



НАЦІОНАЛЬНА АКАДЕМІЯ ПЕДАГОГІЧНИХ НАУК УКРАЇНИ  
ІНСТИТУТ ПЕДАГОГІЧНОЇ ОСВІТИ І ОСВІТИ ДОРΟΣЛИХ

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ЦЕНТР ПОРІВНЯЛЬНОЇ ПРОФЕСІЙНОЇ ПЕДАГОГІКИ



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**ПОРІВНЯЛЬНА  
ПРОФЕСІЙНА  
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### USA EDUCATION POLICY IN TRANSNATIONALIZATION OF HIGHER EDUCATION

#### ABSTRACT

*The analysis of American experience of higher education transnationalization, as well as influence of these processes on various spheres of social development has been done. The main factor is the desire to improve the quality of higher education national system, which leads to positive competition between local and foreign universities and serves as an important incentive for improving the quality of educational services. The obtained results testify that over the past decades the higher education transnationalization has become a subject of state “soft power” policy aimed at addressing specific internal political, social and financial problems. The “soft power” policy concept (by J. Nye) defines it as the ability of a country to get the desired issue by self-attractiveness rather than conquest power or money. The key of “soft power” is the image of the state, which is formed and managed not only by the government, but the citizens themselves, the country as a whole, including its history, achievements, culture, etc. The study leads to the conclusion that higher education transnationalization in the United States is a result of active international marketing activities of universities, as well as targeted state economic, political and information support. The prognostic potential of the conducted scientific research enables the concept development of Ukrainian higher education integration into the world educational space on the basis of constructive ideas of foreign experience consideration at the state and institutional levels.*

**Keywords:** educational policy, transnational higher education, “soft power” policy, national brand in education, export of educational services, exchange programmes, USA.

#### INTRODUCTION

The original conceptual ideas of the article are as follows: higher education ensures future development of the country through the formation of high-quality human (education, health) and social (culture, civil society) capital; higher education is a key factor and a necessary condition for the development of any government state, since during the last decades it has established itself as a powerful branch of the economy, on the successful functioning of which depends the state of social progress as a whole; human capital in economic systems of modern countries is of great importance for ensuring the national competitiveness, because the advantages of the economy and the possibility of its modernization are determined by accumulated and realized human capital.

The expansion of international exports of educational services over the last thirty years has become one of the most important priorities of the state policy of developed English-speaking countries, first of all, the United States. In our opinion, such expansion is due to the increased use of the “soft power” influence of the country that gained momentum in the second half of the 20th century and continued at the beginning of the 21st century. This process is conditioned by several factors, namely:



- training of specialists for foreign countries is to facilitate the realization of the geopolitical and economic interests of the native ones;
- training of specialists for foreign countries becomes one of the most profitable issue of export;
- desire to attract foreign students encourages the governments of exporting countries to reform the training system of specialists, taking into account the requirements of the world labour market, to improve the quality of higher education, to develop new curricula and courses with the implementation of the international component, which ensures the graduates to work in the conditions of the global economy, and the transformation of national universities into international scientific and educational complexes;
- desire of educational-exporting countries to use the best foreign students for the development of domestic economy and science.

#### **THE AIM OF THE STUDY**

Analysis of USA educational and political experience will allow higher education managers in Ukraine to evaluate critically the advantages and disadvantages of existing strategies and develop own policy of higher education transnationalization in order to ensure sustainable development of society based on expanding each citizen's ability to obtain high-quality, competitive higher education and professional qualifications.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

The author of the "soft power" concept, a political scientist from Harvard University J. Nye defines it as the ability to get the desired issue by attractiveness rather than conquest power or money (Nye, 1990). The phenomenon "soft power" as a means of influence of one states to others existed almost always, but it significance increased in the 20th century. The key of "soft power" is the image of the state, which: a) is not static – it can change, and sometimes, even in one moment can be lost; b) is not always subject to the purposeful formation and management, because its carrier is not only the government, but the citizens themselves, the country as a whole, including its history, achievements, culture, etc.

At the same time, "soft power" is far from related to the size, economic or military power of the state. A country can, for example, be the leader in: the average life expectancy of its citizens; the level of wages and pensions; the ratings of doing business; the reliability of the national currency; environmental standards; the quality and availability of education; the existence of the state without wars and disasters; and other parameters that shape credibility and reputation of the country. According to the country image, the brand may be a set of characteristics that create a unique perception of the country state. Powerful positive image of the state stimulates attracting investments, increasing exports and the flow of tourists and highly skilled professionals and, in general, contributes to sustainable development of the country. In the era of growing global competition in the external and internal markets of the state, there is a strong need for the management of counties' brand, its development and control (Fetscherin, 2010). In this manner, the purposeful formation of the country brand is seen as an instrument of effective interaction and promotion of national interests at the world level.

The study has shown that in the field of higher education, the national brand and the level of its formation, is estimated as the ability of the country to attract as many foreign students as possible, to establish educational exchanges and to create high-quality universities. But "soft power" is not only the country image, but also the provision of assistance to other states on a bilateral basis, or in other words, the promotion of international





development. The analysis of “soft power” instruments of influence in the field of higher education and science has proved that transnational education plays a key role in this process. After all, the “soft power” policy of the developed countries in this area is very diverse: it includes many tools and practices, different in scope of audience and areas of cooperation.

### RESULTS

In the experience of foreign countries you can find many examples of work with different target groups (schoolchildren, students, parents, teachers, scientists, young researchers, heads of educational and scientific institutions) at different levels of education (school, higher, postgraduate), the involvement of local educational and scientific organizations. Special attention is paid to the development of interinstitutional cooperation: support of inter-university contacts, cooperation of companies, joint research of partner countries, creation of scientific networks and joint universities (Lazutina, Nagornov, Rakhmangulov, Sakharov, & Shelepov, 2014). The most common tool for the development of scientific and business partnerships is the transnational individual mobility programs for teachers, scholars and students.

There is no doubt that, central to the country’s “soft power” policy is the development of domestic educational services export. Countries are seeking to coordinate their actions in this direction by creating a unified system for attracting foreign students. Important components of such system are information policy (dissemination of information about educational institutions of the “soft power” country) and actions to improve quality of the national education system, in particular the creation of new educational programs. Increasing the attractiveness of educational system of the country-exporter is also important as it involves the process of adaptation to the general international tendencies and local national peculiarities of the education development both countries-“soft power” exporters and countries-importers). The mutual process of educational systems convergence is usually organized through negotiation, conclusion of agreements (for example, recognition of diplomas etc.), as well as taking into account peculiarities (results of national examinations, systems of assessment in national educational institutions etc.) during the implementation of educational and scholarship programs and, in general, development of educational services export (Lazutina, Nagornov, Rakhmangulov, Sakharov, & Shelepov, 2014). In addition to regular programs (academic exchanges, scholarships etc.), flexible tools are used to address local relevant issues. For example, the training of “educational agents” – the staff of universities promoting the image of the country abroad, which is widely used by Great Britain.

Certain thing, an effective “soft power” policy is characterized mostly by a number of features. The first distinguishing feature is the presence of institutions that provide stability of the “soft power” strategy, the consistency and regularity of the country’s actions. Undoubtedly, the ideal model is a form that allows solving several problems and implementing simultaneously different policy areas: language support and promotion; the development of cultural ties; the promotion of educational services export etc. An example of a multifunctional institution can be the British Council of the Great Britain, working simultaneously in the field of education, culture, language learning (British Council, 2015).

Similarly, the second characteristic of the integrated “soft power” policy is the diversification of target groups. The strategy should aim at working with government departments, institutes, companies and individual citizens (schoolchildren, students, teachers and academics). Work with the latter can be carried out through mobility programs, exchanges, grants in the field of education, culture, science. The country’s actions at the institutional level are usually aimed at working with schools, universities, non-governmental educational institutions, through initiation of negotiations, grant programs, networking of educational



institutions, implementation of joint projects, etc. Interaction at the level of ministries and departments can be done by concluding agreements (general, sectoral), holding joint working groups, etc. Critically important for the coherent and consistent operation of all elements of the “soft power” system is the regulatory framework that provides transparency and resilience of the “soft power” policy in partner countries (agreements at the government / departmental level, between institutions and organizations), as well as favourable conditions for carrying out individual actions (for example, simplifying the visa regime for implementation of mobility programs) (National Archives, 2002).

However, the system of informing and marketing support is necessary for ensuring openness and forming a positive image of the country in the global educational space. Coordination mechanisms are also needed to ensure coherence of all elements of the “soft power” strategy. This function, as a rule, is performed by funds regulating work with non-governmental educational organizations, networks of educational institutions, bilateral commissions or councils.

Taking into account the above mentioned, the governments of countries-exporters provide serious support to their universities, including financial ones, in order to attract foreign students. We share the opinion of the researchers that attracting a significant number of foreign students to the higher education system of developed English-speaking countries is primarily the result of the active international marketing activities of universities, as well as targeted state economic, political and information support.

Let’s consider in detail examples of the “soft power” policy application in the field of higher education and science in the United States.

