the field of ecological education (pp. 65–66).

Special attention should be paid to the organization of ecological education in I. Shamiakin State Pedagogical University in Mazyr (Belarus). The Biology Faculty of the University offers the course on Biology and Environment Protection. Within the course, students are taught the following modules: Environmental Management (Years 3 and 4), Human Ecology (Year 3), Economics and Environmental Management (Years 3 and 4), Teaching Methodology of Environmental Protection (Years 3 and 4), Ecology, Radioecology and Energy Preservation (Year 4), Ecology of Modern Production and Environmental Monitoring (Year 4). In addition, the curriculum includes practical training in the field of environmental management and environmental protection and ecology (Mozyrskiy gosudarstvennyi pedagogicheskiy universitet imeni Y. P. Shamiakina, 2013).

The Moldova State University, in addition to the basic module on Didactica biologiei (Biology Didactics) (2004), offers methodological modules such as Educational Technologies, Biological Experiment Methods etc. During methodological training, they mostly use interactive teaching methods, computer technologies, the project method, portfolios, etc.

The above-mentioned achievements of foreign countries in the field of ecological education should be studied in detail, creatively reconsidered and coordinated with the national system of education.

CONCLUSIONS

The foreign education systems are worldwide recognized for their high-ranking universities and innovative technologies of teaching and learning.

Indeed, the UK's state policy focuses on ecological priorities since the country heads the Commonwealth of Nations, uniting more than a billion people on the planet and



therefore contributes to creating an international system of ecological education and its implementing into educational practice. A thorough analysis of methodological framework for training future teachers for ecological education in the country allowed discovering the ways to creatively implement its innovative ideas into the system of ecological education in Ukraine.

The research findings prove that in the countries of near and far abroad (the USA, Germany, Moldova, Belarus), they pay considerable attention to ecological training of natural sciences students. In addition, they regularly update the content of ecological training in accordance with current educational trends, introduce specialized ecological modules, promote innovative teaching technologies of teaching and learning, as well as develop the latest educational and methodological support, in particular, for distance learning. Ukrainian educators, theoreticians and practitioners, as well as relevant specialists should thoroughly study their achievements and implement them into ecological education of natural sciences students.

Further studies should be focused on better understanding of the foreign experience in organizing methodical training of natural sciences teachers and developing their ecological culture so that its positive aspects may be implemented into the national system of higher education.

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CONCEPTS OF TEACHER EDUCATION DEVELOPMENT IN EUROPE

ABSTRACT

The article analyzes global trends in the development of teacher education with the aim to improve the education system in Ukraine and presents a comparative and pedagogical study on the concepts of teacher education development in Europe, in particular Great Britain and Germany. It was found that conceptual and methodological fundamentals of modern foreign pedagogy were constantly updated and adjusted. In West European pedagogy, the most common concepts of teacher education development are rationalistic, conservative and neohumanistic (phenomenological) ones. It was specified that rationalistic and traditional concepts of intellectual development were appropriate for the individuals who were reluctant to engage in cognitive activities and needed constant external stimuli. The phenomenological concept is humanistic-oriented and prioritizes personal learning targeted at individual self-realization and defines a learning environment to be a unique catalyst for successful learning. In Great Britain and Germany, open learning is one of the leading forms in realizing the phenomenological concept. Theoretical principles of open learning are related to the philosophy of existentialism, which emphasizes the need to create relevant conditions for learning so that students may freely realize their individual needs. Despite the fact that the concept of open learning is still under development and primarily describes the basic guidelines for education development and the issue of its practical implementation has not been fully disclosed yet, it appears as a fundamental strategy for modern education. The main principle of open learning is individualization of the education process. Individual skills of students determine the content, methods, forms and tools of learning since the pedagogy of modern teacher education in England is based on them. It was noted that the system of distance education in Ukraine was under development too. However, it may become rather promising provided that Ukrainian educators have taken into account positive aspects of relevant foreign experience and combined the most advanced distance learning technologies with the most effective technologies and methods of traditional classroom learning. West European experience in developing higher teacher education can be implemented in Ukraine provided that the most effective traditions of the national teacher education have been preserved and, therefore, can adjust them to the modern international standards.

Keywords: teacher education, development, concepts, West European pedagogy, Great Britain, Germany, open learning, distance education.

INTRODUCTION

Today Ukraine integrates into the European and global educational spaces and therefore aims to create a modern system of continuing education. In this regard, it is essential to set optimal goals and update the organization, content, models and methods of educational activities. When analyzing the position and a dynamic development of West European education systems one can conclude that this stage represents an era of a



worldwide education reform. There appears to be an international unification of national educational standards, the expansion of educational models and the enhancement of current teaching technologies. In addition, every country intends to enrich its historically developed educational potential, for which reason it is important to critically study some innovative experience of other countries in organizing education and updating its content. As a result, it is necessary to analyze global trends in the development of teacher education with the aim to improve the education system in Ukraine.

Indeed, a comparative and pedagogical study on the systems of higher education in Great Britain and Germany which incorporate modern innovative systems of teacher training is rather relevant and is called for by the need to discover novel paradigms in professional training of teachers in the system of teacher education in Ukraine.

THE AIM OF THE STUDY

The aim of the study consists in conducting theoretical analysis on the concepts of teacher education development in Europe.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

The intrinsic characteristics of education along with teacher training were analyzed by O. Fink (1978) (the basic issues of systematic pedagogy), A. Hargreaves (2000) (professionalism and professional learning), T. Herman (1977) (creating learning environments: the behaviorist approach to education), R. Morshead (1975) (hidden ideologies in contemporary education), C. Patterson (1973) (humanistic education) et al. The issues of distance learning and open education development were outlined by many scholars including as T. Danylyshena (2008) (the development stages of distance education as an innovative form of the master training), Yu. Golionova (2009) (the importance of distance learning in the global educational space), M. Hanif, M. Nawaz and S. Tanyeer (1979) (the issues of open education) M. Leshchenko and A. Yatsyshyn (2014) (open education in the categorial dimension), I. Tavgen (2003) (the trends, policy and strategies for open and distance learning) et al.

While researching, such methods as analysis, synthesis, comparison, generalization were used to study scientific literature and compare the views of different scholars on the concepts of education.

RESULTS

Conceptual and methodological fundamentals of modern foreign pedagogy are constantly updated and adjusted. In West European pedagogy, the most common concepts of teacher education development are rationalistic, conservative and neohumanistic (phenomenological) ones.

P. Bloom, B. Skinner, E. Fink, the creators of rationalist education, emphasize the problem of knowledge acquisition and a practical adaptation of the youth to society by means of education. At the heart of the rationalist model ideology there is behavioural engineering founded by B. Skinner, according to which an individual can change his/her personality in one way or another, if using the right methods of influence and control (Fink, 1978). Rationalists believe that behaviour implies all kinds of reactions inherent in human beings, namely thoughts, feelings and actions. In Great Britain, the scholars following the rationalist conception of higher education development believe that the programme of professional teacher training should include relevant behavioural terms so that the teacher may effectively develop an appropriate behavioural repertoire of students and assess the obtained results.

Supporting the ideas of B. Skinner, T. Herman (1977) highlights the need for some greater clarity in the organization of the learning process, when teachers and students



clearly understand the goal of learning and, accordingly, what they must learn. As a result, the learning process is mechanically reduced to a set of certain behavioural units, that is, it is transformed into “some formalized training of externally manifested actions that are ranked according to the degree of their implementation complexity” (Herman, 1977).

The advantages of rationalist learning include the content characteristics of educational material, which depend on the current level of students’ knowledge and skills; the absence of time limits for mastering the educational material. The disadvantage of behaviorist learning consists in a rather mechanical basis for developing cognitive structures of the individual and his/her cognitive potential. Thus, the rationalist concept of intellectual development is appropriate for the individuals who were reluctant to engage in cognitive activities and needed constant external stimuli.

The conservative concept is one of the leading concepts that have influenced the modeling of the education process in higher education institutions in Western Europe. The advocates of this theory insist on maintaining the conservative role of educational institutions and speak in favour of the proven methods and ways of organizing educational activities. They also believe that the learning process should be centered on one learner and therefore exclude any collective activities. The main role in the learning process is performed by the teacher who transfers knowledge and skills to students and is “a model or an ideal for which students must strive” (Morshead, 1975, p. 667).

The supporters of the phenomenological concept prioritize humanistic-oriented education and personal learning. The psychopedagogical theory of personality development in the education process is basically subjective and idealistic. This means that they explain the learning process based on the features of psychophysiological activity, its impact on the individual’s development, his/her behaviour. The goal of teaching involves primarily the individual’s self-realization and the lack of restrictions in his/her behaviour.

The scholars who follow the neohumanistic conception share the rationalists’ view that learning should incorporate different activities and also contribute to greater emotional involvement of the students who “independently determine the goal of learning, take decisions about their actions, gain some valuable experience and are responsible for the consequences” (Hargreaves, 2000, pp. 151–182). Therefore, rationalists and traditionalists consider a cognitive component to be the main one in the organization of learning, whereas the supporters of the neohumanist concept prioritize cognition.

The main qualities of a professional teacher who adheres to the principles of humanism include the ability to provide the individual with the opportunity of self-realization and revealing his/her true self. The priority is given to the teacher’s role as an organizer of the learning process and a facilitator of students’ socialization rather than a transmitter of information. According to R. Burns (1986), every teacher prioritizes those whom he/she teaches and only then, the goal of teaching.

Under today’s conditions humanistic pedagogy is targeted at every child and has become the main theoretical basis for developing traditional teacher education in the West. The positive aspects of neohumanistic education are recognized by many scholars of Western Europe including L. Stenhouse, C. James, P. Ritter et al.

However, phenomenologists define a learning environment to be a unique catalyst for successful learning. In Great Britain and Germany, open learning is one of the leading forms in realizing the phenomenological concept of learning. Theoretical principles of open education are related to the philosophy of existentialism, which emphasizes the need to create relevant conditions for learning so that students may freely realize their individual



needs. Currently, the definitions of the terms “openness” and “open education” in pedagogical theory and practice vary in terms of approaches (synergetic, anthropological, systemic ones) to revealing their essence. Despite the fact that the concept of open education is still under development and primarily describes the basic guidelines for education development and the issue of its practical implementation has not been fully disclosed yet, it appears as a fundamental strategy for modern education. The phenomenon and the term “open learning” appeared in Great Britain in 1931. The main principle of open learning is individualization of the education process. Individual skills of students determine the content, methods, forms and tools of learning since the pedagogy of modern teacher education in England is based on them.

Under the present conditions, the concept of open education is associated with information technologies and distance education. Open learning and distance education are rapidly developing and their impact on the development of all education systems is greatly increased as information technologies evolve and improve.

Indeed, open learning and distance education increase not only the educational levels of society, but also contribute to improving qualifications and retraining of specialists in relation to the transition to new technologies. The main principle of open and distance learning is to provide more applicants with an access to education and professional training without limits in time and place (UNESCO, 2004, p. 13).

It should be noted that the technologies of open and distance learning in West European countries have been used since the 1960's. The first standards for implementing the methods of distance learning into higher education institutions were established by the Open University in Great Britain (Danylyshena, 2008, p. 47).

From the very beginning, the University has been successfully providing the forms of part-time and distance learning not only for British applicants but also for foreigners. The University is recognized as one of the largest higher education institutions in Europe and is one of the world leaders in open and distance learning not only in Great Britain but throughout Europe. In the early 21st century, the British system of education occupies the leading positions among other European countries in terms of distance learning availability. More than 1,300 British colleges and universities offer distance education. More than one million of European students engage in distance learning in Great Britain without leaving their country of residence (Golionova, 2009, pp. 20–24).

In Germany, the first university offering part-time education was founded in 1974 in Hagen and has been successfully implementing distance learning programmes for the past few decades (Schniders, 1997). The University of Hagen fits harmoniously with the German system of higher education and is rather popular among the adult population, who for some reason are not able to participate in conventional full-time education (Tavgen, 2003).

Already in the early 20th century, there appeared a large number of higher education institutions offering distance education in Germany. In the country, Virtuelle Fachhochschule or the Virtual University of Applied Sciences offers full-fledged online courses. The German system of open and distance education as an alternative to conventional full-time education is constantly improved.

Due to an active development of open education and distance learning in the late 20th century, many West European countries have defined the main objective of teacher education institutions to be relevant professional training of the future teachers who should strive for constant self-improvement, personal changes and be able to elaborate their teaching methodology, taking into account the changes in the content of education, learning and teaching technologies, as well as the development of the students themselves.



CONCLUSIONS

Therefore, the development of open learning and distance education in the late 20th century – the early 21st century has become the urgent need of the present, one of the ways to implement the concept of continuing education. In Ukraine, the system of distance learning is currently under development. In Ukraine in 2013, they issued the Decree on the Approval of Regulations on Distance Learning and since then the number of educational institutions, offices and centres for distance learning has been rapidly increasing. It should be noted that the development of distance education in Ukraine is primarily related to the introduction of blended learning. However, it may become rather promising provided the most advanced distance learning technologies have been combined with the most effective technologies and methods of traditional classroom learning.

West European experience in developing higher teacher education can be implemented in Ukraine provided that the most effective traditions of the national teacher education have been preserved and, therefore, can adjust them to the modern international standards.

Further researches should deal with theoretical analysis of such fundamental problems in Ukrainian higher teacher education as the development of goals, objectives, content, technologies, methods and techniques of distance education and self-development of future teachers based on the innovative ideas of European experience.

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LEADERSHIP DEVELOPMENT AMONG UNIVERSITIES IN KOSOVO: CHALLENGES AND ALTERNATIVES

ABSTRACT

This article analyses the potential impact of leadership development initiatives on the quality of higher education institutions in Kosovo. Taking into account the fact that leadership is a crucial factor in improving management and performance of institutions, it is necessary to develop and integrate it into the higher education system. Current developments in the education have proven that leadership development in universities is no longer an option, it is instead a necessity. This development takes place at the beginning of teachers' carrier and aims to assist them in developing leadership skills they need to lead schools in the future. School leaders who are considered to be successful at leading tend to make sure that their staff have access to workplace learning and training with many schools providing sets of professional learning activities which ensure the development of leadership skills. This approach emphasises tasks related with student achievements, staff performance, curriculum development and data analysis. It has been defined that the development of leadership that rests on organisation theory is hindered by numerous current challenges at the universities in Kosovo. These challenges are: lack of networking and cooperation, lack of planning and, ultimately, the lack of management and leadership skills. While higher education institutions in Kosovo face many challenges, we assume that they could enhance academic quality and overall student achievements by increasing leadership capacities. In the context of transition of the university role, the demand for leadership development is a need for carrying out university reforms and achieving educational advancement. Thus, the development of leadership skills is more a necessity than an option for higher education institutions to prepare students appropriately for the new era. It has been substantiated that practices such as multisource feedback, action learning and coaching have proven to be useful and their application could increase leadership capacities of educational institutions that are built on organisational approaches and theories concerning enhancement of their quality.

Keywords: leadership development, universities, Kosovo, education reforms.

INTRODUCTION

Higher educational institutions have essentially three key and interrelated functions: knowledge function, marketplace function, and socio-political function. In the context of both globalisation and the transition of the university role, the demand for leadership



development is a need to drive university reforms and to achieve improvement of the education system. Leadership capacities are of crucial importance when it comes to assuming the new roles of the universities in the increasingly competitive and more demanding era. Moreover, current developments across the world demand a new role for these institutions, one that significantly relies on the leadership capacities of the management and academic staff.

The construct of an 'organisation' is characteristic in the modern period and subsequently is inseparable from the domain of education. Nowadays, education systems have become the subject of transformations, and as such request efficiency and higher performance. Consequently, defining and understanding the organisation within educational settings is crucial. Scholars have revealed that student achievement is affected by teaching and university leadership. Furthermore, literature also implies that education institutions which have positively influenced student achievement tend to have university management that is adjusted to the needs of the staff concerning continuous learning and effective leadership development.

The need for leadership development within higher education institutions goes hand in hand with their ever-increasing responsibility. Nowadays higher education institutions have responsibilities that go beyond administrative and managerial duties, such as budgeting, research and community projects, curriculum development, policy analyses and leadership development. The challenge is currently to identify practical approaches for developing such leadership skills.

When studying concepts of leadership one does not only come across different approaches to leadership but also finds a significant amount of literature devoted to leadership development. As institutions attribute an essential role to their leaders and perceive the learning of leadership skills as difficult and complicated, they invest significant time and money into their development (Riggio, 2008). It implies that leadership is necessary because leaders are not born but made. In his review on leadership development D. Day (2000) points out that leadership is usually viewed as an individual-level skill. The inspirational leadership approach, for example, is based on the assumption that the personal qualities or charisma of leaders are influencing their behaviour and success (Bass, 1994; Mullins, 2007).

Leadership skills are even more important for leaders in educational institutions as they have multifaceted job responsibilities. Therefore, school leaders have three domains of functioning:

- macro level (they work with governments and agencies);
- middle-level (the leader focuses on promoting a specific educational organisation);
- micro level (leaders generally focus on effective management of educational organisations).