Obviously, the United States has always had a significant “soft power”, as many people in the world are impressed by the American idea of personal freedom, equality of opportunity, the American way of life, mass culture, economic achievements. Today, the US remains the only country in the world with a practice of global goal-setting. American foreign policy is designed to ensure global leadership of the United States, and US foreign policy agencies, as stated in the Budget Law, in practice realize this task. The US State Department sees the foreign policy main mission as ensuring freedom for the benefit of the American people and the international community through the creation and development of a democratic, secure and prosperous world, composed of well-governed states that meet the needs of their citizens, contribute to poverty reduction and conduct responsible policies within the international system (U.S. Department of State, 2014). As you can see, the mission is formulated as a policy of “soft power”, and its cornerstone is the idea of protecting the values of democracy and freedom.

It should be noted, that in 1961 the US Agency for International Development was set up to promote the country’s “soft power” methods in accordance with the “Foreign Assistance Act”, bringing together the various foreign policy programs of the country (U.S. Agency for International Development, 1961). Among the key objectives of the Agency, cooperation in the field of education, scientific, technical and innovation cooperation through programs within the ACIE, USAID, as well as through some non-governmental organizations, such as CIEE, has been identified. The above-mentioned cooperation is based on educational and scientific exchanges and programs that allow the attraction of foreign scientific personnel to the United States (U.S. Agency for International Development, 2018).

The study leads to the conclusion that the most widespread and universal direction of the “soft power” policy of the United States since 2010 is still transnational educational and scientific programs, including exchange ones, in particular:



– Fulbright Program for foreign students, enabling young people to study or research in the United States for one year or more. There is also a direction for English language teachers, which provide opportunities for young teachers from all over the world to improve their teaching methods, English language proficiency and expand their knowledge of the United States by completing a nine-month course of study without a degree. In addition to studying, scholarship students teach their native language to students at the host university.

– Hubert H. Humphrey Program – a one-year scholarship program designed for young professionals with leadership qualities to demonstrate their commitment to benefit society and can simultaneously benefit from an independently tailored program of study at leading American universities.

– Edmund S. Muskie Program for university graduates, which provides an opportunity to study in the United States for a Master's degree.

– Program of the Benjamin Franklin Transatlantic Fellows Summer Institute designed for students from Central Asia aged 16 to 18. The purpose of the program is to promote the strengthening of relations between representatives of the younger generation and to teach them jointly solve the global problems of the 21st century.

– English Language Access Program, the purpose of which is to provide young people from poor families with an opportunity to learn English and develop their leadership skills through studying the foundations of the US culture and civic engagement, as well as democratic values.

– Future Leaders Exchange program to establish friendship between the peoples of the United States and Eurasia.

– The Global UGRAD Program allows undergraduate elementary students to undergo an academic year without a degree in US universities and colleges in accounting, agriculture, business, computer science, criminal justice, economy, education, management, environment, hotel business, international relations, journalism and media, law, political science, psychology and sociology.

However, in the beginning of the 21st century the rapid development of the global market for educational services has raised the problem of ensuring the quality of their provision on a transnational basis, which resulted in an intensive rethinking of the organizational and pedagogical principles of education transnationalization in developed English-speaking countries. The need to maintain competitiveness in the international educational market has prompted the US government to introduce a number of initiatives, among which the Education Development Strategy “Succeeding Globally Through International Education and Engagement 2012–2016” developed in 2012 by the US Department of Education (U.S. Department of Education, 2012).

The analysis of the document showed that the strategy is aimed at implementation of two important tasks:

- 1) improving the quality of education in the United States;
- 2) promoting the priority goals of the country's foreign policy by: ensuring a high quality of higher education for all students; development of global competence; international benchmarking in education and application of the experience of other countries; improving educational diplomacy and interaction with other countries and international organizations.

The strategy reflects the actual direction of the government on young people effective learning for a globalized world and cooperation with other countries in order to improve the education quality based on their experiences and implementing best practices. This document represents a holistic and systematic approach to international activities,



reflected in its goals and objectives. Transnationalization of higher education in the United States is aimed at developing mechanisms for managing this area, due to the lack of government strategies for university management, the superiority of private initiatives in the existing mechanisms of university management, the dependence of transnational higher education strategies development on the particular leadership of universities, complicated schemes of international activities financing, mainly based on self-financing.

### CONCLUSIONS

Summing up the analysis of American experience of higher education transnationalization, as well as influence of these processes on various spheres of social development, we can state that one of the main factors of the mentioned process is, first of all, the desire to improve the quality of higher education national system. This, in turn, leads to positive competition between local and foreign universities and serves as an important incentive for improving the quality of educational services. The obtained results testify that over the past decades the higher education transnationalization has become a subject of state “soft power” policy aimed at addressing specific internal political, social and financial problems. Summarizing the study, we can conclude that the higher education transnationalization in the United States is a result, first of all, of active international marketing activities of universities, as well as targeted state economic, political and information support. The prognostic potential of the conducted scientific research enables the development of the concepts of Ukrainian higher education integration into the world educational space on the basis of constructive ideas of foreign experience consideration at the state and institutional levels.

### REFERENCES

1. British Council. (2015). *Corporate reports and documents*. Retrieved from <http://www.britishcouncil.org/organisation/how-we-work/reports-documents>.
2. Fetscherin, M. (2010). The determinants and measurement of a country brand: the country brand strength index. *International Marketing Review*, 27 (4), 466–479.
3. Lazutina, I. V., Nagornov, V. A., Rakhmangulov, M. R., Sakharov, A. G., & Shelepov, A. V. (2014). Sistematizatsiia luchshikh zarubezhnykh podkhodov k realizatsii politiki “miagkoi sily”. *Vestnik mezhdunarodnykh organizatsii*, 9 (2), 229–245.
4. National Archives. (2002). *International Development Act*. Retrieved from <http://www.legislation.gov.uk/ukpga/2002/1/contents>.
5. Nye, J. (1990). *Bound to lead: the changing nature of American power*. New York, NY: Basic Books.
6. U.S. Agency for International Development. (1961). *The Foreign Assistance Act of 1961*. Retrieved from [http://pdf.usaid.gov/pdf\\_docs/pcaab142.pdf](http://pdf.usaid.gov/pdf_docs/pcaab142.pdf).
7. U.S. Agency for International Development. (2018). *Who we are*. Retrieved from <http://www.usaid.gov/howe-are>.
8. U.S. Department of Education. (2012). *Succeeding globally through international education and engagement: U.S. Department of Education international strategy 2012–16*. Retrieved from <http://www2.ed.gov/about/inits/ed/international/international-strategy-2012-16.pdf>.
9. U.S. Department of State. (2014). *Bureau of Budget and Planning: Mission*. Retrieved from <http://www.state.gov/s/d/rm/index.htm#mission>.



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### **COMPARATIVE ANALYSIS OF PROFESSIONAL TRAINING OF FUTURE SPECIALISTS IN PHYSICAL THERAPY IN HIGHER EDUCATIONAL ESTABLISHMENTS OF UKRAINE AND EUROPE**

#### **ABSTRACT**

*The article presents comparative analysis of the structure and content of future specialists in physical therapy training in higher educational establishments of Ukraine and leading European countries. Having analyzed official websites and educational documentation of the leading European colleges of higher education regarding professional training of future specialists in physical therapy, we have defined common and distinctive features of structural and content components of the process. Within the framework of the research, it has been found that in educational systems of Italy, Spain, Norway, Greece, Finland, Sweden, and Norway training of future specialists in physical therapy is primarily focused on the concept of continuous education and is variant, practice-oriented, related to the profession of a physical therapist at most. The research has revealed certain components in the structure and content of professional training of future specialists in physical therapy in higher educational establishments of Ukraine and leading European countries. These components can be used in structure-oriented content of educational process in Ukrainian higher educational establishments. Namely, these include: shift of the vector of educational process to practice-oriented education via increasing academic hours for improvement of professional competence of future specialists in physical therapy under conditions of actual professional activity, acquiring knowledge and skills necessary for professional activity. Relying on the results of the comparative analysis we have made a conclusion that positive experience in training of future specialists in physical therapy in higher educational establishments of Ukraine and leading European countries will allow to define the trend of developing professional training in domestic higher educational establishments.*

**Keywords:** professional training, specialists, physical therapist, future specialists in physical therapy, higher education, higher educational establishments, structure of higher education, foreign experience.

#### **INTRODUCTION**

Socially significant changes in the system of higher education of Ukraine, aspiration for becoming a part of international educational field, the need in absolutely new generation of personnel having a degree of higher education and meeting the requirements of domestic and foreign labour markets call for essential modification of organization and content of higher education in our country.



Due to the factors stated above, improvement of the existing legal and educational regulations regarding training of future specialists in physical therapy in higher educational establishments of Ukraine, preserving former achievements and peculiarities of native traditions and taking into account experience gained in leading colleges of higher education of the world, is rather topical nowadays.

We think that professional training of future specialists in physical therapy should be analyzed from the point of view of modern days and tendencies of reformation in the sphere of higher education of Ukraine while taking into account foreign experience of professional training of future specialists in physical therapy in higher educational establishments of the world.

The analysis of foreign experience in training of future specialists in physical therapy as well as the analysis of structural and content aspects of the system of education with the purpose to adapt their most significant achievements to national system of higher education define topicality of the research.

#### **THE AIM OF THE STUDY**

The aim of the research is to present the results of comparative analysis of the structure and content of professional training of future specialists in physical therapy in higher educational establishments of Ukraine and leading European countries.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

Basic aspects of professional training of future specialists in the field of health protection in developed countries of the world have been partially defined by native scientists. Thus, in his dissertation A. Hertsyk (2006) analyzes organizational and methodological aspects of training bachelors of physical rehabilitation in Canada. In his monograph R. Karpyuk (2010) reveals peculiarities of professional training of specialists in adaptive physical education in leading European countries and the USA. The dissertation of N. Byelikova (2012) reveals basic tendencies of training future specialists in physical rehabilitation in Russian Federation, describes experience of North America, Australia, Great Britain, and some European countries. S. Hug (2015) made a complete study of peculiarities of professional training of future specialists in physical rehabilitation in universities of Great Britain. In his monograph Yu. Lyannyi (2016) describes some aspects of professional training of future specialists in physical rehabilitation, their master's degree education in Baltic countries, Austria, the Netherlands, the USA, and Canada. The analysis of scientific references shows that native literature has limited number of works related to studies of foreign experience in professional training of future specialists in physical therapy.

To achieve the aim of the research, the following methods were used in this work: analysis, synthesis, contrasting and generalization of the obtained data.

#### **RESULTS**

Until 2016, professional training of future specialists in physical therapy (physical rehabilitation at that time) in Ukraine was still done in the sphere of physical education and sport. Now, professional training of future specialists in physical therapy has been moved from branch of studies 0102 "Physical Education, Sport and Human Health" to 22 "Health Protection."

According to the "Law of Ukraine On Higher Education", professional training of physical therapists in higher educational establishments of Ukraine consists of three levels: the first (bachelor's degree) is the period of studies lasting 3 years and 10 months totaling 180–240 ECTS credits; the second (master's degree) is obtained by education and



vocational program of training or by education and scientific program of training. Education and vocational training program totals 90–120 ECTS credits, education and scientific program is 120 ECTS credits. The third level (education and scientific) is a standard period of training for PhD in postgraduate courses and lasts for 4 years. The educational component of the training program for PhD totals 30–60 ECTS credits.

The analysis of official websites and educational documentation of some domestic and leading European universities reveals common and divergent features and approaches in the structure and content of professional training of future specialists in physical therapy.

Thus, the structure of higher education in Italy is similar to the Ukrainian one and also consists of three levels:

- the first level “Corsi di Diploma Universitario” is an analogue for bachelor’s degree. Up until recent times, the program of training for bachelor was designed for four years and then it was reduced to three years. The first three years of studies in Italian colleges of higher education envisage significant number of theoretical courses, internship, and semester examinations;

- the second level “Corsi di Laurea” lasts from two to three years and is an equivalent to master’s degree. Normally, master’s degree can be obtained after completing studies for bachelor’s degree. Graduate studies are aimed at improvement of previously obtained skills;

- the third level of higher education in Italy “Corsi di Dottorato di Ricerca i Corsi di Perfezionamento” corresponds to European PhD and is aimed at research program of the highest level. After its completion, the graduates are awarded the degree of Doctor of Science (Dottore), which is considered to be academic and is needed only for those who plan to teach at a higher educational establishment (Education in Italy, 2018).

The education process of training of bachelors in physical therapy in one of the biggest universities of Italy lasts for three years (six semesters) totaling 180 ECTS credits.

An obvious difference of the system of education in Italy is absence of fixed education programs. Students of higher educational establishments of Italy form schedules of classes and examinations for themselves. Naturally, there are lectures and seminars; however, students can select teachers and courses. Such freedom of choice is aimed at promoting interest to studying the selected subjects (Education in Italy, 2018).

Structure and content of professional training of future specialists in physical therapy in higher educational establishments of Greece are slightly similar to the ones used in Ukraine. Higher education in Greece has three levels: the first is a basic level (undergraduate studies); the second one is specialty degree (graduate studies); the third one is higher research level (postgraduate studies) (Education in Greece, 2018).

Professional training of future specialists in physical therapy in higher educational establishments of Greece for bachelor’s degree is done primarily at faculties of physical education and sport throughout four years. Education program totals 240 ECTS credits (60 credits per each year of studies).

Education by the program of the given major is focused on studying basic and specialized vocational subjects. System of evaluation is different in higher educational establishments of Greece. A 10-grade scale of evaluation is used in Greece, 5 being the passing grade. The level of knowledge below 4.9 is “unsatisfactory”, from 5 to 6.9 – is “satisfactory”, from 7 to 8.4 – is “good”, from 8.5 to 10 – is “excellent”. To score high grades is not an easy thing to do in Greek colleges of higher education. “Excellent” can only be scored for creative work and brilliant knowledge (Education in Greece, 2018).



The system of higher education in Spain also consists of three levels: “Grado” lasts for four years and is an analogue to bachelor’s degree; “Master” is one year of studies, and it is an analogue to master’s degree; “Doctor” lasts for one year and is an analogue to postgraduate studies, which is completed by presenting a dissertation (Education in Spain, 2018).

Program of training for bachelors in physical therapy in most universities of Spain is designed for four years totaling 240 ECTS credits, which is similar to the one used in Ukrainian higher educational establishments. Educational workload is evenly spread throughout all four year of studies – 60 ECTS credits in each year.

Professional training of future specialists in physical therapy in Spanish higher educational establishments for bachelor’s degree is done at faculties of medical sciences. Some universities offer training of such specialists by two programs: 1) Grau de Fisioteràpia (profound study of physiotherapy of locomotor apparatus, physiotherapy in neurology, and physiotherapy of cardiovascular system); 2) Grau de Fisioteràpia (escoles adscrites) – physiotherapy in pediatrics, physiotherapy of thorax diseases, physiotherapy in sports.

Curriculum of professional training of future specialists in physical therapy in Spanish higher educational establishments is distinguished by twice lesser number of subjects (8–9 per academic year) in comparison to Ukrainian universities. The structure of curricula for the third and the fourth year of studies envisages field studies totaling 42 credits, which is three time more (13–15 credits) than in the majority of higher educational establishments of Ukraine.

Some divergent features have also been revealed in the content. Thus, distribution of the workload for the block of basic subjects in the first year of studies by both fields of training is 75 % – 48 ECTS credits out of overall 60 credits in comparison to the number of compulsory subjects and 12 ECTS credits, which is 25 %. However, in the second year of studies, the volume of workload for the block of basic training subjects in both fields is only 25 % (12 ECTS credits), while for block of compulsory subjects it is 75 % (48 ECTS credits). In the third and fourth years of studies, the content of curriculum is formed by two blocks of subjects – compulsory and selective. In the third year of studies, the volume of workload for compulsory subjects is 48 ECTS credits (75 % of overall amount). The volume workload for the block of selective subjects is 12 ECTS credits (25 % of overall number). In the fourth year of studies, specific load of the block of selective subjects is reduced to 60 %, while the number of compulsory subjects decreases to 20 % of overall workload (Education in Spain, 2018).

The system of higher education in Finland is represented by two types of educational establishments: traditional universities (yliopisto, universitet) and polytechnic universities (ammattikorkeakoulu, yrkeshögskola). Professional training of specialists in Finnish higher educational establishments is done by the classic three-level system of higher education: undergraduate studies, graduate studies, and postgraduate studies. However, some features that are peculiar only to Finnish system of higher education should be noted (Education in Finland, 2018).

A significant number of professions (especially state-regulated) in Finland require a person to have master’s degree, which is why undergraduate program of training in Finland is often viewed not as a complete higher education, but as preparation for the next level.

The duration of training for the bachelor’s degree in traditional and polytechnic universities is different. Bachelor of Arts training lasts for 3 years with 180 ECTS credits. Polytechnic universities have Bachelor’s degree programs for 3.5–4 years of studying with 210–240 ECTS credits.





Unlike countries of Southern and Central Europe, that actively implement the system of free sciences and interdisciplinary programs, Finnish universities focus on one field.

A 5-grade scale of assessment is used in Finland (grade “0” exists but is used rather rarely). After finishing school a person may have high level of knowledge, however, in universities it is not like that. Average grade rarely reaches 4.0, but the reason is not poor educational performance, but harsher and stricter system of evaluation.

Students obtain bachelor’s degree in physical therapy in most Finnish universities at the faculty of health protection and social welfare (Sosiaalija terveysala). Educational program for bachelor’s degree in physical therapy, as in Helsinki Metropolia University of Applied Sciences, is designed for 3.5 years totaling 210 ECTS credits – 60 ECTS credits per first three years of studies and 30 ECTS credits in the last semester.