In addition to different job responsibilities, leaders are strained by ever-changing context and environments, which acquire even more vital leadership skills. Recent developments have reshaped the approach to the professional identity of teachers, and the impact on individual performance has driven teachers to give in to the pressure to conform to the organisational culture, as they attempt to link their professionalism to such expectations. The challenge of educational institutions is to practice leadership correctly since literature suggests that inappropriate leadership practices often lead to conflict within the staff, resistance and, often, favouritism towards specific members of the staff (Yukl, 2006). The performance and achievement of the universities are strongly dependent on leadership development literature and the proper practices of leadership theories and approaches.



THE AIM OF THE STUDY

This paper outlines possible approaches that could lead to effective leadership within educational organisations and leadership development related to student achievements, staff performance, curriculum development and overall quality assurance of higher educational institutions. Further, analysis of leadership development provides both theoretical and practical opportunities for higher education management in Kosovo to integrate and advance leadership in these institutions. Moreover, it allows evaluating existing practices and enhancing professional qualification in this study field.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

Many scholars differentiate different kinds of interventions for developing the skills. The most common interventions are in the form of formal training, developmental activities or self-help activities (Yukl, 2006). Formal training takes place as workshops or management courses at the university and offered by professional trainers. In contrast, the developmental activities are undertaken during the daily work, embedded in the operational job assignments. They include, for example, mentoring by a more experienced person, coaching or individual assignments designed to improve relevant skills. Self-help activities do not require the support of a third party but can be done by the leaders themselves. Reading books, such as the above mentioned, or participating in e-learning programs are two typical examples. The paper will describe in more details development tools which organisations often use: 360° Feedback, coaching, and action learning.

In multisource feedback, 360-degree feedback or multi-rater feedback program (all terms are used interchangeably) managers receive information about their being perceived by different groups of people with whom they regularly interact (Atwater, & Brett, 2005). It includes ratings of the leader's subordinates, peers, bosses, and clients as well as self-rating part (Seifert et al., 2003). The main idea behind the integration of multiple sources in the feedback process is that the behaviour of leaders changes depending on the context and the situation they are acting in (Day, 2000). Usually, multisource feedback consists of ratings on specific types of behaviour skills and is provided in a report, which contains descriptive information as well as the graphical presentation of the data (Seifert et al., 2003).

The multisource feedback gives, on the one hand, an entirely accurate picture of the leader's performance (Day, 2000) and on the other hand, leaders can gain a more comprehensive perspective of their work performance (Yammarino & Atwater, 1993). It is, therefore, a useful development tool for building intrapersonal competence while providing important leader self-knowledge, self-understanding and self-awareness (Barney & Hansen, 1994). Additionally, feedback that includes ratings of peers and superiors is given more attention by the leaders, and they are more likely to show their competences afterwards (London, & Smither, 1995). Despite the ever-growing usage and importance of the multi-source feedback for the development of leadership skills, one has to keep in mind the disadvantages of that method. The report of the 360-degree feedback contains a vast amount of information, which might be overwhelming for the feedback recipient. It occurs primarily when no feedback facilitators are available and when there is a lack of guidance in the organisation concerning the individual change process. It is moreover recommended to check the effectiveness and efficiency as well as the invested amount of time and effort (Day, 2000).

Coaching is an ongoing process of leadership development (Day, 2000). It is a form of face to face learning and behavioural change (Peterson, 1996). Its objectives constitute of improving individual performance of leaders in an attempt to increase their effectiveness



within the organisation (Kilburg, 1996). Coaching is used to train a specific leader for a specific skill or help him/her overcome a specific problem (Day, 2000; Day, & Halpin, 2001). In most cases, coaching is a useful practice since it provides a leader with suggestions regarding specific challenges, such as how to work with people from different countries, how to respond to a demanding supervisor and many other types, as well as unique issues in the work environment. The leader who is assigned a coach has significant advantage of receiving specific suggestions and feedback from someone who understands the challenges while enjoying confidentiality (Yukl, 2006). Despite its benefits, coaching is a costly training practice for companies; therefore, it is not a surprise that companies try to keep this as short as possible and as specific as it can be.

Action learning is another approach which is becoming more popular among companies. It has become rather apparent to many organisations that it is not possible to train and prepare leaders of the 21st century in traditional classroom training (Dotlich & Noel, 1998). Action learning is a form of continuous learning and reflection, and it is a problem-based learning, that is why it seems to be a rather beneficiary practice for the individual as well as the organisation. In action learning the individual is given a problem to solve and is expected to provide a possible solution to the problem or issue. While responding to this significant problem the individual is expected to learn and develop through hands-on experience (Day, & Halpin, 2001).

In action learning, teams or individuals conduct projects and develop a solution to a real problem within the organisation. This means that most of the time these recommendations are to be implemented to succeed. The problems are diverse and numerous while the time frame can be anywhere between a few weeks to several months. All in all, the process of action learning aims at developing cognitive and interpersonal skills of leaders, but these training activities are not applicable for developing technical skills (Yukl, 2006).

Higher education institutions in Kosovo. Higher education in Kosovo emerged in circumstances of ongoing ethnic tensions. Thus, the legacy of the past has an essential influence on their actual situation. The University of Prishtina as the oldest one was established in the academic year of 1969/1970 and had significant influence on future social and economic developments of Kosovo. Initially, it was a bilingual university serving both Albanian and Serb ethnic communities. However, the academic quality and research potential of the university were not at the highest level, because it was poorly funded and politically influenced.

In the aftermath of war, the UN Security Council (by means of Resolution 1244) placed Kosovo under international Administration that supported the building of self-governing institutions but without prejudice to its final political status. In this post-conflict context, Kosovo's education system has been confronted with the necessity to rebuild destroyed school facilities, reorganise staff and resources and rearrange curricula. During this period, until the establishment of the Ministry of Education, Science and Technology (MEST) in 2001, the Kosovar higher educational system was governed by the UN Administration (UNMIK), respectively by its Department of Education and Science.

With the proclamation of independence in 2008, the primary responsibility for higher education was taken by the Ministry of Education, Science, and Technology under the Law on Higher Education in Kosovo. The Law on municipalities, promulgated in June 2008, gives enhanced competencies in higher education to the lately formed municipality of North Mitrovica (Law on Local Self-government, 2008). Furthermore, the Law on Education offers a special provision for the municipality of North Mitrovica to establish the University



of North Mitrovica as an autonomous public institution of higher education and gives the municipality the authority to exercise responsibility for this public Serbian language university. However, the most severe challenge of Kosovo's higher education system remains its low-quality standard regarding teaching methods and research activities. The politicisation of the universities and lack of academic autonomy are additional challenges of the higher education, which reflect in student achievements and their low incorporation into the labour market and economic development.

In Kosovo, higher education is provided at universities, private institutions of higher education (Bartës Privat i Arsimit të Lartë), such as colleges, research institutes, and high schools. There were initially two public universities: one based in Prishtina and one in northern Mitrovica (which at the moment is not integrated into the Kosovo education system but operates as a parallel system, funded by the Serbian government). There are other public higher education institutions in Kosovo, namely the University of Prizren, established in 2010; the University of Peja, the University of Gjakova, University of Gjiilan, University of (South) Mitrovica, all established in 2012/2013; the University of Applied Science in Ferizaj; Faculty of Islamic Studies and Kosovo Academy for Public Safety.

The higher education system in Kosovo is also composed of many private higher education institutions, officially defined as colleges, gathering more than 45.000 students. Nevertheless, in comparison to these private colleges, public universities with around 75.000 students have higher academic standards, are less expensive and therefore are more credible and attractive for students.

The study involved the use of theoretical methods to analyze scientific and methodological literary sources and exploratory method to formulate research findings.

RESULTS

Kosovo established its independence only in 2008 and has ever since been subject to significant changes not only in the political sphere but every domain. The country has undergone several changes in the government policies, and young people primarily inhabit social transformations which have further led to higher education institutions fostering new approaches to learning (Grajcevc, & Shala, 2017).

The first challenge in developing leadership skills among the staff of educational institutions in Kosovo is the presence of bureaucracy and government control. Organisations tend to handle pressure and control by becoming similar to other organisations working in the same field, a phenomenon known as 'institutional isomorphism'. Similar to what literature suggests educational institutions in Kosovo are becoming increasingly similar in their functioning and service provision. The first challenge of education institutions in Kosovo is to break free from government control.

The second challenge of educational institutions is the fact that they are strongly politicised and as such fail to function as independent bodies. These institutions do not adhere to any organisational practices. In this regard, the performance of educational institutions in Kosovo is damaged by the lack of planning. Planning is a key to any organisation, an understanding that is often at odds with postmodernism which notes that strategic planning leads to wasting resources and time because the future is uncertain and as such unpredictable. Past years have witnessed an increasing focus of governments on strategic planning among education institutions.

The lack of networking initiatives negatively influences education quality and may be partly a result of the lack of proper leadership capital within these organisations. Since



entirely independent education institutions no longer exist, such organisations require a high degree of cooperation among one another. Therefore, universities aim to integrate horizontally by cooperating with other national or international universities working in the same domain to create social and economic benefits. Such cooperation tends to bring benefit for all, in the form of offering teaching support and providing resources. However, at times this cooperation between institutions tends to lead to an organisation rethinking its purpose and aims (Stoten, 2011).

These collaboration networks are built on three types of collaboration, namely:

- abstract collaboration (i.e., collaboration on policies),
- strategic planning;
- professional domain (i.e., teaching).

On the other hand, the effectiveness of such collaboration has been hindered by the tendency of institutions to focus on their interests and as such limit their overall profitability. Universities today are less diverse if compared to those of the early 1990s, which can be the result of increasing government policies in finances, innovations and curriculum changes which have all contributed to the real similarity of institutions.

Finally, education institutions in Kosovo have become functional during the last ten years. Before these institutions functioned under less than ideal circumstances. These developments have contributed to higher education institutions, developed on research and academic quality, leadership and organisational culture. The existing status quo on the responsibility and role of educational institutions has contributed to the lack of leadership and management skills within universities. One of the critical challenges of higher education institutions is the lack of management skills and in particular while developing new study programs and research projects. These new initiatives embody the need for leadership and management, which demands additional funds. As such this new type of organisation represents a managerial model in responding to social issues.

CONCLUSIONS

The changing environment of higher educational institutions is not an issue limited to any country; it is instead a global challenge to which educational organisations need to adjust (Stoten, 2011). These changes have exposed teaching staff to the issue of workplace performance, observations, and ultimately professional development. The latest developments in the teaching professions (i.e., Quality Assurance, A Level Information System) have contributed to teaching staff conforming to the goals of educational organisations and complying with growing practices. Educational professionals are being urged to become leaders or followers, and as leaders, they are being taught to conform to, respect the hierarchy and take responsibility for the learning outcomes.

Therefore, more should be done in universities to promote organisational leadership development. Empowering the staff would be a beneficiary approach for every institution. Current developments in the education have proven that leadership development in universities is no longer an option, it is instead a necessity. This development takes place at the beginning of teachers' career and aims to assist them in developing leadership skills they need to lead schools in the future. School leaders who are considered to be successful at leading tend to make sure that their staff have access to workplace learning and training with many schools providing sets of professional learning activities which ensure the development of leadership skills.

The development of leadership that rests on organisation theory is hindered by numerous current challenges at the universities in Kosovo. These challenges are: lack of



networking and cooperation, lack of planning and, ultimately, the lack of management and leadership skills.

The paper elaborated approaches that could lead to effective leadership within universities. Practices such as multisource feedback, action learning and coaching have proven to be useful in education literature, and their application could increase leadership capacities of educational institutions that are built on organisational approaches and theories concerning enhancement of their quality. In our future research we are going to consider possibilities of wider use of the above mentioned practices in the universities of Kosovo.

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PROFESSIONAL PEDAGOGICAL MOBILITY OF EDUCATORS IN THE EUROPEAN CONTEXT

ABSTRACT

The article deals with the features of promoting and organizing professional pedagogical mobility of educators in the European context. Therefore, theoretical framework of the current research includes relevant documents of the Bologna Process (the Sorbonne Declaration, the Bologna Declaration (1999), the Prague Communiqué (2001), The Berlin Communiqué (2003), The Bergen Communiqué etc.). It was specified that one of the main objectives of the Bologna process was to promote mobility of educators since it is an indispensable condition for the existence and development of the European Higher Education Area (EHEA). It was indicated that professional mobility of educators occupied a prominent place in the Bologna process, determined attractiveness and competitiveness of the EHEA worldwide and improved the quality of higher education and research. It was clarified that the following important aspects of the international dimension of teacher training and professional mobility of educators providing such training should be considered in order to improve the international mobility of teacher students: teachers of the native language for foreigners should have experience of study in the country of the language taught; it is important to encourage HEIs to recognize school work internships related to the teaching subject that were completed abroad in the framework of the study exchange programme; development of international faculties in HEIs should be encouraged. It was found that the following ways could enhance the international dimension of teacher training and support professional mobility of educators providing such training: an acknowledgement of the importance of this particular student group as well as a commitment to improving the framework conditions, such as national regulation which may hinder the mobility of teacher training students. It was concluded that professional pedagogical mobility in the European context was targeted at culminating the personality of teacher students – future educators. Based on the obtained findings, some relevant recommendations were outlined to enhance the quality of professional pedagogical mobility of future educators in Ukraine.

Keywords: *mobility, mobility programme, professional pedagogical mobility, educator, teacher student, teacher training, EHEA, the Bologna Process, globalization, integration, internationalization, European context.*

INTRODUCTION

The processes of globalization and internationalization inevitably place new demands, new rules, new requirements that the individual must meet in all areas of professional activity and at all levels. These essential processes influence the field of education, too. The modernization of the Ukrainian education causes the need to ensure a new quality of a modern educator, the main component of which being his/her mobility



manifested in constant internal, personal psychological and external practical readiness for changes, rapid response to them, social and professional mobility.

Nowadays mobility is considered, on the one hand, as a factor of dynamism, increasing the intensity and variability of social processes and, on the other hand, as a factor ensuring stability and manageability of society development. Therefore, Ukrainian educational institutions need an educator who is able to master the technologies ensuring the individualization of education and the achievement of expected learning outcomes, is motivated for continuing professional development, demonstrates innovative behavior, solves complex tasks independently, manages and quickly adapts to the changing conditions.

In view of the above, it is imperative to profoundly study foreign experience, in particular European one, in promoting and organizing professional pedagogical mobility of educators since the positive aspects of such experience can be effectively implemented in Ukraine and consequently enhance the system of the national teacher education.

THE AIM OF THE STUDY

The aim of the study is to disclose the features of promoting and organizing professional pedagogical mobility of educators in the European context and outline relevant recommendations to enhance the quality of professional pedagogical mobility of future educators in Ukraine.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

Theoretical framework of the current research consists of the sources, which contain some valuable information about the concept of mobility and, in particular, professional pedagogical mobility in the European content. In this regard, the official documents of the Bologna Process have been considered. They are the following: the Sorbonne Declaration (1998); the Bologna Declaration (1999); the Prague Communiqué (2001); The Berlin Communiqué (2003); The Bergen Communiqué (2005); the proceedings of the Bologna Process official seminar on Making Bologna a Reality: Mobility of Staff and Students (2007); the Report of the 2012-2015 BFUG working group on mobility and internationalization (2015) etc. These documents have provided a general view on the problem of professional pedagogical mobility and showed the European vision of its development and enhancement. Based on them, it has become possible to outline relevant recommendations to improve the quality of professional pedagogical mobility in Ukraine.

While researching, the following methods were used: theoretical analysis and synthesis, induction and deduction, individualization, systematization and generalization.

RESULTS

According to Yu. Klymenko (2011), the role of professional pedagogical mobility at the stage of preparing future educators is manifested at the intersection of the effects of professional pedagogical mobility and academic and virtual mobility, which ensure goal-setting (what to teach) and the very procedure (how to teach) in the education process. The concept of professional mobility for future educators is an adequate combination of its internal and external features, that is professional competency, flexibility, innovation through the participation in academic exchanges, which in turn promotes professional and personal development of these specialists

One of the main objectives of the Bologna process is to promote mobility of educators since it is an indispensable condition for the existence and development of the European Higher Education Area (EHEA). They view professional mobility of educators, scholars and managerial staff as a possibility of conducting research activities and teaching,



as well as undergoing internships and exchanging professional experience in different countries participating in the Bologna process with respect for their rights in accordance with the law.

Indeed, professional mobility of educators occupies a prominent place in the Bologna process and determines attractiveness and competitiveness of the EHEA worldwide. The promotion of professional pedagogical mobility creates opportunities for personal growth, promotes the development of the international cooperation, improves the quality of higher education and research, meets the needs of the European community and thus provides the European educational space with a professionally significant value.

The most important views on the value of mobility within the educational space are presented in the main official documents of the Bologna Process. They are the following:

1. The Sorbonne Declaration (1998) attaches special importance to creating a single European higher education area as the main way of promoting mobility, employment opportunities and overall development of the continent (Four Ministers in charge for France, Germany, Italy and the United Kingdom, 1998).

2. The Bologna Declaration (1999) states that professional mobility should be encouraged through overcoming the obstacles preventing the effective implementation of professional travels and pays particular attention to the fact that it is essential to recognize and confirm the periods spent by educators, scholars and managerial staff in the European countries other than a permanent residence or workplace for the purposes of research, teaching and advanced training and not to violate their status and legal rights (EHEA, 1999).

3. The Prague Communiqué (2001) highlights the particular importance of a social aspect of professional mobility (EHEA, 2001).

4. The Berlin Communiqué (2003) intends to prioritize professional mobility in terms of postgraduate education so that doctors of philosophy and postdoctoral researchers may be more interested in expanding a scientific cooperation in the global context and enhance research potential of future doctoral candidates (EHEA, 2003).

5. The Bergen Communiqué (2005) indicates that Ministers should focus their efforts on overcoming the obstacles to the development of mobility by encouraging participation in mobility programmes (EHEA, 2005).

The proceedings of the 2007 Bologna Process official seminar on *Making Bologna a Reality: Mobility of Staff and Students* organized by Education International in collaboration with ESIB (European Student Information Bureau – The National Union of Students in Europe) and UCU (The University and College Union, the UK) in London indicate that professional mobility of educators can be determined by the length of time that they should spend on business trips abroad. In this case, the following types of professional pedagogical mobility are distinguished: *visits, exchanges* and *annual leave, grants* and *scholarships, temporary* or *permanent employment* (Department for Education and Skills, 2007).

The working group on social change and mobility along with Bologna Follow-up Group (BFUG), which plays an important role in overseeing the implementation of the ministerial Communiqués as well as in developing the Bologna Process, have attempted to elaborate a common definition covering all the forms and concepts of mobility in the global context. They believe that considering the nationality as the main criterion for statistics is no longer suitable in the existing multicultural community. The BFUG group presents the following definition: professional mobility of educators refers to a period of working in the country other than a permanent residence or workplace for a specific time period (EHEA, 2015).

It must be noted that the Report of the 2012-2015 BFUG working group on mobility and internationalization (2015) prepared by the EHEA raises the problem of teacher's



student mobility. In fact, they emphasize on the need to prioritize “teachers as multipliers and motivators for their students” since it is important to recognize the benefits of intercultural competences acquired through some personal interaction (EHEA, 2015, p. 13). They also state that despite the worldwide recognition of ERASMUS+ programmes, there still appears to be a particular problem with the proper credit transfer and certain restrictions of curricula. Therefore, it is important to discover some novel ways to facilitate “more work and study related stays abroad” (EHEA, 2015, p. 13). In addition, they pay considerable attention to the need to improve the international mobility of teacher students. In this regard, they suggest considering the following important aspects of the international dimension of teacher training and professional mobility of educators providing such training:

- 1) teachers of the native language for foreigners should have experience of study in the country of the language taught;
- 2) it is important to encourage HEIs to recognize school work internships related to the teaching subject that were completed abroad in the framework of the study exchange programme;
- 3) development of international faculties in HEIs should be encouraged (EHEA, 2015, p. 13).

Based on these aspects, they have outlined the following ways to enhance the international dimension of teacher training and support professional mobility of educators providing such training:

- 1) an acknowledgement of the importance of this particular student group as well as a commitment to improving the framework conditions, such as national regulation which may hinder the mobility of teacher training students;
- 2) an encouragement to higher education institutions to recognize study periods abroad and foreign qualifications in accordance with the Lisbon Recognition Convention, include mobility windows into teacher training curricula and offer joint programmes in the field of teacher training, promote exchange programmes, such as ERASMUS + offering funding for internships as a teaching assistant abroad (EHEA, 2015, pp. 27–28).

As found by Yu. Klymenko (2011), each European country is characterized by certain national differences in the implementation of professional mobility programmes for future educators, which directly depend on the activities of the institutions coordinating these programmes, as well as the statistical and text data provided by the UNESCO (United Nations Educational, Scientific and Cultural Organization), Eurostat (a statistical office of the European Communities), EURYDICE (a research network of European education systems and European educational policy).

According to the DAAD (Deutscher Akademischer Austauschdienst – German Academic Exchange Service) (2018), the countries are divided into three groups in terms of readiness for mobility programmes, which is manifested primarily in the transition to a two-tier education system:

- 1) the countries, where the transformation process is completed (Italy, the Netherlands, Norway, the United Kingdom);
- 2) the countries, where the transformation process continues (Austria, Germany, Poland and Switzerland);
- 3) the countries, where the transformation process has recently started (Hungary, Spain).

It must be noted that the UK is an interesting example in terms of teacher mobility, as it is widely known that the country has one of the most open and transparent recruitment



systems in Europe. In Great Britain, higher education institutions are granted great autonomy in recruitment, where most decisions about appointments to posts are taken at the faculty level. In general, no authoritative permission is required from any higher education institution and, particularly, higher authorities (Byram, & Dervin, 2009).

The partnership between higher education institutions and the participants of the modern labour market is considered important in ensuring the quality of professional training of future specialists and compliance with the requirements of modern employers. Such social partnerships in Ireland, France, Finland, and the UK are a common practice. However, several countries of the European Union have discovered the mechanisms for certain individual cooperation between professional education institutions and companies (Bulgaria, the Czech Republic, Lithuania, Malta, Romania). Some of them have long-standing traditions of social partnership development or are being implemented through EU funded projects (Radkevych, 2017).

Therefore, one can conclude that professional pedagogical mobility has positively affects the quality of higher education and the development of higher education institutions and consequently enhances the cultural level of the population in general. The possibility of living and studying in another country provides future educators with new and significant cultural, social and academic experience and creates opportunities for their professional and personal development. As a result, this increases their competitiveness in the international labour market and employment opportunities.

Professional pedagogical mobility plays an important role in developing and maintaining a democratic culture. Professionally mobile teacher students and teachers also contribute to the internationalization of education. Professional pedagogical mobility of modern educators is a prerequisite for teacher student mobility, as it creates atmosphere of trust and partnership between higher education institutions and is necessary for closer cooperation and recognition of study abroad. Professionally mobile teacher students and educators provide higher education institutions with new views that cause the reconsideration of the established traditions and methods. Thus, professional pedagogical mobility provides allows developing academic excellence through new contacts and attitudes, as well as comparison and development of education systems. In this open environment, it strengthens both international cooperation and interconnection, as well as enhances the quality of higher education and research. The experience of professionally mobile specialists is introduced to society and contributes to its development. The individuals who have acquired some experience of living in other countries are eager to eliminate prejudices, cultural and language barriers between people, countries and cultures.

CONCLUSIONS

Therefore, professional pedagogical mobility in the European context is targeted at culminating the personality of teacher students – future educators, since their professional and personal development directly affects the next generations, namely their students and followers. In this regard, it is extremely imperative to constantly update the ways to nurture and enhance future educators' motivation to gain valuable professional experience in the countries other than a permanent residence or workplace. As a result, they will be able to share this experience, strive for high-quality teaching, search for more effective ways of enhancing the quality of the education process.

Based on the obtained findings, the following recommendations can be outlined to enhance the quality of professional pedagogical mobility of future educators in Ukraine:



- 1) it is imperative to discover novel approaches to designing the content of mobility programmes in higher education institutions in Ukraine;
- 2) it is essential to establish fruitful partnerships with foreign higher education institutions, in particular European ones, since this will effectively contribute to Ukraine's higher education integration into the European Higher Education Area;
- 3) it is important to discover some effective ways to fund mobility programmes for educators from the state budget;
- 4) it is recommended to introduce specialized courses of study on professional pedagogical mobility so that educators may acquire all necessary information about the benefits of such experience and the possibility of choosing the most relevant internships;
- 5) it is vital to introduce additional professional benefits to the educators who regularly attend advanced professional courses, seminars or forums not only abroad but also throughout the native country.

Further studies should be aimed at disclosing the mechanisms to enhance external and internal factors in developing and strengthening the partnership between higher education institutions in European experience.

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ANALYSIS OF OCCUPATIONAL EXPOSURE INCIDENT AMONG ENGINEERING STUDENTS DURING INDUSTRIAL TRAINING IN NIGERIA

ABSTRACT

Occupational training is a crucial feature in enhancing workforce efficiency and the expertise involved in any profession. This is carried out through a variety of ways such as institutional training, basic instructions, excursions, industrial training, laboratory lessons, workshop operations, field studies, intensive problem-solving based seminars, personal contacts with experts and various “extempore modus operandi” in one's chosen profession, and extracurricular activities. This study analyses the associated occupational exposure incidents of Nigerian engineering students during their 6-month industrial work experience. Data were collected using a pre-tested, self-administered questionnaire having 5-point Likert scale and closed format. The defined conceptual basis and aim of the study guided the questionnaire development. These include employer imposed factors, job/work factors, and trainee (student) factors. The analyzed data showed that the level of occupational exposure incidents observed among Nigerian engineering students in their places of attachment was minimal. However, the observed levels of occupational exposure in this study were a result of uncontrolled hazards which cause occupational diseases among industrial trainees (students). This goes to state that appropriate basic safety practice which is one of the major work ethics in engineering profession should be given utmost consideration by all concerned parties to ensure reduction of hazards in work environment to its barest minimum.

Keywords: *exposure, student, training, occupational, engineering, industrial trainee, hazard, Nigeria.*

INTRODUCTION

Engineering education all over the world is based on the fact that practical learning and application of scientific knowledge in engineering are vital. These involve a range of tutelage activities in schools as well as work experience both in formal and informal



settings. The paramount nature and act involved in students' work placement oblige active participation of students in particular range of practical tasks or duties other than merely observing other employees or the trainers at their specific tasks (Dodge & McKeough, 2003; Noor et al., 2015; Fauzi, 2013; Kofli, 2012; Ayarkwa, 2012; Norazah et al., 2012). Active involvement of students to the daily routine and operational activities in the work environment where they are employed for the practical knowledge exposure just like every other employee but with particular emphasis on the learning aspects of the experience is called work experience/placement or industrial training. Industrial training or work-based learning opportunities presume positive effect in career development and preparation of the trainees (Kofli et al., 2012; Mat et al., 2011; Paisey & Paisey, 2010; Muda, et al., 2010; Omar et al., 2008). Empirical evidence collected by researchers showed that opportunities inherent in industrial training are of mutual benefit to both the establishment offering the training and the trainee (Mat et al., 2011; Paisey & Paisey, 2010; Muda, et al., 2010; Fallows & Steven, 2000; Maelah et al., 2012). This implies that it takes a proper and ample commitment of both parties to the training course for effective result to be achieved.

Taking up an occupation or work either as a full-time worker, part-time worker or an industrial trainee within any organization simply implies working under the terms or conditions which that organization imposes (Lowden et al., 2011). It includes human nature, technical nature, and environmental impact risks. Workers and trainees in a workplace are both exposed to the unforeseen and sometimes violent events that arise from work situations which may cause cuts/lacerations, burns, fractures/dislocations, contusion, sprains/strains, loss of limb, eyesight or hearing and, in the extreme, of life itself. The type of mishap the workers are exposed to is a function of the potential hazard present in the work environment (Ergor et al., 2003; Kalejaiye, 2013). Potential hazards due to occupational exposure in the workplace could be without presence of a physical injury. On the other hand, occupational exposure may result in acute, immediate or chronic occupational ailments (Azodo & Adejuyigbe, 2013), which the observances of necessary safety precautions can reduce to a minimal level.

Safety precautions and observances which necessitates accident-free workplace and effective operations in the work environment especially among trainees (students) seem to have little or no substantiated support in the research literature. Prior studies on students' industrial work experience focused on the positive and negative aspects of occupational proficiency experienced by students during industrial training (Ayob et al., 2013); strengths and weaknesses of industrial training stakeholders in actualizing the aim of the programme and what can be done to improve the system; advantages work placements offer (Bowes & Harvey, 1999; Mason et al., 2003); importance of work placement in development and enhancement of students' professional skills and employability (Ab Rahman et al., 2009; Kagaari, 2007; Xiao, 2012; Pool & Sewell, 2007; Harvey, 1999; Davies, 2000; Smith et al., 2009; Alexander et al., 2012; Rodzalan & Saat, 2012). Occupational training is not limited to having vocational and professional proficiency and competence in handling tasks obtainable in one's profession. Harris et al. (2013) explicitly stated the responsibility of engineers concerning issues affecting health, welfare, and safety of the public. It is vital that acquaintance and compliance with the basic safety practices in different job requirements procedure in engineering profession remain the paramount basis in the engineering students' training (Dodge & McKeough, 2003; Harris et al., 2013).



THE AIM OF THE STUDY

With the fore-knowledge of occupational health and safety challenges in Nigeria based companies (Iden, 2010; Okojie, 2010; Idoro, 2011) and the role that the sector plays in enhancing students' occupational training, this study was conducted to examine the associated occupational exposure incidents of Nigerian engineering students during their 6-month industrial work experience period.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

The problem under research was thoroughly studied by M. Ab Rahman et al. (2009), A. Alexander et al. (2012), J. Ayarkwa et al. (2012), A. Azodo & S. Adejuyigbe (2013), C. Harris et al. (2013), G. Idoro (2011), P. Kalejaiye (2013), M. Omar et al. (2008) and other scholars.

This cross-sectional study was conducted among engineering students from two selected Federal Universities in Southern (Edo and Ogun states) Nigeria. The population sample for this study comprised final year undergraduate engineering students of five years engineering studies in the country, who have according to the curriculum duly participated in the SIWES programme. Before the study was conducted, it was ensured that the SIWES programme defense has been conducted in all the departments in both schools selected as case studies. The aim and the conceptual basis of the study were explained to the participants whose consent was demonstrated in responding to the questions in the questionnaires. Participation was voluntary. The survey instrument used as data collection tools for this study was a self-administered questionnaire with 5-point Likert-type scaling (ranging from 1 as strongly disagree to 5 as strongly agree) and closed format questions. The questionnaire was designed in reference to the defined conceptual basis and aim of the study. Item selection and adaptation for the study was compiled after a broad-based consultation of the related literature. The defined conceptual basis for the development of this questionnaire was based on the following; employer imposed factors: job/work factors, and trainee (student) factors. These were extensively classified and assessed as availability, provision and usage of the personal protection equipment (PPE), machine/equipment condition in the place of industrial training, hazard exposure, injury, characteristics of the injuries and reasons for the incidents. Students filled out the questionnaire individually with the administrator.

The suitability of using the items selected for this study was ascertained by industrial safety and ergonomics experts, through a series of item modifications and adjustments for the theoretical content, suitability and questionnaire functionality. Afterward, the questionnaire was pre-tested for reliability few weeks to the data collection with a sample of fifteen engineering students randomly chosen from one of the schools selected as proposed study population with an equal distribution sample of three questionnaires for each of the engineering departments in the school. The Cronbach's alpha computed to ascertain internal consistency of the data collection tool gave an output of 0.87. The interpretation of the Cronbach's alpha computation according to the rule of thumb by George and Mallery (2003) (> 0.9 (Excellent), > 0.8 (Good), > 0.7 (Acceptable), > 0.6 (Questionable), > 0.5 (Poor), and < 0.5 (Unacceptable)) is an indication that the research tool has good reliability. The data obtained were analyzed and tabulated using the Statistical Package for the Social Sciences (SPSS) 16.0.

RESULTS

Demographic characteristics of respondents. The sample population interviewed using the designed questionnaire comprises one hundred and thirty-one engineering students, the majority of which were males (90.1 %). The age range of the study participants covers from 19 to 30 years, with mean age value of 23.74 years. The marital status distribution was single (96.9 %) and married (3.1 %).



Occupational exposure circumstances and conditions at the places of industrial attachment. The analysis of data showed that (use PPE during SIWES) 44.3 % of the participants never complied to safety measures throughout their period of attachment, 16.3 % rarely did, 19.1 % and 10.7 % sometimes and often did respectively. It was only 9.2 % of the participants that always complied to them. Safety gadgets provided in some establishments were not up to standard and the PPE were shared among the workers and trainees in some places. Enlightenment concerning hazards associated with each operation involved in the use of machines was an observed condition that leads to occupational exposures among the students in the places of attachment. Ensuring that exposed or protruding parts of machines and equipment are covered during operation, good maintenance culture and discard of old and dilapidated machines are necessary for achieving safety in working environment. The analyzed data also showed that 9 (6.7 %) and 20 (15.3 %) of respondents strongly agree and agree respectively that in their places of industrial training, machines were old and equipment poorly maintained. This agreed with B. Bolaji and S. Adejuyigbe (2012) that poor maintenance is a challenge in Nigerian industries, thus resulting in a frequent breakdown of the production machines. There is the tendency of poorly maintained equipment or machine to malfunction and cause accident thereby exposing workers to unnecessary hazards. Good maintenance culture is imperative to the working life and necessary to keep the workers, equipment, and machines in proper and safe operating conditions (Khurmi & Gupta, 2010).