The content of curriculum comprises ten blocks of subjects that help form professional competencies of future physiotherapists: the first block is “personal skills” (Työelämävalmiudet); the second one is “General researches in the field of social issues and health protection” (Sosiaalija terveysalan yhteiset perusopinnot); the third block is “Interaction with clients under conditions of changing business environment” (Asiakkuus muuttuvassa toimintaympäristössä); the fourth one is “Basics of social welfare and health improvement” (Hyvinvoinnin ja terveyden edistämisen perusteet); the fifth one is “Methods of functional evaluation in physiotherapy” (Toimintakyvyn arviointi ja fysioterapian menetelmiä); the sixth one is “Improvement of health, physical activity and functional capabilities with the help of physiotherapeutic means” (Toimintakyvyn ja terveyden edistäminen fyysisen aktiivisuuden ja fysioterapian keinoin); the seventh one is “Challenges of international environment and technology in future”; the eighth block is “Practical studies” (Ammattitaitoa edistävä harjoittelu); the ninth block is “Entrepreneurship and innovations” (selective courses) (Yrittäjyys ja innovaatiotoiminta); and the tenth one is “diploma thesis” (Opinnäytetyö) (Education in Finland, 2018).

The system of higher education in Sweden is two-level (Education in Sweden, 2018). Higher education of the basic level is provided in the form of educational courses. At the same time, students can select individual courses and combine them. Credit units or points are awarded for each course. A student must get 60 points throughout one year. The diploma (högskoleexamen) is given provided a student has at least 120 credit units (two years of full-time studies). Such diploma can be obtained in all universities or institutions. Bachelor’s degree (kandidatexamen) envisages 180 credit units that can be scored throughout three years of study. To obtain master’s degree (magisterexamen) a student has to score 120 credit units.

The second level – licentiate degree – (licentiatexamen) requires 120 credit units (2 years of studies and research work including diploma thesis) with at least 180 credit units from the first level of higher education. This degree can be awarded as intermediate for those who study by the program of doctorate degree (doktorsexamen). To obtain doctorate degree, at least four years of studies and 240 credit units are required.

Within the framework of bachelor’s degree, educational program is focused on project- and problem-oriented analysis with implementation of case studies and application of new information technologies. Scientific approach and broad clinical education are also emphasized in the program. Throughout the entire undergraduate program, it is constantly evaluated, developed and updated taking into account the needs of society in physiotherapeutic help.



In Sweden, physical therapists along with doctors and nurses are primary specialists in the sphere of health protection. Labor market gives broad range of opportunities for physical therapists. They can work in institutions of medical and sanitary help of closed or open type, in municipalities, business, private sector etc. Moreover, students have a chance to implement a certain part of their researches abroad via various exchange programs and agreements within universities.

In general, training of future specialists in physical therapy is designed for six semesters totaling 180 ECTS credits, 30 ECTS credits per semester. Two scales of evaluation are used in Swedish universities and colleges. The first – grades ranging from 1 (low level) to 5 (high level) – are usually used in technical universities. The second one is used to evaluate performance of students from other specialties and includes only three types of grades: U (Underkänd) – “failed”; G (Godkänd) – “passed”; VG (Väl godkänd) – “excellency” (Education in Sweden, 2018).

Comparative analysis of structure and content of bachelors in physical therapy training in leading universities of Norway (Education in Norway, 2018) and Khmelnytskyi National University (Khmelnytskyi National University, 2017) helped reveal common and divergent features and approaches. The common ones include: implemented degree systems of educations; application of credit system of education. Certain differences in the structure of educational programs used in universities of both countries have been revealed. Thus, educational program of training of physical therapy bachelors in universities of Norway is designed for three academic years. Educational program of Khmelnytskyi National University as well as of the majority of Ukrainian higher educational establishments is designed for four years of studies. Certain differences in the content of syllabuses used in universities of both countries have been revealed. The content of syllabuses used in Norwegian universities includes three-four major courses totaling from 10 to 40 ECTS credits per academic year. On the contrary, syllabus used in the Ukrainian university includes more courses (8 courses per each of four academic years) totaling 4–5 ECTS credits. Moreover, differences in educational workload have been revealed. In universities of Norway it comprises 180 ECTS credits, while in the Ukrainian higher educational establishments it comprises 240 ECTS credits. A significant advantage of Norwegian universities in terms of practical clinical experience (45 ECTS credits compared to 13 ECTS credits in Khmelnytskyi National University) has been revealed. The syllabus used in Norwegian universities envisages 15 ECTS credits for bachelor-degree thesis. We consider it to be a significant reserve for improvement of the process of future specialists in physical therapy training in our university (Education in Norway, 2018; Khmelnytskyi National University, 2017).

### CONCLUSIONS

The analysis of official websites and educational documentation of leading colleges of higher education in leading European countries and Ukraine regarding professional training of future specialists in physical therapy allowed to define common and divergent features of structural component of educational process. The analysis of foreign experience of training future specialists in physical therapy will allow to implement positive experience of higher educational establishments of leading European countries in domestic higher educational establishments.

In future, the obtained results will serve as basis for the development of the concept and model of professional training of future specialists in physical therapy to work with athletes' health recreation.



## REFERENCES

1. Bielikova, N. (2012) *Pidhotovka maibutnikh fakhivtsiv z fizychnoi reabilitatsii do zdoroviazberezhuvanoi diialnosti: teoriia ta metodyka: monohrafiia*. Kyiv: Kozari.
2. *Education in Finland*. (2018). Retrieved from [https://www.unipage.net/ru/study\\_in\\_finland](https://www.unipage.net/ru/study_in_finland).
3. *Education in Greece*. (2018). Retrieved from [https://www.unipage.net/ru/study\\_in\\_greece](https://www.unipage.net/ru/study_in_greece).
4. *Education in Italy*. (2018). Retrieved from [https://www.unipage.net/ru/study\\_in\\_italy](https://www.unipage.net/ru/study_in_italy).
5. *Education in Norway*. (2018). Retrieved from [https://www.unipage.net/ru/study\\_in\\_norway](https://www.unipage.net/ru/study_in_norway).
6. *Education in Spain*. (2018). Retrieved from [https://www.unipage.net/ru/study\\_in\\_spain](https://www.unipage.net/ru/study_in_spain).
7. *Education in Sweden*. (2018). Retrieved from [https://www.unipage.net/ru/study\\_in\\_sweden](https://www.unipage.net/ru/study_in_sweden).
8. Hertsyk, A. (2006). *Orhanizatsiino-metodychni aspekty pidhotovky bakalavriv fizychnoi reabilitatsii v Kanadi*. (Avtoref. dys. kand. nauk z fiz. vykhovannia i sportu). National University of Physical Education and Sports of Ukraine, Kyiv.
9. Huk, S. (2015). *Profesiina pidhotovka fakhivtsiv z fizychnoi Reabilitatsii v universytetakh Velykoi Brytanii*. (Avtoref. dys. kand. ped. nauk). Khmelnytskyi National University, Khmelnytskyi.
10. Karpiuk, R. (2008). *Profesiina pidhotovka maibutnikh fakhivtsiv z adaptivnoho fizychnoho vykhovannia: teoriia ta metodyka: monohrafiia*. Lutsk: Volynska oblasna drukarnia.
11. *Khmelnytskyi Natsionalnyi Universytet*. (2018). Retrieved from <http://www.khnu.km.ua/root/page.aspx>.
12. Liannoi, Yu. (2016). *Profesiina pidhotovka mahistriv z fizychnoi reabilitatsii u vyshchyykh navchalnykh zakladakh: teoretyko-metodychnyi aspekt*. Sumy: Sumy State A. Makarenko Pedagogical University.



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### **CURRICULA AND PROGRAMMES IN PETROLEUM ENGINEERING FOR HIGHER TECHNICAL EDUCATION INSTITUTIONS: COMPARATIVE ANALYSIS**

#### **ABSTRACT**

*The article states the analysis of the curriculum that regulates the main purposes, essence and directions for petroleum training. The importance and necessity of positive usage of Austrian, English and Norwegian experience at the time of petroleum engineers training in the petroleum industry has been stressed on. The structure and content of curricula in the process of the petroleum engineers training at the universities of pointed out countries have been analyzed. It has been designated that the terms “curriculum” and “programme” are connected with such outstanding British and American scholars as A. Bosanquet, D. Clark, S. Fraser, F. Hunkins, L. Lattuca, M. Linn, G. O’Neill, A. Ornstein, J. Stark et al. Based on their views it has been found out that these papers define the basic goals, meanings and essential rules for training. It has been outlined that an educational program plays a principal part in the organization of higher technical education, both as the way of interplay and as the foundation for judgment and student appraisal. Three beds of curriculum, e.g. national curriculum, internal, or municipal curriculum, university curriculum and annual plan are considered. All these are designed in an accessible, broad and collective methods, thus, educational program is more a series of actions to achieve results than a commodity. In essence, curriculum is a key paper and it considers the comprehension of humankind, community and training; it also combines the work of any university to regional and nationwide tactics. Moreover, lecturers develop their own provincial curricula established on their national certificates. Close attention has been paid to key contextual filters that influence the curriculum planning process. It has been emphasized that a curriculum is formed on future direction and competence-based pertaining to thought; it is integrated and condensed, it joins all fields of training and university activity. The article discloses special aspects of petroleum specialists’ cycle education. The requirements of employers towards HEI graduates’ competences are presented.*

**Keywords:** curriculum, programme, course, professional education, academic plan, contextual context, professional competences, petroleum industry, labour market, foreign experience.