Students undertaking their industrial training in any establishment are expected to work according to the rules and agreement terms of the place where they are employed for their industrial training (Adeogun & Okafor, 2013). Likewise, it is expected that the human nature, technical nature and environmental impact risks prevailing in the establishment should be in compliance with the operational standard for the programme to thrive. The vast involvement of different establishments that fundamentally deal with engineering projects provides inestimable work exposure to the students (Ayob et al., 2013). According to J. Garrick et al. (2004), hands-on experience prevalent in industrial training makes learning experience and knowledge more appreciative due to the creative and innovative approaches utilized in problem-solving. Hands-on exposure or real-world confrontation furnishes the students with an overall of on-the-job experience and career exposure in the engineering profession. However, contrary experiences do happen in the course of students' training experience (Ayob et al., 2013). The challenges and exposure in engineering work environment are more complex and extensive compared to school environment. Every engineering work environment contains some potential hazards. The potential hazards in work environment often present themselves in workers' or personnel injury, loss of production and damage to machines, tools, and equipment. All the same, these hazards could be avoided through proper safety observances (Khurmi & Gupta, 2010). The type of personal protective equipment used in a place of work is pertinent to the category of work and nature of exposure involved. Being safely ready is always advisable before entering the job site.

Occupational health and safety challenge is a long-standing issue in Nigeria. Research findings (Iden, 2010 and Okojie, 2010) showed that a few companies such as big multinationals who run the policies constituted in their countries of origin are the only organizations that recognize occupational health and safety in Nigeria. G. Idoro (2011) added that there are no reflections of contractors' management efforts in Nigeria on occupational health and safety in their scope of operations which results in high accident and injury rates



witnessed in the Nigerian construction industry. Weaknesses and ineffective management of occupational health and safety is a gross challenge, in spite of the existence of system responsible for ensuring health and safety in the nation (Adeogun & Okafor, 2013). Literature revealed that occupational accidents are relatively higher among young workers within the age limit of 15-24 years (Damen, 2013). The observation in this study was found to be in line with M. Damen et al. (2013) as the mean age of the participants in this study falls within the same range. The occupational exposure factors observed in this study include inadequate training and supervision, inexperience, lack of awareness, the pressure to work fast and carelessness (Table 1).

Table 1

Conditions leading to occupational exposures

Characteristics	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Poor/No enlightenment of hazards associated with each operation by my employer	2 (1.5)	15 (11.5)	13 (9.9)	57 (43.5)	44 (33.6)
Poor communication/ relation in the place of attachment	64 (48.9)	43 (32.8)	12 (9.2)	9 (6.9)	3 (2.3)
Unsafe equipment	5 (3.8)	17 (13.0)	6 (4.6)	20 (15.3)	78 (59.5)
Old and poorly maintained equipment	9 (6.9)	20 (15.3)	26 (19.8)	44 (33.6)	31 (23.7)
Inadequate training and supervision	3 (2.3)	16 (12.2)	13 (9.9)	25 (19.1)	70 (53.4)
Inexperience	13 (9.9)	26 (19.8)	13 (9.9)	14 (10.7)	58 (44.3)
Lack of awareness	5 (3.8)	21 (16.0)	16 (12.2)	22 (16.8)	60 (45.8)
Pressure to work faster	5 (3.8)	25 (19.1)	12 (9.2)	21 (16.0)	61 (46.6)
Carelessness	10 (7.6)	14(10.7)	12(9.2)	25 (19.1)	61 (46.6)

This also complies with documentation of EASHW, 2009 which expatiated widely on the variety of age-related factors such as lack of experience, skills, training, risk awareness, knowledge, maturity and speaking out.

Nature of student occupational exposures. The prevailing nature of exposures witnessed among the students includes sprain/ strain, burn, fracture, contusion, temporal hearing loss, cuts, eye defect, musculoskeletal disorder and electric shock (Table 2). It will be agreed from the result obtained in this study that circumstances and conditions leading to these occupational exposures in the places of attachment, explained above, are majorly human factors owing to non-compliance with safety rules. This agrees with A. Kumar and P. Sinha (2008) that human error plays a major role, if not all, in most accidents witnessed in work environment. The study (Kumar & Sinha, 2008) lists various phases in which human factor manifests in occupational incidents, e. g. system specification, development, and operation. This implies that proper evaluation of various risks involved in job specifications in the workshop, and appropriate implementation and adherence to the safety rules by all the stakeholders is a determining factor in achieving absolute safety in the work environment (Azodo, & Adejuyigbe, 2013).



Table 2

Characteristics of student occupational exposures

Characteristics	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Sprain/strain	12 (9.2)	27 (20.6)	10 (7.6)	29 (22.1)	51 (38.9)
Burn	3 (2.3)	7 (5.3)	10 (7.6)	32 (24.4)	76 (58.0)
Fracture/dislocation	8 (6.1)	9 (6.9)	4 (3.1)	34 (26.0)	74 (56.5)
Contusion	7 (5.3)	28 (21.4)	5 (3.8)	28 (21.4)	61 (46.6)
Temporal hearing loss	1 (0.8)	5 (3.8)	12 (9.2)	30 (22.9)	77 (58.8)
Cuts	12 (9.2)	31 (23.7)	3 (2.3)	24 (18.3)	59 (45.0)
Eye defect	9 (6.9)	16 (12.2)	4 (3.1)	25 (19.1)	75 (57.3)
Musculoskeletal disorder	5 (3.8)	5 (3.8)	5 (3.8)	32 (24.4)	81 (61.8)
Electric shock	2 (1.5)	11 (8.4)	4 (3.1)	28 (21.4)	84 (64.1)

CONCLUSIONS

The skills and knowledge engineering students require to fulfill the future requirement as professionals in different areas of expertise depend on what they have been exposed to today. Industrial training gives students an in-depth development in an engineering career and much needed professional engineering identity. If students are not properly trained in terms of professional ethics, skills and knowledge, safety observances, etc., there will appear a deficit of engineering profession in solving problems. Establishments where students had their industrial training expose some unsafe practices and operations, which resulted in occupational exposure among students. It is therefore essential that drastic steps should be taken to ensure strict adherence to work and safety rules in students' work placement.

This study therefore suggests further studies on assessment of work-related hazard identification, probability analysis, deterministic approach in estimation of consequences for various hazards and risk analysis in the diverse engineering courses and disciplines for more effective occupational training of industrial trainees.

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ELECTRICAL ENGINEERING EDUCATION IN INDIA: PAST, PRESENT & FUTURE

ABSTRACT

The present paper deals with the issue of Electrical Engineering, particularly its impact and standard of education in India from its initiation till present date. We have explored the transition of Electrical Engineering from disciplines of science to a discipline of engineering and technology. A comprehensive study of Electrical Engineering education framework in India at various stages has been done along with a comparison of educational institutes among BRICS nations, namely Brazil, Russia, India, China and South Africa. We have also acknowledged Electrical Engineering as an important domain of engineering and technology. Indian Government's efforts to improve the quality of Electrical Engineering education in India through internet based interactive online tools and its endeavors to decrease the rising levels of greenhouse emissions for the betterment of our environment has been appreciated in this paper. We have analyzed a plethora of Electrical Computer Aided Design (ECAD) simulation tools, available for the welfare of electrical engineering academia, as well as industry based electrical engineering applications. Electrical Engineers are destined to play a decisive role in the socio-economic future of India and the world, as they have been doing this since the 19th century. Keeping this fact in mind, we have decided to refer to the present employment opportunities available in India covering the private sector as well as the public one. The role of renewable energy in the creation of numerous sustainable jobs for the already huge and exponentially growing youth population of India has a mention in this paper. In conclusion we have formulated some recommendations to educational institutes and Indian Government which will help Electrical Engineering academia-industry flourish in the near future.

Keywords: *Electrical Engineering, Technical Education System, Engineering Education in India.*

INTRODUCTION

Human civilization's foray into the world of electricity began as early as 600 B.C.E when Thales of Miletus, a Greek philosopher, discovered static electricity by rubbing fur on substances such as amber. Since then the harnessing and utilization of electricity has



been the bedrock as well as the driving technology behind human civilization's quest to better itself. However, it wasn't until 1800 that the first breakthrough was provided by Alessandro Volta when he invented the electrical battery. Electricity soon began to influence the mannerisms of human life with Francis Ronalds' building the first working electric telegraph in 1816, Pavel Yablochkov inventing the electric carbon arc lamp in 1876 and Alexander Graham Bell inventing the telephone in the same year (Bell, 1876; Borisov; 2016; Thue, 2016). Early electrical inventions and discoveries were concerned with 'electrification' where fossil-fuel powered devices such as lamps and generators were replaced with more efficient electrical alternatives. This trend would continue into the late 19th century and early 20th century when electric railway locomotives started replacing conventional coal and fossil fuel powered railway locomotives. The American Institute of Electrical Engineers (AIEE) was founded in 1884, in New York City, USA. Its founders included Nikola Tesla, Thomas Alva Edison, Elihu Thomson, Edwin J. Houston, and Edward Weston. These personalities had already been involved in related fields such as physics, chemistry, and mechanics and decided to promote, explore and discover the new field of Electrical Sciences along with its industrial applications through AIEE. We witnessed two great minds competing against each other in the late 1880s and early 1890s with Thomas Edison's direct current on one side and George Westinghouse's alternating current on one side. George Westinghouse's alternating current won the battle as it proved to be an inexpensive and more efficient model for the utilization of electricity (Keithley, 1999; Seely, 1999).

The 20th century witnessed mankind's first modern war, The First World War, and naval vessels could then use precise electrical signaling lamps in order to communicate with other ships instead of the vague flames and flares, Electric lamps also enabled these ships to communicate with the help of codes, thereby outwitting enemy ships. Pioneers of war strategy found defensive capabilities in electric searchlights which could be used to detect enemy aircraft during night time. Radio became an indispensable part of war for it could then be used to transmit voice rather than code which was made possible by electron tube, oscillator and amplifier. Even before the United States entered World War 1 its scientists had developed a two-way radio system for aircrafts which could exchange radio signals over a range of 160 miles. This technology proved invaluable in the development of air traffic control several years later. In the year 1918, Kurt Huldshinsky found the solution for the problem of rickets which plagued children of Berlin through mercury-quartz lamps which emitted ultraviolet light. Years later researchers found out that vitamin D was necessary to produce calcium in bones, the process which was initiated by ultraviolet light (Holmøy, & Moen, 2010).

India stands second on the list of most populous nations, seventh on the list of the largest countries by total surface area and third on the list of the largest economies by Purchasing Power Parity (PPP). According to India's most recent census (2011), it has a populace of 1.2 billion and counting with 74 % of its occupants being classified as literate (Khare et al., 2015). India has one of the largest populations of young generation in the world. Today India has 29 states with seven union territories. Introduction of electricity in India began with the establishment of Calcutta Electric Supply Corporation (CESC) on the 17th of April 1899 (Sarkar, 2015). The first concrete step towards urban electrification in India was taken soon after the introduction of electricity when Harrison road in Calcutta became the first electrically illuminated street in India in 1891. As soon as the concept of electrical power was introduced in Calcutta it started replacing horse driven trams, gas-



illuminated street lighting and fossil fuel powered motors which were used for industrial purposes by 1920 (Sarkar, 2017). The idea of generating electricity via force of running water was first implemented in 1882 at Niagara Falls, USA, by 1887. This technology was implemented near Darjeeling through Sidrapong Hydroelectric Plant. Work commenced on a Hydroelectric Powerplant at Beadon Falls, Shillong, in 1921. In October 1923 Shillong witnessed electric illumination (Singh, 2015). India has taken rapid strides in the field of electrical technology in terms of research and development, as well as electrification since its independence. While 94 percent of Indians living in urban areas have electricity, only 67 percent in rural areas have access to electrical facilities. However, with the implementation of several nationwide rural electrification schemes such as the Deendayal Upadhyaya Gram Jyoti Yojana (DUGJY), which absorbed the erstwhile Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), the latter statistic is set to increase. The electrification of rural areas has been one of the top priorities of the Indian Government since independence, as investment in rural electrification results in numerous economic benefits, as well as social development since 68.84 % of India's population resides in rural areas (Palit, & Bandyopadhyay, 2017).

THE AIM OF THE STUDY

Our study is aimed to find the prevalent status specific to electrical engineering field and electrical engineering education in India, its impact on the present and future socio-economic landscape of our country. We have also outlined the steps taken by the Indian Government in promoting and exploring various aspects of Electrical Engineering such as renewable energy. The changing scenario of automotive industry from conventional fossil fuel-based engines to electric engines presents a golden opportunity for electrical engineers in India. Also, the booming sector of renewable energy in India is generating employment for undergraduate & postgraduate students (Bajpai, & Kidwai, 2017).

THEORETICAL FRAMEWORK AND RESEARCH METHODS

The problem of electrical engineering education has been covered by many researchers (C. Canizares, A. Chakraborty, Z. Faur, V. Murti, M. Roy, M. P. Singh, F. Terman, W. Thue et al.). The principles of this research are to collect data related to electrical engineering education associated with its status in India from the technical institute in India. Similar type of work has been performed by the researchers in the field of control, production, manufacturing, industrial, renewable engineering. Data for subjects in courses related to RF and Microwave Engineering has been sourced from websites of regulating bodies concerned with Engineering and Technology, such as All India Council for Technical Education (AICTE) and University Grants Commission (UGC). Syllabus for courses concerned with Electrical Engineering has been analyzed from website of National Institute of Technology-Tiruchirappalli while syllabus for PG courses in Electrical Engineering has been scrutinized from webpages of various Institutes of National Importance. The obtained information has been processed with the help of such methods as deduction and induction, synthesis and analysis.

RESULTS

There exist a total of 4587 Polytechnic institutions in India which offer a Diploma in Engineering Degree across India as of the year 2017–18. This course involves 3 years/6 semesters and covers 25–30 theory subjects, 10–15 laboratory subjects and a final year project. Students must pass their 10th board exam to be considered for a Diploma in Engineering Degree. Undergraduate degrees in engineering and technology are provided by a total of 4397 institutions in India as of the year 2017-18. Minimum criteria to be eligible for an undergraduate degree in engineering or technology is that students must pass their 10+2 board exams and a national level Joint Entrance Exam (JEE) which is held in two stages – a main stage and an advanced one. Performance of a student in JEE along with



their 10+2 results are used as a measuring scale for admissions to the country's Institutes of National Importance, solely dedicated to engineering and technology. They include Indian Institute of Technology (IIT), National Institute of Technology (NIT), Indian Institute of Information Technology (IIIT) with some other technical premier universities & institutions (AICTE Report, 2017). India has 29 states and most of these states conduct their own entrance examination for UG programs offered by institutions under their jurisdiction. Several private institutes conduct their own entrance exams in conjunction with JEE for admissions to undergraduate programs for engineering or technology. A national level Graduate Aptitude Test in Engineering (GATE) is conducted by any one of the IITs for admission to post-graduate engineering or technology programs. Upon passing the GATE cut-off, a candidate is also required to pass an interview held by the IIT to which he has applied for post-graduation. GATE score-card is the measuring scale for admissions in post-graduate technology or engineering programs offered by the country's Institutes of National Importance dedicated to engineering and technology. Admissions to doctoral programs are conducted through several exams held by the concerned institute's department based on the specialization chosen by the candidate after an interview. UG programs such as B.E/B. Tech include 25–35 theory courses with 15–25 laboratory courses along with the final year major project. PG programs such as M.E./M. Tech include 10 theory & 2 laboratory courses with the final semester completely dedicated to the chosen specialization in their specific chosen field (Khare et al, 2014). Financial support is provided in the form of scholarships to meritorious students by institutions as well as the government. Candidates must work under the guidance of a supervisor for the completion of their doctoral degrees which are offered in full time as well as part time versions. Scholarships for students of doctoral degrees are offered by institutions and may demand passing various national level exams to avail grants for their research (Khare et al, 2016).

B.E./B. Tech courses present 10–15 core courses which are directly involved with Electrical Engineering. The rest of the courses are related to electronics engineering, mechanical engineering, instrumentation engineering, and management and, in some cases, humanities (Bajpai et al., 2016). Lab affiliated courses involve student working on electronic devices, DC machines, transformers, power electronics and power systems. First year UG curriculum includes major subjects from science, engineering and humanities background. Basic Electrical is offered as a compulsory subject to all engineering branches during freshman year which covers the inceptive concepts related to electrical engineering. Second year subjects are related to engineering mathematics, electronic devices and basic electrical instrumentations. Third year core subjects are focused on power system, communication system, control system and microprocessor. A couple of electives have been offered by the department which is more focused on the area in which students want to work and design the project. Final year elective subjects include open electives and perpetual electives. Subject related to electronic devices, instrumentation and computer networking have been offered as compulsory subjects. Control Systems, a subject which is more focused on controlling of a system through feedback without any human interaction, is offered as a compulsory subject for Mechanical Engineering and Electronic Engineering UG students (Murti, 1972). In pre-final year, courses related to renewable energy, which include solar energy, wind energy and bio-mass energy, are offered as open elective subjects to other departments' UG students. Final year major project calls for the students working on both core and future aspects of Electrical Engineering such as induction motors, industrial power



consumption, renewable energy systems and wireless power transfer. National Institute of Technology in Tiruchirappalli has indoctrinated a model syllabus for undergraduate programs in Electrical Engineering, inculcating core electrical engineering subjects, mechanical engineering and electronics engineering subjects (EE department, 2018).