#### **INTRODUCTION**

The hydrocarbons industry has experienced profound modifications recently. Geopolitics is tremendously dynamic; environmental responsibilities are increasing; international request for crude oil and natural gas is expanding. Consequently, the industry is lack of competent specialists to a greater extent. But companies in the industry take training seriously; they comprehend the advantage of learning and do not require to be persuaded to prepare their workforce more and regularly review and update their work practices.



In Europe, engineers have learnt to rate the special aspects of engineering when dealing with difficulties; still, the style in which they approach problem examining and determining vary up and down the countries. While significant dissimilarities have appeared and prevail within countries, it is likely, however, to pinpoint symbolic national designs that illustrate superior guidelines of advantage. For instance, in France engineering students learn that the apical worth is focused on mathematical bases from first standards in case if they find techniques of preventing or opposing its power, when in fact, in the United Kingdom students at all ranks are being disputed to identify the fundamental value of rational education in problem solving. At Fachhochschulen in Germany, students systematically encounter the way that no characteristic work in engineering can appear without first acquiring a real sense of accuracy (Downey & Lucena, 2004).

Engineering educators in Europe have explored to rectify engineering training by making it more understandable to students in order they can settle various engineering facets differently. European methods mostly have concentrated on accelerating the quantity of planning essence in the educational program, containing the presentation of design actions into more courses of study, more unlimited problem solving, and rising connections to certain sphere. On the whole, European series of actions have addressed to training alumni and alumnae for career ability to move by rearranging degrees, extending the technical meanings of engineering syllabi, and cultivating an organization of student exchanges among different countries (SEFI, 2002).

#### **THE AIM OF THE STUDY**

Our study is aimed at analyzing the curricula designed for training petroleum engineers in such countries as Austria, Great Britain, Norway, and defining their role in forming these experts' professional competency.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

Theoretical and methodological facets of our study are based on works by such scholars as R. Diamond A. (1998) (a practical application and many templates in designing and assessing courses and curricula), T. Hewitt (2006) (implementing and managing the curriculum), P. Knight (2001) (a process approach to curriculum-making), L. Lattuca and J. Stark (2009) (the use of the concept of an "Academic Plan), J. Moon (2002) (module and programmes development), M. Neary (2003) (curriculum studies in post-obligatory and adult education), G. O'Neill (2015) (curriculum design in higher education), A. C. Ornstein and F. Hunkins (2009) (a substantial theoretical survey of curriculum theory and types), S. Toohey (2000) (aspects in planning courses for higher education) and others.

A lot of notable foreign scholars, namely, A. Alderson, A. Blackwell, A. Butorac, S. Billett, S. Echaore-McDavid, J. Figgis, A. Lidgett, R. McDavid, K. Mitchell, A. Standen, A. Zubrick and others have paid considerable attention to petroleum engineers' professional training, skill development in the hydrocarbons industry and shed some light on the intricate and nearly sophisticated occurrence that there are some knowledge that cannot be instilled, but that can be mastered. Their work clearly shows that a curriculum angles for the equilibrium between learning accomplishment and student progress and it contributes typical way to the methods and prospering of training and learning.

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

#### **RESULTS**

The term "programme" is typically used to explain an achieved set of academic units that greatly influences a qualification or reward. Moreover, this can also be outlined,



in some framework, as the “course”. According to G. O’Neill (2015), to accumulate the disorientation, “course” can also be needed where “module” is practiced in the modular system, as a “unit” of credit-bearing learning that is an element of a programme. The term “programme” and “curriculum” are also applied in junction, where curriculum often considers a broader conceptual system and framework. S. Fraser and A. Bosanquet take the view that staff working in higher education understand in their own ways the term “curriculum: the form and meaning of a subject; the form and essence of a syllabus; the students’ background of studying; an active and mutual method of training and learning (Fraser & Bosanquet, 2006).

L. Lattuca and J. Stark drew attention to that fact that personnel worked with identical disintegration of this notion. Therefore, they supported a practical context for all curriculum collaborators is the operation of the idea of an “Academic Plan”, which stresses on the planning means, and comprises eight essential features: 1) aims, 2) content, 3) order, 4) learners, 5) pedagogical processes, 6) didactic resources, 7) assessment, 8) adjustment. The scholars outlined that the scheme is made in the social and cultural framework (Lattuca & Stark, 2009).

This conception of developing sets of actions is emphasized in the regularly used notion “curriculum design” and is “mainly accepted as an important system explaining the learning to appear within a definite educational program, pointing to particular units of credit or accomplishment” (JISC, 2014). Curriculum scheme has frequently been interpreted in junction with the definition “curriculum development”. A. Ornstein and F. Hunkins (2009) claim that curriculum development comprises a curriculum planning, implementation, and evaluation.

When analyzing foreign technical education, it needs to be pointed out that curriculum improvement initiatives are developing more global in Europe with many higher educational institutions investigating to connect learning superiority with a bigger stress on, particularly, abilities such as critical thinking and productive exchanging information and ideas, causing acceptance to more automatic training and personal growth, and educating students for worldwide citizenship. Clearly, curriculum improvement and a more unified structure to learning do not essentially comprise “interdisciplinarity” and the instructional techniques involved in some explanations of training supplying are not exclusive to interdisciplinarity (Lyll, Meagher, Bandola & Kettle, 2015).

Austria has a number of great higher educational establishments proposing oil and gas-linked degrees courses such as engineering and geology. Due to its superb regulation of training and close collaboration with the petroleum sector, Montanuniversität Leoben has advanced into a globally recognised centre of training for petroleum specialists. Both bachelor’s or master’s programmes in oil and gas engineering courses are conducted in English; the bachelor’s programme takes seven semesters, while master’s programme continues during three semesters.

Promising petroleum experts should not only take pleasure and be concerned in technology and the natural sciences, be desirous about languages and overseas practices. According to preferred specialty, future petroleum professionals have to cope with stress and be responsible, operate within a team or propose reasonable idea actions and leadership competences. The Bachelors program considers all appropriate fields concerning oil and natural gas technology: seeking petroleum and natural gas (geosciences), surveying and modelling reservoirs (reservoir engineering), eradication with drills (drilling engineering) and the development and depository of fossil fuels (production engineering). The Masters



programme “International Study Program in Petroleum Engineering” delivers future petroleum engineers the chance to specialize in one of these key industrial sectors.

Global Study Program in Petroleum Engineering (the master’s programme) goals at cultivating skills and additional enriching scientific competences in the area of oil and gas engineering, identical to the regulations of Masters programmes at British and American higher educational institutions. Learners can take one of the next three fields: Drilling Engineering: motionless and active sketches of well-bore structures, the directions of drilling actions, planning, verifying and appraisal of drilling projects; Petroleum Production Engineering: preparation, layout and support of production systems and natural gas depository conveniences, techniques for enlarging the activity of petroleum wells, the usage of geothermal energy; Reservoir Engineering: monitoring the quality of geological simulation of reservoirs, execute ground investigations (Hole, 2017).

Future petroleum experts have the chance to acquire an understanding into their future jobs during their necessary useful field work. Alumni and alumnae are trained for their recruitment on drilling rigs and production sites, and as planning engineers in drilling, reservoir and production engineering as well as in the field of pipeline and plant engineering. They are ready to hold administration positions at all ranks. Montanuniversität has turned into a globally praised preparing centre for petroleum specialists. Lectures for the Petroleum Engineering Masters programme are delivered in English. The worldwide prominence of the program is more increased by a diversity of exchange programs.

Education, obtained in Britain, has the reputation of one of the best in the world. It is considered that the quality of British education rests on “three pillars”: excellent equipment of educational institutions, innovative educational technologies and cancellation of passive training system in favour of active individual work.

The University Heriot-Watt (HWU), the first technical college of the UK, was established in 1966. HWU has gained much popularity due to its school in training petroleum engineers. In 2002 the Department of Petroleum Engineering received the status of Institute. The graduates of the Institute of Petroleum Engineering HWU successfully work in many major oil companies far beyond the UK. HWU advances in the field of oil engineering are greatly appreciated around the world. HWU is actively working at international projects and cooperates with foreign universities.

The course “Oil engineering” is taught to future petroleum professionals during 12 months. This course consists of four semesters. During the first two semesters (from October to March) future petroleum experts get basic training in geology, geophysics, development, modeling, drilling, oil production and economics. As a rule, lectures are delivered by HWU Professors; classes are performed under the supervision of tutors. During the third semester (from April to June) students combined in groups prepare their projects of real oil fields development on the territory of the United Kingdom. During the fourth semester they work in oil companies and carry out individual research projects. Such specialists are the team of world-class in petroleum engineering, geology of oil and gas fields, construction of surface field facilities, and at present they are unique and have the potential to be popular in the future.