Since Electrical Engineering is a mother-branch of engineering, PG courses, such as M.E./ M.Tech, are offered by most institutions across India. Figure 1 displays the variety of M.E./M. Tech offered by Indian Institutes of Technology in various specializations of Electrical Engineering. All Institutes of national importance concerned with engineering and technology offer or plan PG course in Electrical Engineering. Curriculum for PG in Electrical Engineering changes with respect to technological advancements and industry requirements of the time. Second year of PG in Electrical Engineering is devoted to dissertation and project activity in a chosen field. Candidates can apply for doctorate in Electrical Engineering in different subject matters, such as Electrical Energy and Power Systems, Power Conversion, Microelectronics and Nanostructures along with many more fields. Students enrolled in such doctoral programs perform theoretical or real-time practical analysis for their doctoral thesis. Industries investing a substantial amount in research through doctoral educational programs are BHEL, NTPC, Tata Power and many others. This amalgamation of industries and research scholars helps to escalate the growth of Indian economy and create an innovative atmosphere in the country.

Status of EE Education in Indian Institute of Technology

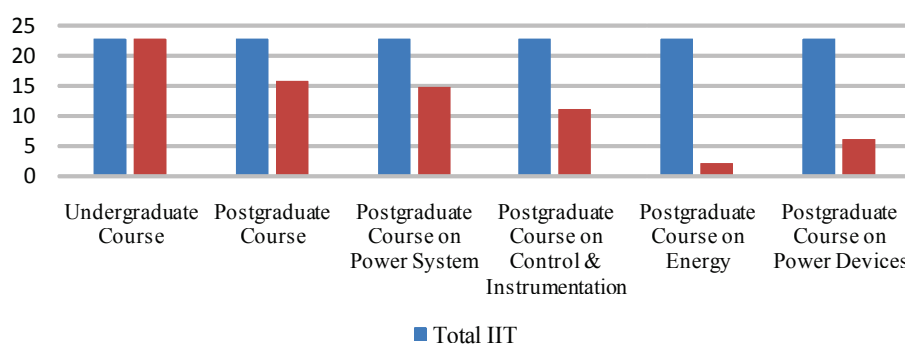


Fig. 1. Status of EE Education in Indian Institute of Technology

First year UG curriculum includes major subjects with science, engineering and humanities background. Basic Electrical is offered as a compulsory subject to all engineering branches during freshman year and covers the inceptive concepts related to Electrical Engineering. Second year subjects are related to engineering mathematics, electronic devices and basic electrical instrumentations. During the third year core subjects focused on power system, communication system, control system and microprocessor are covered. A couple of electives are offered by the department, which are more focused on the area in which students want to work and design the project (Terman, 1976). Final year elective subjects include open electives and perpetual electives. Subject related to electronic devices, instrumentation and computer networking are offered as compulsory subjects.



Control Systems is a subject which is more focused on controlling the system through feedback without any human interaction. It is offered as a compulsory subject for Mechanical Engineering and Electronic Engineering UG students. During a pre-final year, courses related to renewable energy (solar energy, wind energy and bio-mass energy) are offered as open elective subjects to other departments' UG students (Chakraborty et al., 2018). Availability of UG courses for Electrical Engineering in National Institutes of Technologies is shown in Figure 2.

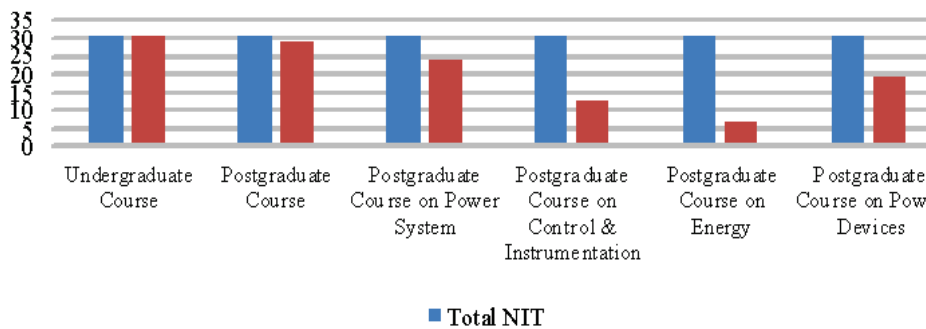


Fig. 2. Status of EE Education in National Institute of Technology

MATLAB and Mathematics are the go-to choice for Electrical Engineering academia-industry for solving mathematical computation problems through simulation (Canizares et al., 1997). Scilab, GNU Octave, Maxima, SageMath are some open source tools useful for solving mathematical computation problems (Khare, 2016). Indian Government has taken a plethora of steps for the betterment of education infrastructure in the country. NPTEL is one of these significant steps. NPTEL is a brain child of IITs and IISc and is funded through Ministry of Human Resource Development (MHRD). By means of NPTEL these institutions have created an online free for all databases of engineering and science subjects (Sheeja, 2018). NPTEL has solved the problem of accessibility to higher education for the rural population of India. Anyone with an internet connection and zeal to learn can access the gold mine of knowledge that is NPTEL. NPTEL offers about 30–35 courses included in the curriculum of Electrical Engineering with their content based on the syllabus prescribed by All India Council for Technical Education (AICTE) in addition to the syllabus of NPTEL-affiliated educational institutions (Bajpai et al., 2015). Disciplines such as Power Electronics, Control and Instrumentation, Power Systems, Power Drives, Energy and other core Electrical Engineering subjects are covered in addition to inter-disciplinary and elective subjects. There are instances of the same discipline being offered by two different institutions which gives students flexibility to choose between two different syllabi. In 2016 Indian Government's MHRD, Department of Space, Doordashan under the Broadcasting Ministry of India's Prasar Bharti coordinated the launch of Direct to Home (DTH) channels which will telecast lectures originating from IITs. If implemented, this project will aid aspiring



engineering students, UG students, PG students and industry personnel in an unprecedented manner (Sharma, 2009). Free and Open Source Software in Education (FOSSEE) is a program initiated through National Mission on Education through Information and Communication Technology (ICT) which is responsible for creating free and open source tools for students and researchers. One of such free and open source software created by FOSSEE is eSIM (previously known as Oscad or FreeEDA). eSIM is an electronic design automation tool ordained for students and researchers in the field of Electronic Engineering and Electrical Engineering (Moudgalya, 2014).

Electrical Engineering is one of the main branches of engineering and as it was in the 20th century, Electrical Engineering has its own distinctive impact on the 21st century. However, with the overwhelming growth of software companies and information technology industry in India, it is very common for Electrical Engineering UG graduates to take up jobs in the exponentially growing information technology industry in India. The first olive branch towards the Indian economy was extended by former Finance Minister Dr. Manmohan Singh in 1991 when he presented a budget which liberalized Indian economy. This opened the doors for private enterprises such as Adani Power to foray into the massive power generation and distribution industry of India which in turn created numerous sustainable jobs for electrical engineers throughout India (Murthy, 2004). Students who are in their final year and students who have completed their UG program in Electrical Engineering can apply for a multitude of jobs in numerous Public-Sector Undertakings (PSUs) offering a diverse range of job profiles upon passing Graduate Aptitude Test for Engineering (GATE) under the condition of successfully completing selection procedures for the PSU that they have applied for. Notable PSUs which recruit through GATE are Bharat Heavy Electrical Limited, National Thermal Power Corporation Limited, and Oil and Natural Gas Corporation Limited. Students can also apply for Indian Engineering Services through Engineering Services Examination (ESE) which is considered one of the most onerous exams of India and offers elite job profile for its postgraduate students. Indian Défense Service of Engineers, Indian Railway Service of Electrical Engineers and Indian Naval Armament Service are some reputable organizations which recruit electrical engineers through Engineering Services Examinations. India became committed to bringing down greenhouse gas emissions when it became a signatory to the Paris Climate Agreement. This is the second olive branch extended to the Electrical Engineering community of India. India plans to reduce its reliance on thermal energy by replacing it with clean renewable energy. Jawaharlal Nehru National Solar Mission (JNNSM) is a project dedicated to generating 100 GW of electricity through solar power which will generate numerous sustainable jobs for electrical engineers in India (Saraswat et al., 2018). Electrical engineers of India will also play a leading role in the utilization of India's 7500 km long coast line which is being capitalized for installation of Wind Energy farms (Chari, 2010). Indian Government's National Action Plan on Climate Change is dependent on electrical engineers for they are considered the ones who can bring success and positive socio-economic change in India.

We have used the latest update of Quacquarelli Symonds (QS) ratings to determine the position of Indian engineering and technology institutions in comparison with BRICS countries. China leads the way in terms of offering high quality engineering and technology education as it is apparent in the QS rankings. Institutions from the People's Republic of China occupy the first five positions, namely Tsinghua University, Peking University, Fudan University, University of Science and Technology of China and Shanghai Jiao Tong University



in the given order. These rankings are an indication of how systematic and productive China's academia-industry relationship is, they also are an ode to China's manufacturing policy. Indian Institute of Science-Bangalore is the sole representative of the world's second most populous nation in the Top-10 positions of these rankings, signaling that even though concrete steps have been taken by the Indian Government to provide quality education to its youth, it will require more efforts to improve its ranking when compared to BRICS nations as well as other nations of the world. Similar to India, Russia and Brazil also have a single representative in the Top-10 educational institutes of BRICS nations in the form of Lomonosov Moscow State University and Universidade de São Paulo respectively. South Africa is represented by University of Cape Town at the 14th position.

CONCLUSIONS

Having conducted thorough research we came to the conclusion that Indian Government should make it mandatory for institutes and industry to coordinate with each other for the betterment of the country's economy and students' future. A healthy and highly functioning academia-industry relationship will complement the rapidly growing manufacturing industry in India as well as assist "MAKE IN INDIA" to become an astounding success. We also urge Indian Government to provide adequate funding to the world's 4th largest Ph. D holder population so that India can keep up with other countries in terms of research and development innovation.

Electrical Engineering is a core engineering branch which is vital for other engineering branches to flourish and is considered an evergreen branch by aspiring engineers. It is imperative for electrical engineers to use their ability as much as possible to bring positive socio-economic change to the country. Electrical Engineering academia and industry have done a lot to adapt to changing technological and economic scenarios and continue to be the force for good in the society.

India derives most of its electricity needs from fossil fuels. However, with the implementation of Jawaharlal Nehru National Solar Mission launched by India's former Prime Minister Dr Manmohan Singh India is moving towards a future where renewable energy technology will take over thermal energy. The authors of this paper would like to emphasize the role of electrical engineering students in the successful implementation of renewable energy technology in India. Digital India is an ambitious scheme launch by the Government of India which aims to spread digital literacy and smart ways of doing day to day regular activities using digital techniques. One of such components of this program is the implementation of Smart Grids. Electrical Engineers of India have contributed towards research and development of smart grids, Tata Power Delhi Distribution is an organization which is committed to provision of smart grid services and employs electrical engineers. Electrical Engineering Academia should include elements of cybersecurity and data privacy in order to help the upcoming generation of electrical engineers in India to actively contribute towards the development of smart grid technology in India. Indian Institute of Technology-Kharagpur and Indian Institute of Technology-Madras are working in collaboration with IBM for smart grid research in which electrical engineers make a significant contribution. Another challenge for Electrical Engineering Academia arises as a result of the rapid spread of renewable energy technology in the automotive sector. As fossil fuel-based internal combustion engines are being replaced by energy efficient induction motor engines, UG and PG curriculum of Electrical Engineering must be revised to accommodate automotive subjects so that electrical engineers adapt to the electric car industry demand. Electrical



Engineering elective subjects in UG and PG programs of Mechanical Engineering should be added, as well as elective subjects concerning automobiles should be introduced in UG and PG programs of Electrical Engineering. All these aspects and ways of their implementation are going to be outlined in our further research.

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MICROWAVE ENGINEERING AS PART OF UNDERGRADUATE CURRICULUM FOR ELECTRONICS ENGINEERING AND AS SPECIALIZATION DISCIPLINE FOR POSTGRADUATE STUDIES IN INDIA

ABSTRACT

The establishment and development of Radio frequency (RF) and Microwave Engineering (ME) from its inception in Electrical and Electronics Engineering to having its own distinct identity in the 21st century has been explored in this paper. Overview of contributions by India to the field of RF and Microwave Engineering have been mentioned. Present paper deals with the field of RF and Microwave Engineering, especially the standard of its education in India. This paper explores the multidisciplinary nature of a RF and Microwave engineer and analyses how an RF and a Microwave engineer can contribute to the industry. Hierarchy and structure of Indian education system concerned with Engineering and Technology have been reviewed along with options and incentive available to aspiring researchers in the field of RF and Microwave Engineering. Nuances of dual degree program have been discussed. Job opportunities in government sector and private sector have been analyzed. A RF and Microwave engineer can find employment opportunities in premier government bodies such as Indian Space Research Organisation (ISRO) and Defence Research and Development Organisation (DRDO) along with private corporations in the rapidly growing telecom sector of India. Handheld device-based apps and web-based database programs



initiated by the Government of India have been discussed. It has been concluded that RF and Microwave engineers will play a decisive role in the development of India. Performance of a RF and Microwave engineer will be a major factor in deciding the magnitude of performance of the Indian Defence Forces. The authors of this paper have suggested some steps to the Government of India which can help RF and Microwave Engineering education reach its maximum potential.

Keywords: *RF and Microwave Engineering, Technical Education System, Engineering Education in India.*

INTRODUCTION

RF and Microwave Engineering involve constituting electromagnetic waves (1GHz-300GHz) for the development of microwave systems, components and circuits. Microwave Engineering's application has helped Human Civilization in numerous ways. It has enabled mankind to achieve efficient modes of communication by improving directivity and reducing antenna size, transmitting messages around the world and perhaps the most seen product of Microwave Engineering is the Microwave Oven which can be found in every third house of any developed city (Pasachoff, 2015).

The foundations of RF and Microwave Engineering are rooted in Electromagnetic Theory. In 1873 a retired Scottish college professor named James Clerk Maxwell unveiled to the world that combining electrical energy and magnetic it was possible for a wave to travel in space. A German scientist by the name of Heinrich Hertz confirmed James Clerk Maxwell's theory which is used by academia-industry till this day. The next major contribution came from an English Electrical Engineer, Oliver Heaviside who adapted Maxwell's equation into a vector-calculus form which then found application in the Transatlantic Cable and Telegraph Systems (Maver, 1918).

India contributed to the development of Microwave Engineering through Sir Jagdish Chandra Bose who demonstrated ringing a bell and blowing up gunpowder from a remote location using wavelengths ranging from 2.5 cm to 5 mm. Sir Jagdish Chandra Bose's work has stood the test of time as an exceptional feat since his work was based on a frequency of 60Hz in the late 19th century (Mukherjee, & Sen, 2007). Russell and Sigurd Varian, popularly known as the Varian brothers, are credited with inventing the Klystron tube. Modification of Varian brother's Klystron tube is utilized to administer millimeter wave power to this day (Caryotakis, 1998). Microwave Engineering got its due attention during World War II when it was applied in weapons development and radar technology. Radio Proximity Fuse was used by participating parties as an efficient way to detonate a shell near its target. Chain Home Radar Air-Defense System can be credited to saving numerous British lives by detecting enemy aircrafts during the Battle of Britain. This incident brought the world's attention to the potential of Microwave Engineering. HAH Boot and JT Randall, two British scientists, are credited for inventing the "Cavity Magnetron" utilizing oscillating principles to generate electromagnetic waves at the magnitude of 1000 times, which is the power of any available microwave generator at that time (Boot, & Randall, 1976). Microwave Engineering technology, developed during World War II, proved to be a boon for civilian applications as Percy Lebaron Spencer invented a household device used for heating food through microwaves, aptly called the Microwave Oven. Key developments in the sphere of RF and Microwave Engineering took place during the turn of the 20th century. Leo Esaki who won the Nobel Prize for Physics in 1973 is a house old name for Microwave Engineers for inventing the Esaki Tunnel Diode while



being employed at Sony Corporation, Japan. JB Gunn's invention of the "Gunn" Diode proved instrumental in the manufacture of pocket friendly microwave oscillators. A Microwave Engineer of the 21st century possesses the conceptual knowledge of an electrical engineer, electronic engineer and telecommunication engineer. A microwave engineer is responsible for application of these concepts in the production and design of Microwave Systems (Sinha, 2018).

India stands second on the list of world's most populated country, seventh on the list of world's largest country and first on the list of largest population in the world. But from a socioeconomic development perspective the key fact is that India has one of the largest populations of engineering students in the world. After achieving independence in 1947 India's leaders supervised the rapid industrialization of the country (Khare et al., 2016). During the late part of the 20th century India witnessed the first telecom revolution and during the early part of the 21st century India is witnessing electronics revolution and second telecom revolution. Indian government's premier initiative "Make in India" program aims to generate employment for local population by calling multinational companies to setup manufacturing stations with research and development units in India. For the success of "Make in India" program it is imperative for microwave engineers of India to contribute their best abilities towards telecommunication sector, electronic sector and defense sector. Robust framework of engineering and technology education in India has allowed a smooth transition from gaining knowledge to their implementation in industrial applications (Bajpai et al., 2016).