Robert Gordon University is situated in Aberdeen, “oil capital” of the UK, in the ancient town, where there are offices of more than 400 foreign companies, most of which operate in the field of oil and gas industry: Shell, BP and Total. Thus, 96 per cent of graduates are employed or continuing their postgraduate education within 6 months (after graduation), 90 per cent of courses offer students internships. A number of master’s degree



programs are proposed for future oilmen in economic direction as oil, for instance, MBA in petroleum field MSc in Oil and Gas/Petroleum Engineering or Master of Science in oil development. There are also annual programs for certified accountants and lawyers who work in the petroleum area: accounting in the petroleum sector and oil and gas and legislation.

The Department of Engineering at Aberdeen University is a general or integrated department which covers the main branches of engineering. Engineering degrees at Aberdeen are broadly based and do not require students to make an early commitment to a single discipline. Students taking the BEng and BscEng can gain an insight into the range of engineering disciplines in addition to developing a specialism, and this makes Aberdeen unique among Scottish Universities. It assists engineers in their professional careers to have a broad understanding especially in their capacity as managers. The amount of diversity in technology is very quick, joined departments which stress the united essence of engineering are being increasingly recognised as the most appropriate basis for the teaching of engineering. The Level 1 and 2 courses for BEng and BscEng students cover all branches of engineering and at Level 3 or 4 students may develop a specialisation or continue with a general or integrated programme. The principle aim of the undergraduate teaching is to educate students to a high standard in the fundamentals of engineering including, in particular, the principles and role of design and an appreciation of engineering practice and of the importance of economic, financial, safety, managerial and social factors. Additional goals involve the growth of communicative abilities, support creative and free thinking and consolidated training.

An innovative feature of the Department has been the introduction of courses in the third and fourth years in the relatively new subject of safety and reliability engineering. These courses may be taken by all engineering students. All courses in the University are fully modularised, which enhances their flexibility. In Engineering, students' choices are kept open by having the first two years of the four-year degree taught in common, so that decisions about which branch of engineering to specialize in can be made at a point when a student has some experience of engineering to help in making an informed decision. Petroleum engineering programs operate with the help of lectures, group tutorials and seminars, exclusive meetings between learners and personnel. The number of lectures differs greatly – from a few to 300 or more – but in all departments small-group training supports the lectures and in most departments it progressively moves lectures as the Honours programme advances. Evaluation comprises both regular assessment and recorded examination papers. Examination dates pursue each half-session of training. Designated degrees are achieved by accumulating the correct number of credits, including a proportion in the subject in which the designation is given; they are also unclassified. Honours degrees work similarly but at the end are classified as First, Second (Upper or Lower) or Third class.

The University of Stavanger (UiS) is considered to be one of the best places to study petroleum engineering in Norway, located in the undisputed oil capital, Stavanger. UiS is renowned for its close contact with the oil and gas industry, with the headquarters of 26 international oil and gas companies in the region. It offers English Master's programmes in a wide range of courses, including Offshore Technology, Environmental Technology, Petroleum Engineering, and Petroleum Geosciences Engineering. It was recently chosen by the Norwegian Government to host Norway's new cutting-edge petroleum research centre for Improved Oil Recovery, based on a national competition evaluating scientific quality and collaboration with industry. The degree in Petroleum Engineering has been offered since 1977 and is at the prominence of oil and gas engineering training all over the world. It offers three specializations; Well Engineering, Reservoir Engineering and Natural Gas





Engineering. The degree in Offshore Technology is stressed on technical resource management, risk management and problems connected to the construction of offshore establishment for the petroleum industry. This program combines three trends of specialization; Industrial Asset Management, Marine and Subsea Technology and Risk Management. The degrees have a global description and supplies both Norwegian and foreign learners.

Also, UiS has capable exploration groups in the offshore technology field. Within petroleum engineering, investigation fields contain drilling, natural gas, asset and decision determination, petroleum geosciences, construction and reservoir. Offshore technology analysis involves standards, hypotheses and techniques for preparation, growth, administration and disassembling technological systems and supplies, especially concentrated on offshore fittings.

No matter when petroleum engineers obtained their degree and or how many years they have been working in the petroleum industry, there are always new things to learn. True with any profession, it's essential to stay current on industry trends, to remain knowledgeable about new standards in any industry, and to learn about advances that have either been implemented or are on the horizon. Many engineers who work in the petroleum industry have been dedicated to their profession for many years. It can be difficult to keep up to date on industry changes and transitions without enrolling in a continuing education course, petroleum education certificate program or petroleum education workshop. Continuing education ensures that engineer expertise will be in line with others in the petroleum industry.

### CONCLUSIONS

Overall, in most European universities all facets of an excellent curriculum and programme are in quantity: experienced academic personnel, superb laboratory conveniences, a big consolidation with industry and a profound supply of possible students who are ready for an engineering learning. It is evident an equilibrium between the theory and practice in the design of higher education program. The language of curriculum outline can be puzzling and concern is demanded when working in various framework and collaborators. Comparing the structure of petroleum engineers professional training in Austria, Great Britain and Norway it has been revealed conceptually that at the current stage in above-mentioned countries professional training is carried out in the terms of stepwise education on the basis of competence, practice-oriented and learner-centered approaches, principles of humanization, the combination of national traditions with trends in international educational space directed to the development of a fundamentally new type of highly competitive expert in the petroleum industry.

The perspectives for further studies are the training students of Petroleum Engineering for interdisciplinary teamwork.

### REFERENCES

1. Diamond, R. M. (1998). *Designing and assessing courses and curricula: a practical guide*. San Fransisco: Jossey-Bass.
2. Downey, G. L., & Lucena, J. C. (2004). Knowledge and professional identity in engineering: code-switching and the metrics of progress. *History and technology*, 20 (4), 393–420.
3. Figgis, J., & Standen, A. (2005). *Training for skilled workers: lessons from oil and gas industry*. Adelaide, Australia: NCVER.



4. Hewitt, T. W. (2006). Implementing and managing the curriculum. In T. Hewitt (Ed.), *Understanding and shaping curriculum: what we teach and why?* (pp. 287–313). London: Sage Publications.
5. Hole, M. (2017). *Petroleum geology*. Retrieved from [www.abdn.ac.uk/study/undergraduate/degree-programmes/680/F602/geology-and-petroleum-geology/](http://www.abdn.ac.uk/study/undergraduate/degree-programmes/680/F602/geology-and-petroleum-geology/).
6. JISC. (2014). *Enhancing curriculum design with technology, outcomes from the JISC institutional approaches to curriculum design programme*. Retrieved from <http://www.jisc.ac.uk/sites/default/files/enhancing-curriculum-design.pdf>.
7. Knight, P. T. (2001). Complexity and curriculum: a process approach to curriculum-making. *Teaching in higher education*, 6 (3), 369–381.
8. Lattuca, L. R., & Stark, J. S. (2009). *Shaping the college curriculum: academic plans in context*. (2nd ed.). San Francisco, CA: Jossey-Bass Inc.
9. Lyall, C., Meagher, L., Bandola, J., & Kettle, A. (2015). *Interdisciplinary provision in higher education: current context and future challenges*. Retrieved from [https://www.heacademy.ac.uk/system/files/interdisciplinary\\_provision\\_in\\_he.pdf](https://www.heacademy.ac.uk/system/files/interdisciplinary_provision_in_he.pdf).
10. Lidgett, A. (2016). *Petroleum: common commodities and industries*. London: Kindle Edition.
11. McDavid, R. A., & Echaore-McDavid, S. (2006). *Career opportunities in engineering*. New York, NY: Ferguson.
12. Moon, J. (2002). *The module and programmes development handbook*. London: Kogan Page.
13. Neary, M. (2003). *Curriculum studies in post-compulsory and adult education: a teacher's and student teacher's study guide*. Cheltenham: Nelson Thornes Ltd.
14. O'Neill, G. (2015). *Curriculum design in higher education: theory to practice*. Retrieved from <http://www.ucd.ie/t4cms/UCDTLP0068.pdf>.
15. Ornstein, A. C., & Hunkins, F. P. (2009). *Curriculum foundations, principles and issues*. (5th ed.). Boston, MA: Pearson Education Inc.
16. SEFI. (2002). *The Bologna Declaration and engineering education – a discussion paper*. Brussels: European Society for Engineering Education.
17. Toohey, S. (2000). *Designing courses for higher education*. Buckingham: SRHE & Open University Press.



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## UNDERGRADUATE MEDICAL COMMUNICATION TRAINING BY MEANS OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE USA AND UKRAINE

### ABSTRACT

*The US medical schools are characterized by a significant progress in the usage of information and communication technologies for professional purposes and communication skills development. This advance was influenced by a sequence of social, academic, technological and financial conditions, namely: permanent research in the branch of modernization of higher medical education; application of a student-centered approach in education and patient-centered approach in clinical practice; physician-patient interaction skills development and their evaluation during clerkships; implementation of the subjects aimed at communication training into the undergraduate curricula; technological progress and implementation of ICTs in undergraduate clinical and communication training of future doctors. A profound analysis of the state of ICT implementation for professional communication skills development in Ukraine and the USA has showed hardly any common features. Thus, the process of ICTs application is advanced in medical schools of the USA and still challenging in Ukraine. In the USA communication training involves mainly virtual patients and in our country this training is more theoretical and applies university web-sites, on-line learning courses and social media learning sources. Material and technical as well as complicated political and economic conditions of higher medical institutions in Ukraine are established as the most significant factors that influence domination of the US universities over ours. The article states that determined progressive ideas of American experience in the scope of ICTs application for medical communication skills development should be considered in order to improve and modernize this process in our country.*

**Keywords:** higher medical education, undergraduate medical education, Ukrainian medical education, medical student, the US medical school, information and communication technologies in medical education.

### INTRODUCTION

Educational modernization in Ukraine is known as a key aspect of strategic national development. In higher medical education it is mainly associated with improvement of the quality of professional training and implementation of innovations into the academic process. The main directions of undergraduate medical education include the development



of professional competencies in practical clinical issues and communication as well as the usage of information and communication technologies (ICTs) for this purpose. The US medical schools are characterized by significant progress in this direction. The main goal of undergraduate medical training in the USA is education of highly-qualified physicians able to provide effective physician-patient interaction during medical encounter. Currently, this process has involved modern technologies. However, the US medical schools had to overcome a long and complicated process of computerization in the scope of undergraduate communication training. Their priceless experience has to be learnt and considered in order to prevent from many false or unconsidered actions that interfere with the process of modernization in Ukraine. Thus, a comparative analysis of peculiarities of higher medical education in these two countries is of utmost importance.

#### **THE AIM OF THE STUDY**

The paper aims at performing a comparative analysis of undergraduate communication training by means of ICTs in the US and Ukrainian higher medical education institutions. It describes the underlying conditions and the state of ICTs implementation in medical schools of the USA and Ukraine; highlights the progressive ideas of American experience in the scope of ICTs application for medical communication skills development in order to improve and modernize this process in our country.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

A study involved the application of a set of theoretical research methods. It describes, structurizes, generalizes and analyzes both American and Ukrainian theoretical and practical experience in ICTs implementation for undergraduate communication skills training; discusses and supplements previous scientific research on the problem. The importance of communication skills in medical practice as well as their development throughout undergraduate educational period is proved by numerous scientists. Thus, C. Boelen (2002), K. DeZee (2012), M. O'Connell & J. Pascoe (2004) dedicated their studies to the aspects of modernization in higher medical education; L. Mauksch (2013) analyzed and determined required communicative competencies for physicians; M. Bearman (2001), D. Cook (2008), P. Dev (2009), R. Kamassali & B. Ladak (2013) researched the ways of computerization in communication training. Studies of V. Artiomenko (2015), S. Riznychok (2015) and our papers (Manyuk, 2016) describe Ukrainian experience of communication skills development at higher medical education institutions. Information on current state of communication skills development was found and studied on the web-sites of the US medical schools.

#### **RESULTS**

The analysis of scientific evidence on the professional undergraduate medical communication training by means of ICTs at US universities has revealed underlying *social, academic, technological and financial conditions* which anticipated this process.

Thus, *the first* of them concerns the research in the branch of higher medical education, namely the improvement of its quality by actualizing university curricula and syllabi. Numerous ideas on innovation and their possible effectiveness were profoundly and durably studied, discussed and analyzed at many conferences or summits (Boelen, 2002). It has led to the development of powerful conservative system of higher medical education characterized by stability, productivity, competitiveness and high quality of professional training which is proved by first positions of medical education institutions of the USA in world famous ratings by the criteria of university admittance, medical research and service (Bearman, Cesnik & Liddell, 2001).



*The second* condition refers to modern reforms in US higher medical education caused by increased social requirements to medical service. They led to the development of student-centered approach in medical education and patient-centered approach in clinical practice.

*The third* condition is associated with the development of technologies, increase of social computer literacy and implementation of ICTs into medical education and practice. The later is one of the most important factors influencing current educational changes (DeZee, Artino, Elnicki, Hemmer & Durning, 2013).

Listed above conditions caused the necessity and triggered undergraduate communication training of future physicians. This process is directed at the development of skills required for proper interaction with a patient during medical encounter. Nowadays, this training lasts throughout all undergraduate period at US medical schools (Boelen, 2002, p. 592). Besides, implementation of subjects aimed at the formation of communicative competencies results from permanent scientific and methodical research highlighting required communicative skills, their analysis and systematization as well as explanation and standardization of evaluation methods (Mauksch, & Greer, 2013). Thus, it is determined as *the fourth* condition which anticipated professional undergraduate medical communication training by ICTs.

*The fifth* condition refers to gradual process of ICTs implementation in higher medical education. It means that, these technologies have been used since they have appeared on the educational market. However, such ICTs as virtual patients (VP – computerized models of medial encounter (Manyuk, 2016) were primarily used for the clinical skills training. Later, they gradually proved their effectiveness as the tools of interaction and communication skills improvement (Dev, Hoffer & Barnett, 2009).

The application of electronic learning tools into communicative training encourages the search for methods of their effective use which is *the sixth* condition. Currently, electronic and mobile learning tools have been implemented as the components of informal curriculum. These technologies include mainly online courses, virtual patients and social media (Cook, Levinson, Garside, Dupras, Erwin & Montori, 2009).

Thus, the systemic analysis of American experience indicates the adherence to the certain didactic principles that led to the grounded and effective implementation of ICTs into higher medical education. These principles include scientific, systemic and methodical, preventive and predictive ones. They are associated with continuous research, gradual implementation, considering the risks and possible learning outcomes.

In general, there are more different features in higher medical education of the USA and Ukraine than common ones. The common or similar ones include preclinical and clinical training in undergraduate years; modernization of educational process; development of virtual universities and online learning tools; attempts of mobile learning use in the process of professional medical training. The main differences comprise: the period and structure of higher medical education, duration and content of clerkships, standardized communication training throughout all university years; number of elective courses; state of ICT implementation for clinical and communication training; quantity and quality of studies investigating methods of modernization in higher medical education.

A profound analysis of the state of ICT implementation for professional communication skills development in Ukraine and the USA has showed hardly any common features. Thus, in the USA communication training is performed by such e-learning tools as virtual patients. They appeared to substitute standardized patients (SP)



which have been used in educational system of this country for many years. A standardized patient or simulated patient is an individual, who was trained to act as a real patient in order to reproduce certain medical problems. However, despite many advantages SP have some disadvantages including physical and psychological features (fatigue, predisposition etc.) that hinder the simulation of a clinical condition. By means of virtual patients students receive unlimited time and attempts to practice physician-patient communication, while teachers apply their standardized tools for the evaluation of communication skills.

In Ukraine communication training by ICTs is more theoretical than practical. The university curricula include the subjects directed at the improvement of communication skills in Ukrainian and English by such tools of electronic learning as university web-sites, on-line courses and social media learning sources (Manyuk, 2016). Virtual patients available in simulation centres are currently used for clinical skills development. Their implementation for communication training is both promising and challenging for our country as it requires significant financial and methodical background.

Material and technical conditions of higher medical institutions in the USA and Ukraine is the most significant factor that influences domination of the US universities over ours. The presence of the newest computerized, highly technological simulation centres equipped with modern devices and virtual patients as well as high speed Internet favour their application during undergraduate communication training of physicians in the USA (Stanford Medicine, 2018; Yele School of Medicine, 2018). Due to complicated political, economic and financial conditions Ukrainian medical universities have been behind the technological development, however in present much progress is associated with modernization of undergraduate clinical and communication training, namely: there are six simulation centers; most classrooms are equipped with multimedia and interactive technologies; universities are developing there virtual online learning platforms (Artiomenko, Shandra & Semchenko, 2015).

A possible strategic direction for both countries concerns the implementation of mobile technologies in the academic process. Almost all students use mobile devices with the access to the Internet. It can serve as the solution of the problem associated with material and technical provision which prevents from proper modernization in our country. However, in addition to the availability of mobile devices, mobile learning (m-learning) requires qualitative software and special learning tools that is a problematic issue for both American and Ukrainian educational systems (Kassamali & Ladak, 2013). Digital technologies are developing very rapidly. Ideally, their application in the academic process should be performed at the same or even higher rate.

The web-sites of the US medical schools are adapted to mobile usage. They developed mobile apps for different platforms. It improves the access to learning information available on university learning platforms and web-sites. The development of applications for the mobile devices is a significant aspect of actualization of the subject "Medical informatics" in the USA. One of new academic tasks is to train professionals able to develop mobile apps for their clinical purposes and communication needs. It should be noted that in our country the departments of medical informatics have a leading position in the formation of online bases of biomedical information and application of ICTs in educational process (Riznychok, Ilkanych & Boiko, 2015).

A slowed progress in mobile learning could be encouraged by the usage of apps that are free, while a great number of mobile apps in English and their poor quality in other languages cause the necessity of competencies in English language (Kassamali & Ladak,



2013). Fluency in foreign languages is considered the key competency for future physicians in our country. Ukrainian medical students improve their linguistic skills throughout all period of undergraduate education. They study one of the foreign languages as a compulsory subject during three terms of the first and the second years and also can choose it from the list of elective courses in all years of study.