THE AIM OF THE STUDY

Our study is aimed at: finding the prevalent status specific to RF and Microwave engineering education in India; collecting data related to RF and Microwave Engineering from various premier institutions of India such as Indian Institute of Engineering Science and Technology and Indian Institute of Space Science and Technology; overviewing hierarchical framework of RF and Microwave Engineering Education in India and scope of job opportunities in public sector as well as a private one.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

The problem of engineering education has been studied by prominent researchers all over the world (S. Bajpai, P. Bharati, A. Chatterjee, S. Khare, W. Maver, S. Sinha, A. Srivastava et al.). The principles of this research are to collect data related to the RF and Microwave engineering education associated with its status in India from the technical institutes in India. Similar type of work has been performed by the researchers in the field of control, ceramic, manufacturing, material science and renewable energy engineering (Srivastava et al., 2018). Data for subjects in courses related to RF and Microwave Engineering have been taken from websites of regulating bodies concerned with Engineering and Technology, such as All India Council for Technical Education (AICTE) and University Grants Commission (UGC). Syllabus for UG and PG courses concerned with RF and Microwave Engineering has been analyzed from websites of Institutes of National Importance in India, while syllabus for Doctoral studies in RF and Microwave Engineering has been scrutinized from Indian Institute of Technology Kanpur's webpage. The obtained information has been processed with the help of such methods as deduction and induction, synthesis and analysis.

RESULTS

As of the year 2017–18, India has managed to establish 4587 Institutions which offer a Diploma in Engineering degree to interested students (Handbook, 2012). Microwave engineering is offered as a compulsory theory subject in some three-year diploma courses (Khare et al., 2015). At the time of writing there are no institutions which offer a Diploma in Engineering degree with respect to RF and Microwave engineering. To be eligible for diploma degree a student must pass their 10th board exam from a recognized educational



board with math and science as compulsory subjects. Students are required to perform exceptionally well in their 10 + 2 examinations from a recognized educational board with math and science as compulsory subjects to be eligible for Joint Entrance Examination held by The Central Board of Secondary Education (CBSE) in two stages – a main one and an advanced one. Performance of a student in Joint Entrance Examination (JEE) is used as the sole parameter for admissions to India's Institutes of National Importance concerned with engineering and technology, namely Indian Institutes of Technology (IIT), National Institutes of Technology (NIT) and Indian Institute of Information Technology (IIIT) along with several other institutions (Bajpai et al., 2016).

Indian Institute of Technology provides engineering education with the concepts of Engineering and their application in industry at par with the best universities of the world. A graduate of Indian Institute of Technology is expected to solve real world problems of social and economic nature. Admissions for a postgraduate program in Engineering and Technology are carried out in 2 stages: 1) a candidate has to pass Graduate Aptitude Test in Engineering held by an IIT every year upon clearing the cut off for his desired institution; 2) a candidate faces an interview for admission in the program that he has applied for (Bajpai, & Akhtar, 2017). Selected candidates for post-graduation in Engineering and Technology are provided with monthly financial assistance of Rs.12400 for 8 hours of work per week.

Postgraduate admission for Engineering and Technology is held by the institute's concerned department. Only candidates with a Cumulative Grade Point Average (CGPA) of 6.00 on a 10-point scale or 60 % aggregate during their Master's degree are eligible. Candidates must pass National level cut-off of GATE, University Grants Commission-National Eligibility Test (UGC-NET), Council of Scientific & Industrial Research-National Eligibility Test (CSIR-NET) and Junior Research Fellowship examinations for admissions to doctoral programs at the institute of their choice (Bajpai & Kidwai, 2017). Financial Assistance in the form of Institute Assistantship (IA) of Rs.25000 is provided for the first two years which is incremented by Rs.3000 for the next two years resulting in IA of Rs.28000. Indian academia works in collaboration with Indian industry in a good way to increase economic growth. This relation extends to providing financial assistance to Post Graduate students and Doctoral Students for their academic endeavours. Public sector bodies such as Council of Scientific & Industrial Research (CSIR), Department of Atomic Energy (DAE), Ministry of Human Resource Development (MHRD), Defense Research and Development Organisation (DRDO), Directorate of Education (DOE) and Naval Research and Army Technology Board are some of the many enterprises that take pride in providing financial assistance to Master's and Doctoral Students in order to accelerate as well as promote the research and development of their academic efforts. Students can opt for diploma in Microwave Engineering from a few polytechnics across India since the structure of Microwave Engineering is composed of common subjects related to Electrical Engineering and Electronics Engineering (Bajpai, & Kidwai, 2018). Set up in 1945, India Council for Technical Education regulates diploma level courses on Microwave Engineering. At bachelor level Microwave Engineering is an integral part of Electrical Engineering curriculum and Electronics Engineering curriculum. Students are introduced to basics of Microwave Engineering through the subject known as Electromagnetic Theory or Electromagnetic Engineering. In second year RF and Microwave Engineering is a compulsory subject for electronics engineers and electrical engineers. Lab work is done in the field of RF and Microwave Engineering involving Esaki tunnel diode, Schottky diode, E-Plane waveguide, H-Plane waveguide, E-H Plane waveguide and other types of microwave systems. For



completion of graduate degree in Microwave Engineering students must assemble a project in their final year. Project work generally involves wireless communication, robotics, remote sensing and home automation. A quintessential course structure for postgraduate program in RF and Microwave Engineering has been provided by Department of Electronics and Communication Engineering, Indian Institute of Technology-Roorkee. During the first year Post Graduate program theory subjects include Microwaving Engineering, Advanced EMFT, Designing of Transmitting and Receiving Antennas. Subjects which constitute laboratory course work involve students' performing experiments in Microwave Lab and Wireless Communication Lab. Elective subjects from the field of Electronics Engineering, Communication Engineering and Applied Sciences, such as Fibre Optic System, Radar Signal Processing, Microwave Imaging, Digital Communication Systems, RF CMOS Transceiver Design and Advanced Applied Mathematics are included. Second year post graduation for RF and Microwave Engineering is entirely dedicated to dissertation of a chosen topic. Dissertation of the concerned student is verified by an examiner from another institution in India. Undergraduate degree program and post graduate degree program are amalgamated to form a 5-year dual degree course in RF and Microwave Engineering, which is provided by some premier Institutes of National Importance concerned with Engineering and Technology.

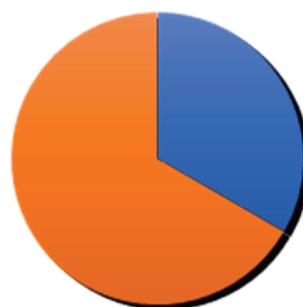
Status of RF and ME in NITs



■ NITs having courses related to RF and ME ■ NITs not having courses related to RF and ME

Fig. 1

Status of RF and ME in IITs



■ RF and ME PG course available ■ RF and ME PG course not available ■ ■

Fig. 2.



Availability of UG and PG programs for RF and Microwave Engineering in India's premier institutes classified as Institutes of National Importance has been illustrated in Figure 1 and Figure 2 respectively.

At doctoral level a student is required to perform theoretical and real time analysis of their chosen topic for doctoral analysis. Indian Institute of Technology (Kanpur) has developed emulation worthy model for research in RF and Microwave Engineering. Areas of specialisation in RF and Microwave include microwave material processing, nanophotonics, nanoplasmonics, printed antennas, computational electromagnetics, wireless power transfer and dielectric resonators.

Considering that RF and Microwave Engineering origins lie within Electrical and Electronics Engineering it is not at all surprising that some part of RF and Microwave Engineering curriculum is the same as Electrical Engineering curriculum, Electronics engineering curriculum and Telecommunication Engineering curriculum. Interdisciplinary relation has allowed RF and Microwave Engineering students to refer to standard textbooks related to Electrical Engineering, Electronics and Telecommunication Engineering from renowned international authors, including Adel S Sedra, DM Pozar, Michael Steer, De Los Santos and RL Boylestad. Engineering students across India often referred to books from international authors for deep understanding of concepts. Technical universities of India, such as Gujarat Technical University (GTU), Rajasthan Technical University (RJTU) and Dr. A.P.J. Abdul Kalam Technical University (APJAKTU) use text books authored by Wali Sandeep, Khedkar Ashok, Joshi Jayshi, Urvashi Shah and M Kulkarni for RF and Microwave Engineering curriculum. National Program on Technology Enhanced Learning (NPTEL) was launched at the end of the 20th century and the beginning of the 21st century. Seven oldest IITs of India in conjunction with Indian Institute of Science (Bangalore) decided to take advantage of India's first Telecom revolution and launch a web-based database of Engineering and Applied Sciences curriculum as prescribed by All India Council for Technical Education. Arrival of NPTEL was and continues to be a blessing for aspiring engineers and engineering students across India. Being a web-based database, NPTEL has saved a colossal amount of spending on infrastructure (Ananth, 2011). The Second Telecom revolution of India during which mobile networks were improved in proportion to mobile data charges being decreased has acted as a force multiplier for NPTEL. RF and Microwave Engineering students have access to video lectures provided by IIT Kharagpur and IIT Bombay on NPTEL. Duration of courses dedicated to RF and Microwave Engineering is generally 8 weeks. Students are subjected to weekly tests, assignments and pan-India online examination. Upon achieving required passing marks a candidate receives a certificate validating the successful completion of his/her course. Some institutions in India offer extra credits to students for successful completion of a NPTEL course.

Ministry of Human Resource Development (MHRD), Government of India in collaboration with All India Council for Technical Education (AICTE) have recently launched Swayam – an online platform similar to NPTEL which caters to school level courses, graduation level courses and post-graduation level courses. Swayam has no age restrictions and can be accessed by anyone with Internet connection. Government of India has also provided the SWAYAM platform with handheld device applications which can be downloaded at no cost from Android Play Store, Apple's I-store and Microsoft's Windows Store (Sahoo et. al, 2018).

Employment opportunities. Public Sector Undertaking which is controlled by the Government of India recruits RF and Microwave engineers through National Level



Graduate Aptitude Test in Engineering followed by a selection procedure including personal interview. Graduate Aptitude Test in Engineering marks form the majority of selection criteria in the entire recruitment process for public sector undertakings. Bharat Sanchar Nigam Limited and Maharashtra Telecom Nigam Limited are major Public Sector Undertakings concerned with telecom sector in India. Both of these corporations recruit RF and Microwave engineers. India's premier institution for development of weapons systems, the Defence Research and Development Organisation (DRDO), recruits RF and Microwave engineers and employs them for various laboratories, mainly Microwave Tube Research & Development Centre (MTRDC), Electronics & Radar Development Establishment (LRDE), Laser Science & Technology Centre (LASTEC), Defence Electronics Research Laboratory (DLRL) and Defence Avionics Research Establishment (DARE). Candidates can also find employment opportunities in Indian Defence Forces Military Engineering Service. Since the Rapid acceleration of Information Technology sector in India the trend has been that RF and Microwave Engineering graduates have abandoned their core branch and opted for widely available jobs in software and consulting corporations (Fig. 3).

Employment opportunities for RF and ME Engineers in Indian Defence Agencies

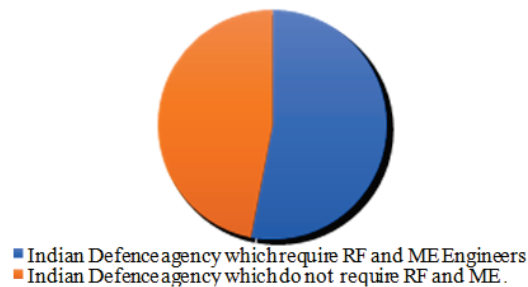


Fig. 3

RF and ME employment opportunities provided by Indian Space Agencies

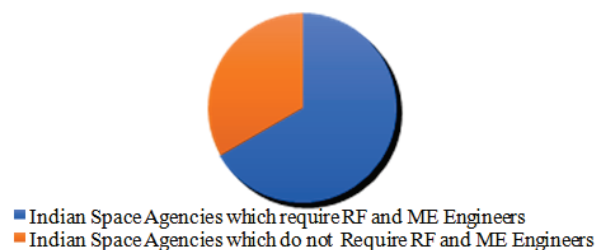


Fig. 4



Indian Space Research Organization (ISRO), widely known as the institute that made headlines for successful launch of its pocket friendly Mars Orbiter Mission (MOM) at the first attempt, recruits RF and Microwave engineers where they render their services in various satellite organizations of ISRO, namely ISRO Satellite Centre (ISAC), Space Applications Centre (SAC), National Remote Sensing Centre (NRSC), Laboratory for Electro-Optics Systems (LEOS) and Indian Institute of Remote Sensing (IIRS) (Fig. 4).

Among private corporations, telecommunication sector in India has the majority of RF and Microwave engineers employed. RF and Microwave engineers in India were also employed by Reliance Jio, a mobile network operator that dramatically changed the face of Telecommunication industry in India by offering 4G VOLTE connectivity at inexpensive rates and competitive prices (Kumar et. al, 2018). RF and Microwave engineers are highly desired and heavily recruited by the telecom sector as India forms the second largest subscriber base with the third highest number of internet users, most of whom access internet on their handheld devices.

It is through the dedication and hard work of RF and microwave engineers that we are at the doorstep of 5G communication. Although 5G communication networks are still under development, their spectrum has been formulated between 6 gigahertz and 100 gigahertz. This range of frequency lies well within the range of applications that microwave engineers have already been working under (Pandey et al., 2015). India has the largest youth population in the world with the rapid advancement of telecommunication networks in the country aspiring engineering graduates to look at RF and Microwave Engineering as a lucrative option to achieve employment.

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CONCLUSIONS

RF and Microwave Engineering plays a crucial role in advancement of weapon systems, military communication systems and civil and communication systems. It is an



emerging field in terms of Engineering and Technology. There are few colleges which provide bachelor's degree in RF and Microwave Engineering. The majority of dream institutions provide a post-graduation degree in RF and Microwave Engineering. Research areas for specialisation in RF and Microwave Engineering include lasers, computational electromagnetics, finite-difference time-domain (FD-TD), technique and metamaterials. Given how fast the defense industry is growing in India, RF and Microwave Engineering presents itself as a possibility of employment for aspiring engineers. The authors of this paper would like to suggest that Microwave Engineering should be offered as an elective subject to Computer Science Engineering and Automobile Engineering students so that inter-disciplinary nature of RF and Microwave Engineering can expand. Special attention should be given to RF and Microwave Engineering with respect to Consumer Electronics with respect to Electronics and Communication Students.

We live in time when Internet of Things has enabled us to spend our regular day to day activities in a very convenient manner. RF and Microwave Engineering Academia should include Internet of Things based subjects in RF and Microwave Engineering UG and PG curriculum with a focus on consumer electronics in order to make the transition from academy to industry easier for the upcoming RF and Microwave engineers. Elective subjects such as Artificial Intelligence and Programming in Computer Science and Engineering should be added in RF and Microwave Engineering UG and PG curriculum. Keeping the Indian Defense industry in mind RF and Microwave Engineering elective subjects should be offered to electrical, electronics and communication engineering branches. Recommendations for practical implementation of the suggested ideas are going to be presented in our further research publications.

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UKRAINIAN AND FOREIGN EXPERIENCE IN APPLYING BIOGRAPHICAL METHOD TO STUDY PROMINENT FIGURES IN PEDAGOGY

ABSTRACT

The article analyzes the term “biographical method”, which consists in the idea of a biography being one’s life journey. Its essence was disclosed through the views of the leading Ukrainian and foreign scholars. The origins of the biographical method as the main tool for studying prominent figures in pedagogy were specified. The article contains the domain-specific classification of biographical sources including autobiographies, biographies, life stories, personal experience stories, surveys and interviews, public and private archival materials, printed and hand-written heritage of authors, memoirs of their contemporaries, etc. Specific attention is paid to the fact that biographical researches can characterize the course of life of a particular figure in pedagogy, the era in which he/she lived and worked, the process of shaping and developing his/her worldview and pedagogical views. Consequently, one can highlight the main stages in the pedagogue’s life, better understand the essence of his/her cultural, educational activities, grasp his/her unique identity, reveal certain patterns in various facts of his/her biography that have caused the emergence and development of particular educational and pedagogical ideas. Based on theoretical analysis of the works by Ukrainian and foreign scholars, it was concluded that the biographical method could determine the influence of society on the development of the individual, his/her life position, values and ideals, different moments of the society’s life at one time period or another, social contexts, rules and norms. It was found that when studying the biographies of prominent figures in pedagogy one should be able to balance the given material on the pedagogue’s activities, the description of his/her works and theoretical analysis and understanding of the trends in the development of his/her views and a reasonable assessment of his/her contributions.

Keywords: *biographical method, biographical studies, historical and biographical researches, pedagogical figure, scientific biography, resources.*

INTRODUCTION

The modern development of historical and pedagogical science is characterized by a constructive, scientifically objective and thorough study of a pedagogical biography and heritage of prominent figures in pedagogy, as well as the Ukrainian and foreign scientific and pedagogical experience. Historical and biographical researches occupy a significant place in the history of science and contribute to personifying the development history of its branches, assessing contributions of the scholars and individuals involved in scientific researches and organization of science. Therefore, the Ukrainian pedagogical thought can be revived and the unity and continuity of generations can be ensured due to a profound study of the Ukrainian pedagogical heritage and a scientific analysis of the Ukrainian pedagogues’ ideas and views.



THE AIM OF THE STUDY

The research aims to justify the views of the leading Ukrainian and foreign scholars on the role of the biographical method in studying prominent figures in pedagogy and to analyze the classification of biographical researches.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

In the context of scientific discourse, the biographical method was studied by such Ukrainian scholars as H. Bielan (2013a; 2013b), V. Onopriienko (2010), I. Rozman (2017), L. Smolinchuk (2013), O. Sukhomlynska (2005) et al. Some significant experience in the field of scientific biographical studies was also systematized by foreign scholars including N. Denzin (1989), P. Dominice (2006), E. Dubas (2009), W. Fuchs-Heinritz (1993), S. Lee (1918), B. Roberts (2002), J. Roos (1997), E. Skibińska (2006).

The current research summarizes the findings obtained by a set of theoretical methods such as induction and deduction (used to collect theoretical and factual material and generalize it), comparative analysis and synthesis (used to specify the content of the main concepts and terms).

RESULTS

One of the priority areas in the modern historical and pedagogical science consists in studying the figures in pedagogy, who represent exceptional pedagogical achievements and contribute to developing views on a holistic pedagogical process. Nowadays, the processes of disclosing pedagogical views of scholars, pedagogues, cultural figures of the past and studying their creative biographies in the context of the historical epoch allow reconstructing the phenomena and facts of historical and pedagogical science. Therefore, the biographical method will be of importance when analyzing the historical and pedagogical phenomena of a certain time period.

The increasing interest of pedagogy in biographical studies is associated with the emergence of new methods for assessing the quality of pedagogical studies. Since the 1980s, many countries (the UK, the USA, Germany, Poland, etc.) have been widely employing the rapidly developing biographical studies, which today serve as a platform for various pedagogical studies.

The biographical method was first scientifically justified by the representatives of the Chicago School of American Sociology in the 1920-30s. It was mostly defined by such traditional concepts in the professional English-speaking community as *biographical perspective* and *biographical approach*. The essence of these concepts was rooted in the method's complexity, which included a set of sociological methods, namely empirical observation, objective analysis of biographical facts, their interpretation and generalization, etc. (Bielan, 2013a, p. 51). Indeed, H. Bielan (2013a) indicates that the biographical method primarily aims to study the life of an individual, connected with his/her immediate environment, microenvironment and his/her subjective views on the life and social reality of his/her environment.

It is found that the term "biography" originates from the Greek βίος "life" and ράφω "record, account" (Online Etymology Dictionary, 2018). The biographers of prominent figures of the past sought to describe the sociohistorical conditions under which one individual or another lived as accurately as possible and to outline the main creative achievements of a particular figure taking into account the factors which influenced the development of his/her personality and views (Bielan, 2013a, p. 51). If successfully performed, these actions allowed the biographers to create rather a clear "portrait in the background", which outlined the widest possible range of probable relations and patterns, thus providing the next generation of researchers with the right to interpret their significance.



S. Lee (1918), the English 20th-century researcher in the field of scientific biography, indicated, "The emergence of a biography can be traced to the beginning of mankind since there always existed the need to satisfy the ancient instinct – the recordative one. People are eager to preserve the memory of those who, by words and deeds, stood out from the crowd, were respected by their contemporaries and are still able to attract the interest of future generations" (p. 10).

Foreign biographical studies focus on prominent figures in a particular field, their roles in the sociocultural environment, experiences, views and contributions to culture or science and set different scientific goals. However, they always provide a holistic picture of their lives, take into account and disclose the interconnection between an individual history and the history of society, present certain culturological generalizations and conclusions. According to the German scholar W. Fuchs-Heinritz (1993), many human sciences in France, Canada, Italy and other countries have acquired an interest in the biographical method since the late 1970s and as a result "research interests of rather different theoretical traditions have overlapped and today represent a well-developed and international area of biographical research" (p. 16).

The Ukrainian historical and pedagogical science relies on O. Sukhomlynska's views on the role of the biographical method in studying prominent figures in pedagogy. "In order to personify and systematically outline the development of the Ukrainian pedagogical thought as a non-linear, multidimensional process of qualitative changes through creative biographies of the pedagogues whose views, beliefs, and ideas have become the driving force behind the overall process of pedagogical science development," she stressed, "it is imperative to be in possession of appropriate tools" (Sukhomlynska, 2005, p. 5).

O. Sukhomlynska (2005) believes that a list of the approaches and methods used to systematically analyze the historical and pedagogical phenomena of a particular time period must include the biographical method. The scholar defines it as a way of processing the sources in which an individual biography and personality of the pedagogue act as a factor in his/her work and reflect or create his/her era. The main function of this method in historical and pedagogical science is rooted in the search for the causes of emergence and development of pedagogical ideas in various facts of the biography and the revelation of those essential, "iconic" moments that allow identifying certain patterns in the accumulation of empirical facts about one individual or another (Sukhomlynska, 2005, p. 5).

In modern practice, the term "biographical method" has a wide range of meanings and senses. H. Bielan (2013a) defines the biographical method as "the leading tool for studying prominent figures in pedagogy" since "it considers pedagogical reality in time and space and discloses the problem in the historical cultural context" (p. 52). According to V. Onopriienko (2010), the biographical method is a specific conceptual approach to studying a prominent figure based on the notion that an individual is a "product" of his/her own biography or history of his/her life, that is "the biography is one's life journey" (p. 133). W. Fuchs-Heinritz (1993) defines the biographical method as a way of measuring and assessing some real life and historical evidence (p. 12). When identifying the biographical method as a way of collecting and using some documentary evidence that describes the turning points of an individual life, the English sociologist N. Denzin (1989) concludes, "it involves some experiences of an individual, a group or an organization in the form through which they can interpret these experiences" (p. 7).

The biographical method in historical and pedagogical science is considered as a combination of ways and means of organizing and conducting researches on individual



biographies based on accumulation, analysis, interpretation of any possible and accessible sources of information. The object of the biographical method is to study a life's journey of a prominent figure and present it in the form of a chronological sequence of the facts from the personal biography, which includes the stages of ideological and spiritual development, professional and creative achievements (Rozman, 2017, p. 98). The subject of the biographical method includes the patterns and mechanisms which determine and regulate the individual's living as a self-sufficient process.

Nowadays the biographical method as a new instrument of sociological research is becoming more and more popular. Also it serves as the basis for a whole new area of biographical studies in the field of sociology in Poland and psychology in Austria. In addition, biographical studies are applied not only to sociological and psychological sciences, but are also transformed into a range of historical, literary, historical and pedagogical science. As a result of these processes there appears a separate field of scientific knowledge about an individual – the biography, whose object of study is a prominent figure together with his/her diverse relationships with society, which is considered in the synthesis of individual and unique and social aspects (Bielan, 2013a, p. 51). As a separate branch of science, the biography acquires an interdisciplinary status and is based on the methodology of such sciences as psychology, sociology, philosophy, history, literary studies and, most importantly, the history of pedagogy.

In the context of the current research, it is important to distinguish another aspect of the biographical method, namely the main biographical sources, which should contain comprehensive and objective information about the main stages in the individual's life. A source base is a collection of systematized and classified sources, which contain some information about the pedagogical past. The source base of biographical studies on the history of pedagogy are scientific, journalistic, historical works, documentary materials (in particular, correspondence, diaries, autobiographies) and other historical and pedagogical sources, which contain authentic informative and substantive facts about the originality and uniqueness of the time period under study (Bielan, 2013b, p. 30).

It should be noted that there is some divergence in the views of modern researchers in the field of sociology and biography on the prioritization of using primary (an oral narrative) and secondary (written, documentary) sources of a biographical material. B. Roberts (2002) considers the biographical material to be any verbal or written narrative made by the individual about the events of his/her life. The scholar believes that under certain conditions "life stories" can be reproduced based on such secondary sources as official documents, letters, memoirs of other individuals, etc. (Roberts, 2002). W. Fuchs-Heinritz (1993) considers oral narratives about one's own life to be the most reliable biographical source (p. 12). N. Denzin (1989) gives priority to documentary sources, namely autobiographies, biographies, obituaries, life stories and stories about personal experience (p. 7). The Finnish sociologist J. Roos (1997) believes that an autobiography as a source of biographical facts is an author's project, which presents the main moments of the author's life through the prism of his/her personal perception (p. 9). Polish sociologists, however, distinguish between the concepts of autobiography and biography. According to E. Skibińska (2006), the autobiography is a product of an individual's activity, which reveals its subjective character and depends on the individual's perception. It is a continuous process immersed in all kinds of contexts, namely temporal, spatial, social and cultural ones. The concept of the biography is interpreted by the scholar as "a life report". The biography contains an objective description



of facts, events and individuals, as well as a description of the subjective values specified in these facts, events and individuals (Skibińska, 2006, p. 330). On the other hand, P. Dominice (2006) argues that both biographies and autobiographies contain a life story, whose author is believed to be its main character. According to this approach, the biography arises from its researcher's inspiration, whereas the autobiography – from the needs of the author himself/herself (Skibińska, 2006, p. 13). According to E. Dubas (2009), the biography is a construction of thinking, which organizes, interprets and gives meaning to the experience gained by the individual throughout his/her life (p. 41). The biography contains memories about life experiences, events and situations experienced by the individual, which are usually rather important and significant since they have influenced him/her throughout his/her life.

Modern researchers include to biographical sources the following materials: official documents of a particular individual, which contain the information about his/her place of birth, education and educational attainments, which have affected his/her further professional realization; reference and statistical documents with his/her biographical data and personal characteristics; genealogical sources: a genealogical tree, family legends; autobiographical materials, which usually contain some authentic information about the origin, merital status, education, career, creative achievements; some family correspondence, which contains some unique information about the individual, his/her acquaintances, interests, activities, hobbies, inner world; scientific and artistic works of the prominent scholars and artists as a form of personal self-expression; memoirs; personal diaries (Bielan, 2013b, p. 30). A complete and objective description of the life of one individual or another will only ensure comprehensive use of all the sources in their comparative and analytical dimension.

Since the main goal of biographical studies in modern historical and pedagogical science is to create an objective genuine portrait of the pedagogue's personal development, one should consider an important role of such components as his/her genealogical origin, family environment and education, family traditions and atmosphere, their influence on the development of his/her worldview; the ways and stages of his/her personality development (places of study, fields of interests, relationships, etc.); the factors in the development of his/her worldview, intellectual abilities, temperament, inner beliefs; his/her interactions with other individuals; the influence of the surrounding individuals or, vice versa, a particular individual on them; the motives of the most famous acts, which have put the individual's name in history; the influence of external factors; the justification of ups and downs in the lives of creative people through certain life circumstances; some significant events in his/her private life (marriage, childbirth), their influence on the main (scientific, creative, social, political) activity; his/her physical and psychological well-being in different periods of life and their influence on some individual episodes of his/her activity; his/her contemporaries' objective and subjective characteristics of himself/herself; his/her financial situation, dependence on financial circumstances and their influence of his/her creative activity (Bielan, 2013b, p. 30). However, all the data can be collected only from reliable, diverse sources, which form the basis of biographical studies in the field of historical and pedagogical science.

It should be noted that one of the components of the studies on a prominent figure in pedagogy is the analysis of his/her pedagogical heritage. This element of historical and pedagogical studies consists in analyzing another sources, primarily the pedagogue's creative heritage, which is represented by journalistic and scientific works (monographs, reports, articles, lectures, reviews, etc.). Such materials as drafts, observation diaries, notes from other scholars' works are also of importance since they justify the evolution of the



pedagogue's views and fully disclose their essence (Smolinchuk, 2013, p. 667). These views are occasionally reflected in the content of school or university textbooks, other manuals for pupils, students or methodological aids for teachers, which reflect the relevant recommendations for the content and methods of teaching and learning. The sources under study can be classified with the help of such theoretical methods as analysis, synthesis, generalization.

In addition, the logic of any historical and pedagogical research always requires a classification of sources. In this case, pedagogical heritage can be classified according to specific domains such as either particular branches of science (the history of didactics, the theory of education, methodology, school education, etc.) or types, levels, fields of education (the history of general and special education; primary, secondary, higher education; vocational education; medical education; military education, etc.) (Smolinchuk, 2013, p. 667). Such an approach to classifying allows researchers to comprehensively and systematically present the history of various pedagogical problems that were of importance to the prominent figure in pedagogy whose biography is under study.

It is also necessary to classify this group of sources in terms of content characteristics, taking into account only scientific researches (monographs, scientific articles, dissertations), promotional works (journalism, popular science publications), educational sources (manuals, textbooks), reference sources (encyclopedias, bibliographical references, dictionaries, etc.), selected sources (collections of documents, publication of works, etc.). Such classifications supplement pedagogues' biographies due to defining the main areas of their activities at different life stages. A chronological approach should be also used to classify different biographical sources since it chronologically presents the processes of shaping and developing the views of the pedagogue under study on a particular problem (Smolinchuk, 2013, p. 667).

CONCLUSIONS

So, having analyzed the works of Ukrainian and foreign scholars, it can be concluded that the biographical method can determine the influence of society on the development of the individual, his/her life position, values and ideals, different moments of the society's life at one time period or another, social contexts, rules and norms. When studying the biographies of prominent figures in pedagogy, one should be able to balance the given material on the pedagogue's activities, the description of his/her works and theoretical analysis and understanding of the trends in the development of his/her views and a reasonable assessment of his/her contribution.

The current research does not disclose all the aspects of the problem. Further researches should deal with the problem of incorporating biographical sources in research activities, as well as applying the biographical method to pedagogical biographical studies.

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**ПРАВИЛА ОФОРМЛЕННЯ І ПОДАННЯ РУКОПИСІВ
(ООНОВЛЕНІ ВІДПОВІДНО ДО МІЖНАРОДНИХ ВИМОГ)**

Проблематика статей журналу охоплює: теоретико-методологічні засади порівняльної педагогіки, сучасні стратегії і тенденції розвитку освіти, вирішення соціально-педагогічних проблем розвитку освітніх систем у **ЗАРУБІЖНОМУ ДОСВІДІ**.

Усі, хто бажає здійснити публікацію в журналі «Порівняльна професійна педагогіка», просимо подавати матеріали до **20 лютого/20 травня/1 вересня/20 листопада**.

Для публікації статті просимо надсилати:

– відомості про автора (ПІБ, місце роботи (назва і адреса), науковий ступінь, вчене звання, адреса для листування, електронна пошта; для аспірантів – ПІБ, місце навчання (назва і адреса), адреса для листування, електронна пошта);

– електронний варіант наукової статті.

ВАЖЛИВО!

Публікації в журналі «Порівняльна професійна педагогіка» здійснюються **АНГЛІЙСЬКОЮ МОВОЮ** (за бажанням автора публікуємо також україномовний варіант статті). Обсяг статті – **8–12** сторінок. Можна замовити переклад Вашої статті англійською мовою.

СТАТТІ, ЯКІ ПЕРЕКЛАДЕНІ ЗАСОБАМИ ОНЛАЙН-СЕРВІСІВ (НА ЗРАЗОК GOOGLE TRANSLATE), НЕВІДКОРИГОВАНІ, АБО НЕ ВІДПОВІДАЮТЬ ЧИННИМ ВИМОГАМ, ДО ДРУКУ НЕ ПРИЙМАЮТЬСЯ І НЕ ПОВЕРТАЮТЬСЯ!

Технічні характеристики: Microsoft Word, шрифт – Times New Roman; інтервал – 1,5; кегль – 14; відступ абзацу – 1,25 см; поля: ліворуч – 2,5 см; праворуч – 1,5 см; зверху – 2,5 см; знизу – 2,5 см.

Обов'язкові складники статті:

- **АНОТАЦІЯ / ABSTRACT** (обсягом **1800** друкованих знаків);
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- **МЕТА ДОСЛІДЖЕННЯ / THE AIM OF THE STUDY**;
- **ТЕОРЕТИЧНА ОСНОВА ТА МЕТОДИ ДОСЛІДЖЕННЯ / THEORETICAL FRAMEWORK AND RESEARCH METHODS** (джерела, на які автор посилається в теоретичній основі дослідження, повинні бути представлені в **ЛІТЕРАТУРІ**; обов'язково вказати методи дослідження);
- **ВИКЛАД ОСНОВНОГО МАТЕРІАЛУ / RESULTS** (виклад основного матеріалу повинен бути чітким, інформативним і демонструвати власні результати дослідження авторів);
- **ВИСНОВКИ / CONCLUSIONS** (у висновках також слід вказати *перспективи подальших досліджень*);
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Вимоги до оформлення літератури в англійській статті викладені наприкінці інформаційного листа і повинні відповідати міжнародному стилю Американської психологічної асоціації (APA).

При оформленні бібліографічних посилань в україномовній статті слід дотримуватися «ДСТУ 8302:2015. Бібліографічне посилання. Загальні положення та правила складання», що набрав чинності 01.07.2016.



Зверніть увагу, що статті англійською мовою мають цифровий ідентифікатор DOI, який надається кожній статті редколегією журналу. Що стосується україномовних статей, автори повинні самостійно вказати УДК.

СТАТТІ ПРОХОДЯТЬ ПЕРЕВІРКУ В МІЖНАРОДНІЙ СИСТЕМІ АНТИПЛАГІАТ.

ЗА ДОСТОВІРНІСТЬ ВИКЛАДЕНИХ ФАКТІВ, ЦИТАТ І ПОСИЛАНЬ НЕСУТЬ ВІДПОВІДАЛЬНІСТЬ АВТОРИ.

Аспіранти подають статті з **рецензією наукового керівника**; автори без наукових ступенів – із рецензією доктора або кандидата наук із відповідної спеціальності. Наукові праці докторів наук друкуються в журналі безкоштовно.

Оплата за статтю здійснюється після повідомлення редколегії про відповідність статті вимогам та дозволу до друку. Вартість публікації однієї сторінки – 60 грн.

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**THE STIMULATION OF STUDENTS' INTEREST IN THE TEACHING
BY COMPETENCY-BASED APPROACH: LATIN AMERICAN PERSPECTIVE**

ABSTRACT

This article presents the results of scientific-pedagogical research, which consisted in identifying, what are the best strategies of stimulation of students' interest in the teaching by competency-based approach studying the works of Latin American scientists. With support in the pedagogic-comparative study the author has found out that in the Mexican education system the competency-based approach has been implemented since 2009 through the new national educational policies and Reform of Basic Education in which documents it is argued that competence means putting in play knowledge, attitudes, skills and values for achieving purposes in certain contexts and situations. One of the key tasks of the teacher is to lead and keep the attention of his/her students towards certain goals. Motivation to learning represents the socio-emotional or psychosocial variables (social identity, attitude to the subject, motivation), involved in learning on par with the educational variables (teacher, methodology, learning context); individual variables (subject learning abilities, aptitudes, needs, personality); socio-demographic variables (student's age, sex, socio-economic and socio-cultural level); sociopolitical context variables (importance in the society of knowledge that provides the subject). The study has showed that the best strategies for stimulation of students' interest in the learning by competency-based approach, following the Latin American scientists, are, among others, modeling, adapting, making the content of the studied discipline "accessible" to the student's needs; developing students' autonomy in learning; promoting conscious learning; establishing dynamic and equitable system of interrelations in the class; creating positive psychological environment; raising the illustrative and dynamic teaching; ensuring the self-control and self-regulation; using the error as part of the learning process (and not as punitive).

Keywords: *motivation in learning, stimulation of students' interest in the classroom, teaching by competency approach, Latin American education.*

INTRODUCTION

In the Mexican education system the competency-based approach has been implemented since 2009 through the new national educational policies and Reform of Basic Education in which documents it is argued that competence means putting in play knowledge, attitudes, skills and values for achieving purposes in certain contexts and situations (Secretaría de Educación Pública, 2011).



THE AIM OF THE STUDY

The aim of this paper is to report the results of comparative scientific-pedagogical research, which consisted in identifying what are the best strategies of stimulation of students' interest in the teaching by competency-based approach studying the works of Latin American scientists.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

It is importantly to note, that to the problem of motivation and the ways of its stimulation close attention pay psychologists and teaching methodologists: B. Ananiev (1969); C. Carnegie (2000); Yu. Galperin (1966); R. Gardner (1985); J. Hamers (1981); A. Leontiev (1977); A. Maslow (1991); P. Pintrich and A. De Groot (1990); L. Vygotskyi (1985), et al.

This work is a documentary-bibliographic study, which was performed under the critical-dialectical approach, using research methods of analysis, synthesis, comparison and generalization that were necessary to study the original texts and official documents, organization of the studied material and its exposure.

RESULTS

Motivation (from Latin *movere*, "move") is conceptualized by modern psychology (Bekh, 2004; Barca-Lozano, 2012; Carnegie, 2000; Carretero, 2009; Hamers, 1981; Tapia, 2005, et al) as the effort consented by an individual to achieve a goal. It belongs to the impulses that are learned (secondary needs that guide human behavior, namely, the *acquired social needs*). Attitudes determine motivation. Whenever motivation is discussed, emphasis is placed on the intentional nature of the conduct. When an individual is motivated to achieve a goal, his/her activity is directed towards it.

CONCLUSIONS

So the pedagogic-comparative study allows us to conclude that the best strategies for stimulation of students' interest in learning by competency-based approach, following the Latin American scientists, are...

Perspectives for further studies...

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**ТЕНДЕНЦІЇ РОЗВИТКУ ФОЛЬКЛОРИСТИКИ
В НАУКОВО-ОСВІТНЬОМУ ПРОСТОРІ УНІВЕРСИТЕТІВ УКРАЇНИ
І ЗАРУБІЖЖЯ**

АНОТАЦІЯ

Проаналізовано тенденції розвитку фольклористики в науково-освітньому просторі університетів України та зарубіжжя: фундаменталізації, синтезу академічної науки і освітньої практики, професіоналізації, інституалізації, гуманітаризації, антропологізації, інтердисциплінарності. Визначено, що в українському і зарубіжному фольклористичному дискурсі ХХ – початку ХХІ ст. фольклор досліджується переважно крізь призму функціонального, комунікативного, антропологічного, контекстного підходів, що частково реалізовано в офіційній дефініції фольклору згідно з Рекомендаціями ЮНЕСКО «Про збереження фольклору» (1989 р.). З'ясовано, що багатовекторність вивчення фольклору дозволяє викладачам у процесі структурування змісту фольклористичних дисциплін, спрямування науково-дослідницьких пошуків майбутніх фахівців використовувати здобутки фольклористичних напрямів, які сформувалися в історичній ретроспективі і на сучасному етапі набули активного розвитку: лінгвофольклористики, етномузикознавства, фольклоротерапії (фольклорної музикотерапії, казкотерапії, терапії народним танцем) тощо. Обґрунтовано, що фольклористика в українському та зарубіжному науково-освітньому середовищі розвивається як інтердисциплінарна наука на основі історико-педагогічного досвіду та з урахуванням сучасних інтеграційних процесів, що визначають проблематику змісту фольклористичної, культурологічної підготовки майбутнього педагога-дослідника, який повинен формуватися як людина культури, національно свідомі і водночас полікультурно чутлива особистість.

Ключові слова: фольклор, фольклористика, університет, тенденції, історико-педагогічний досвід, інтердисциплінарність, фундаменталізація.

ВСТУП

Трансформаційні зміни в сучасному освітньому просторі пов'язані з необхідністю формувати новий тип майбутнього педагога-дослідника – людини культури, національно свідомі і водночас полікультурної особистості, людини полікультурно чутливої. Відповідно освіта повинна адаптуватися до сучасних соціокультурних умов на основі історично сформованого наукового досвіду і традицій освітньої практики, а також враховувати сучасні тенденції розвитку певних науково-освітніх галузей у міжнародному контексті.



МЕТА ДОСЛІДЖЕННЯ

Здійснити аналіз тенденцій розвитку фольклористики в науково-освітньому просторі університетів України та зарубіжжя на основі урахування надбань теоретичного і практичного досвіду вивчення фольклорної традиції в умовах університетської освіти, сформованого в історичній ретроспективі, та сучасних векторів розвитку гуманітарних, філологічних, антропологічних науково-освітніх галузей.

ТЕОРЕТИЧНА ОСНОВА ТА МЕТОДИ ДОСЛІДЖЕННЯ

В українському і зарубіжному фольклористичному дискурсі ХХ – початку ХХІ ст. фольклор досліджується переважно крізь призму функціонального, комунікативного, антропологічного, контекстного підходів, що частково реалізовано в офіційній дефініції фольклору згідно з Рекомендаціями ЮНЕСКО «Про збереження фольклору» (1989 р.) [5].

ВИКЛАД ОСНОВНОГО МАТЕРІАЛУ

Визначальною тенденцією розвитку сучасної вищої освіти, науки, зокрема у фольклористичному середовищі, є фундаменталізація, яка, на думку О. Мещанінова, розглядається як елемент «випереджальної» освіти – фундаментальна основа переходу до сталого розвитку» [4, с. 70].

ВИСНОВКИ

Визначення тенденцій вивчення фольклористики в університетах України і зарубіжжя дало можливість зробити висновки, що фольклор досліджується крізь призму антропологічного, функціонального, контекстного, комунікативного підходів, що визначає його цілісну сутність як животворчого джерела культурного, мистецького, наукового, освітнього розвитку соціуму.

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*Приклади оформлення посилань та списку літератури
в англomовній статті згідно з вимогами міжнародного стилю
Американської психологічної асоціації (APA Style)*

APA стиль передбачає використання посилань у тексті роботи щоразу, коли ви цитуєте джерело, будь то парафраз, цитата всередині рядка чи блокова цитата.

Внутрішньотекстове посилання містить інформацію про: автора праці (редактора/укладача/назву цитованого джерела, якщо автор відсутній), що цитується, рік видання та сторінковий інтервал (номери сторінок, із яких взято цитату). Сторінковий інтервал дозволяється не вказувати, якщо ви не цитуєте, а висловлюєте якусь ідею чи посилаєтесь на роботу в цілому.

Парафраз. Не береться в лапки. Прізвище(а) автора(ів) може з'явитися:

- 1) безпосередньо в реченні, тоді після нього в круглих дужках зазначається рік видання;
- 2) у дужках після парафразу разом із роком видання (через кому).

Наприклад:

The publishing process consists of several stages of editing (Tymoshyk, 2004).

У редакційно-видавничому процесі існує кілька етапів редагування (Тимошик, 2004).

According to M. Tymoshyk (2004), the publishing process consists of several stages of editing.

За Тимошиком (2004), у редакційно-видавничому процесі існує кілька етапів редагування.

Обидва посилання вказують на те, що інформація, яка міститься в реченні, може бути розташована у праці Тимошика, виданій 2004 року.

Більш розгорнута інформація про згадане джерело буде міститися у списку використаних джерел.

Цитата всередині рядка. Береться в лапки. Прізвище(а) автора(ів) може з'явитися:

- 1) безпосередньо в реченні, тоді після нього в круглих дужках зазначається рік видання, а після цитати в круглих дужках зазначається сторінковий інтервал;
- 2) у дужках після цитати разом із роком видання та сторінковим інтервалом (через кому).

Наприклад:

W. Wordsworth (2006) claimed that poetry was "the spontaneous overflow of powerful feelings" (p. 263).

Вордсворт (2006) заявив, що романтична поезія була відзначена як «спонтанний перелив сильних почуттів» (с. 263).

Poetry is "the spontaneous overflow of powerful feelings" (Wordsworth, 2006, p. 263).

Романтична поезія характеризується «спонтанним переливом сильних почуттів» (Вордсворт, 2006, с. 263).

Обидва посилання вказують на те, що інформація, яка міститься в реченні, розташована на сторінці 263 твору 2006 року, автором якого є Вордсворт. Більш розгорнуту інформацію про згадане джерело можна отримати зі списку використаних джерел.



Блокова цитата (складається із трьох і більше рядків). Подається в тексті з нового рядка з абзацним відступом для всієї цитати, не береться в лапки. Міжрядковий інтервал – подвійний. Після тексту цитати ставиться крапка і вказується вихідне джерело в дужках.

Наприклад:

In publishing, the concept of editing is primarily used to refer to types of work directly related to the activities of the press. Modern editing is associated with sociocultural professional activities aimed at analyzing and improving linguistic works during their preparation for reproduction by means of printing, or broadcast (Khoniu, 2006, p. 45).

У галузі видавничої справи поняття «редагування» насамперед використовується для позначення видів роботи, безпосередньо пов'язаних із діяльністю органів друку. Сучасне редагування належить до сфери суспільно-культурної професійної діяльності, що спрямована на аналіз і вдосконалення мовних творів під час їхньої підготовки до відтворення засобами поліграфії, або до трансляції (Хоню, 2006, с. 45).

Посилання на роботу кількох авторів (редакторів/укладачів)

Внутрішньотекстове посилання на роботу кількох авторів залежить від їх кількості:

1) 2–5 авторів. У внутрішньотекстовому посиланні необхідно перерахувати прізвища всіх авторів (через кому). Перед останнім автором пишеться знак «&», якщо автори перераховуються в дужках, або слово «та», якщо автори перераховуються в реченні, а рік видання та сторінковий інтервал у дужках.

Наприклад:

(Kernis, Cornell, Sun, Berry, & Harlow, 1993) *або* (Kernis, Cornell, Sun, Berry, & Harlow, 1993, p. 199)

Research findings by L. Boiko, S. Hrechka & N. Pavliuk (2010) prove ...

Результати дослідження Бойко, Гречки, та Павлюка (2010) підтверджують ...

або

L. Boiko, S. Hrechka & N. Pavliuk (2010) state, “Biology is a system of sciences...” (p. 5).

Л. Бойко, С. Гречка та Н. Поліщук (2010) стверджують: «Біологія – це система наук...» (с. 5).

2) 6 авторів і більше. У внутрішньотекстовому посиланні необхідно вказати прізвище першого автора і слово «та ін.».

(Jones et al., 1998) *або* (Jones et al., 1998, p. 7)

(Boiko et al., 2005) *або* (Boiko et al., 2005, p. 10)

Research findings by O. Velychko et al. (2014) prove ...

Результати дослідження О. Величко та ін. (2014) підтверджують ...

або

O. Velychko et al. (2014) indicate, “Biology is a system of sciences...” (p. 10).

О. Величко та ін. (2005) стверджують: «Біологія – це система наук...» (с. 10).

Посилання на декілька робіт різних авторів (одночасно)

Якщо парафраз стосується кількох робіт різних авторів, тоді після парафразу необхідно вказати прізвище автора однієї книги і рік видання, після знаку «;» вказати прізвище автора другої книги і рік видання.



Наприклад:

Many researchers consider literary editing to be one of the most important stages of text processing (Feller, 2004; Rizun, 2002).

Чимало дослідників вважають літературне редагування одним із найважливіших етапів обробки тексту (Феллер, 2004; Різун, 2002).

Посилання на роботу невідомого автора

Якщо автора (редактора/укладача) праці встановити неможливо, слід процитувати джерело за його назвою або використати перші два слова в дужках. Назви книг і доповідей слід указати курсивом або підкреслити; назви статей, розділів і веб-сторінок узяти в лапки.

Наприклад:

A similar study was done of students learning to format research papers ("Using APA", 2001).

Аналогічне опитування було проведено серед студентів, які вивчають формат наукових праць («Using APA», 2001).

Якщо автором виступає організація або державна установа, слід указати назву цієї організації або взяти її у дужки, коли цитують уперше.

Наприклад:

According to the American Psychological Association (2000), ...

Згідно з вимогами Американської психологічної асоціації (2000), ...

Посилання на декілька робіт різних авторів з однаковими прізвищами

Якщо два або більше авторів мають однакові прізвища, у внутрішньотекстовому посиланні необхідно вказати також перші ініціали (або навіть повне ім'я, якщо різні автори мають однакові ініціали).

Наприклад:

There are different opinions on the effects of cloning (R. Miller, 2012; A. Miller, 2014). Існують різні думки щодо наслідків клонування (Р. Міллер, 12; А. Міллер, 46).

While some medical ethicists argue that cloning will lead to ... (R. Miller, 2012), others point out that the benefits of medical researches deny such reasoning (A. Miller, 2014).

Хоча деякі медичні фахівці з етики стверджують, що клонування призведе до дизайнерських дітей (Р. Міллер, 2012), інші відзначають, що переваги медичних досліджень перевершують це міркування (А. Міллер, 2014).

Упорядкування списку використаних джерел

Список використаних джерел подається після основного тексту статті і повинен містити інформацію, необхідну для того, щоб знайти й отримати будь-яке процитоване джерело. Кожне процитоване в роботі джерело повинно з'явитися у списку використаних джерел. Відповідно, кожен запис у списку використаних джерел повинен бути згаданим у тексті роботи.

Цитований матеріал подається в алфавітному порядку за прізвищем автора (редактора/укладача, якщо немає автора). Якщо матеріал не має автора, його необхідно розподілити за першою літерою його назви.



Якщо в бібліографічному описі зазначено кілька робіт одного й того ж автора, редактора або упорядника, тоді записи розташовуються за роками видання в порядку зростання.

Правила бібліографічного опису для списку використаних джерел

Якщо в публікації зазначено не більше семи авторів (редакторів/укладачів, якщо книга без автора), то в посиланні необхідно вказати усіх авторів.

Якщо в публікації зазначено вісім та більше авторів (редакторів/укладачів), у посиланні необхідно перерахувати імена перших шести авторів, а потім вставити три крапки (...) та додати ім'я останнього автора.

Назви книг, журналів зазначаються без скорочень.

1. Книга: 1–7 авторів

Прізвище¹, Ініціали¹, Прізвище², Ініціали², Прізвище³, Ініціали³, Прізвище⁴, Ініціали⁴, Прізвище⁵, Ініціали⁵, Прізвище⁶, Ініціали⁶, & Прізвище⁷, Ініціали⁷. (Рік).
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2. Книга: 8 і більше авторів

Прізвище¹, Ініціали¹, Прізвище², Ініціали², Прізвище³, Ініціали³, Прізвище⁴, Ініціали⁴, Прізвище⁵, Ініціали⁵, Прізвище⁶, Ініціали⁶ ... Прізвище останнього автора, Ініціали. (Рік). *Назва книги: Підназва* (номер видання). Місце видання: Видавництво.

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