In general the content of communication training differs in higher education institutions of Ukraine and the USA. According to the analysis of the curricula of the US medical schools the development of communication skills primarily involves preparation for the physician-patient interaction while in our country it is aimed at the development of competencies in languages and culture.

The humanitarian and cultural subject matters are not included in the compulsory curricula of the US medical schools. They are considered to have a secondary importance, thus they are proposed as elective courses. Communicative training is associated with a big amount of practical training with patients in all undergraduate years. Basically, the structure and content of practical training (clerkships) in Ukraine and the USA has many common features. It includes the following: four blocks of clerkships; clerkships in internal medicine, surgery, pediatrics, obstetrics and gynecology; increased attention to communicative and ethical culture of medical students during clerkships. The main differences comprise: the amount of practical training; standardized evaluation of practical communication skills. They are evaluated by test control, standardized and virtual patients (O'Connell & Pascoe, 2004). The evaluation criteria include ability to communicate verbally and non-verbally; ability to express empathy; skills of time planning and management etc. This direction is still challenging for our country. Theoretical and practical issues of professional communication in medicine are evaluated by the means of oral or written test control in Ukrainian higher medical education institutions.

As the result of comprehensive analysis we have determined some progressive ideas of the US medical schools and colleges that can be considered and implemented in order to develop communication skill training of future physicians in Ukraine. The ideas include: conducting the research in methodology of communication training and evaluation in the period of clinical training and clerkships; development of the curricula and syllabi partly directed at the development of professional communication skills; training future physicians for communicative interaction with patients; teaching communication during clerkships; development of proper evaluation methods and criteria and providing evaluation of communicative skills; increasing the period of clinical training with real patients; implementation of ICTs in higher medical institutions, namely simulating and virtual reality as well as mobile technologies with the aim of clinical and communication training; application of social media for communication skills development; development of mobile learning tools and their application in the process of communication training.

### CONCLUSIONS

Undergraduate communication training by means of ICTs in the US and Ukrainian higher medical education institutions was influenced by a sequence of *social, academic, technological and financial conditions*, namely permanent research in the branch of modernization of higher medical education; reforms that provided a student-centered approach in education and patient-centered approach in clinical practice; actualization of academic process in order to develop communication skills required in future carrier; focusing on physician-patient interaction skills and their evaluation during clerkships; implementation of the subjects directed at communication competence into the undergraduate



curricula; technological progress; implementation of ICTs in undergraduate clinical and communication training of future doctors. The state of ICTs implementation is advanced in medical schools of the USA and challenging Ukraine. Thus, progressive ideas of American experience in the scope of ICTs application for medical communication skills development should be considered in order to improve and modernize this process in our country.

Received research results indicate the requirement of further profound studies on the subject; development of online learning tools for communication skills development; providing guidelines for their efficient application in the undergraduate process of higher medical education.

#### REFERENCES

1. Artiomenko, V., Shandra, M. & Semchenko, S. (2015). *Implementatsiia innovatsiinykh tekhnolohii v medychnu osvitu*, Materialy Vseukrainskoi naukovy-metodychnoi konferentsii z mizhna-rodnoiu uchastiu "Vprovadzhennia innovatsiinykh tekhnolohii u medychnu osvitu: problemno-oriientovane avchannia ta virtualni patsiienty". Zaporizhzhia: ZDMU.
2. Bearman, M., Cesnik, B., & Liddell, M. (2001). Random comparison of virtual patient models in the context of teaching communication skills. *Medical education*, 35, 824–832.
3. Boelen, C. (2002). A new paradigm for medical schools a century after Flexner's report. *Bulletin of the World Health Organization*, 80 (7), 592–593.
4. Cook, D., Levinson, A. J., Garside, S., Dupras, D. M., Erwin, P. J., & Montori, V. M. (2008). Internet-based learning in health professionals: a meta-analysis. *JAMA*, 300, 1181–1196.
5. Dev, P., Hoffer, E., & Barnett, O. (2009). *Computers in medical education. Master educator fellowship*. Retrieved from <http://mef.med.ufl.edu/files/2009/10/Computers-in-Medical-Education.pdf>.
6. DeZee, K. J., Artino, A. R., Elnicki, D. M., Hemmer, P. A., & Durning, S. J. (2012). Medical education in the United States of America. *Medical teacher*, 34, 7, 521–525.
7. Kassamali, R., & Ladak, B. (2013). Smartphones make smarter students. *Medical Teacher*, 35 (5), 425.
8. Manyuk, L. (2016). Virtual patients as the tools of professional communicative training in the US higher medical education. *Eureka: social and humanities*, 5 (5), 60–68.
9. Mauksch, L., & Greer, H. T. (2013). Design, dissemination, and evaluation of an advanced communication elective at seven U.S. medical schools. *Academic medicine*, 88 (6), 843–851.
10. O'Connell, M., & Pascoe, J. (2004). Undergraduate medical education for the 21st century: leadership and teamwork. *Family medicine*, 36, 51–56.
11. Riznychok, S., Ilkanych, K., & Boiko, O. (2015). *Zastosuvannia pryntsyypiv problemno-oriientovanoho navchannia pry provedenni praktychnykh zaniat z medychnoi informatyky*. Materialy Vseukrainskoi naukovy-metodychnoi konferentsii z mizhnarodnoiu uchastiu "Vprovadzhennia innovatsiinykh tekhnolohii u medychnu osvitu: problemno-oriientovane avchannia ta virtualni patsiienty". Zaporizhzhia: ZDMU.
12. *Stanford Medicine*. (2018). Retrieved from <http://med.stanford.edu/>.
13. *Yale School of Medicine*. (2018). Retrieved from [http://medicine.yale.edu/education/rebuild/secondLook16Apr15\\_217799\\_1095\\_5.pdf](http://medicine.yale.edu/education/rebuild/secondLook16Apr15_217799_1095_5.pdf).





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**INFLUENCE OF WESTERN EUROPEAN PEDAGOGICAL TRENDS  
ON DEVELOPMENT OF YOUNG TEACHER'S PEDAGOGICAL MASTERY  
IN THE LATE 19TH – THE EARLY 20TH CENTURIES**

**ABSTRACT**

*The end of the 19th and early 20th centuries is characterized by justification of reforming pedagogical trends in Western Europe and accumulation of relevant ideas required to create a new type of school, educate independent and initiative individuals and improve teacher training. Based on comparative pedagogical analysis of the mentioned period, the content of individualistic (free creativity of students and teachers), experimental (studying general patterns and individual characteristics of students' physical and spiritual development), social (establishing relationships between education and community), Herbartinian (educational teaching, development of various interests), monistic (methodological principle of continuity in cognition, unity and invariance of world laws) pedagogical trends have been analyzed. It has been found that the conceptual foundation for foreign pedagogical trends was the study of personality traits of the student as "the object of pedagogical influence", and their unifying basis was a well-developed personality of the student as well as their cognitive activity. It has been revealed that young teachers are primarily responsible for developing active, independent, creative personalities, able to change the world around. It has been determined that an important factor in developing their pedagogical mastery is the ability to analyze and use innovative ideas of representatives of the latest pedagogical trends, to master new educational technologies, methods and, of course, special skills in developing the child's personality. It has been proved that young teachers' career success is associated with development of their personal qualities, namely, friendliness, humanity, great love and care for children.*

**Keywords:** *Western European pedagogical trends, teacher, young teacher, student personality, independence, cognitive activity, advanced educational technologies, teaching methods.*

**INTRODUCTION**

At the current stage of developing the Ukrainian state, the problem of reforming the national school education is of great significance. The main principle of future transformations should consist in educating the younger generation and enhancing a high culture and equal opportunities (Ministerstvo osvity i nauky Ukrainy, 2016). Thus, there appears to be a need for quality training of teaching staff, who should be creative, have a high level of pedagogical mastery and professional competency and be able to self-develop. Graduate teachers, who only start their teaching career, should become "the agents of changes" of a modern Ukrainian school and therefore reform educational space for the next decades. Under these conditions, foreign experience in education development and its creative implementation into the national pedagogical theory and practice are rather important.



One should pay particular attention to the analysis of historical and pedagogical experience in conducting comparative pedagogical researches in the late 19th – the early 20th centuries, when the ideas of reformatory pedagogy emerged, the diversity of pedagogical concepts was justified, a new type of secondary school aimed at educating independent and initiative individuals who are able to creatively use the acquired knowledge was established and eventually the conditions for teachers' personal and professional development were provided.

#### **THE AIM OF THE STUDY**

The aim of the study consists in studying the ideas of reformatory pedagogy in the late 19th – the early 20th centuries as well as the trends in using progressive experience in developing pedagogical mastery of young teachers.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

The object of the study of comparative pedagogy in the late 19th – the early 20th centuries was advanced foreign pedagogical experience through the prism and priorities of the national school and pedagogy. It was believed that one of the most important trends in the state policy of the leading countries should be studying educational improvements all over the world and appointing government officials with significant powers for this matter (Muzychenko, 1919, p. 5).

Ukrainian scholars had the opportunity to study foreign experience by familiarizing themselves with the state education documents, professional literature and during intensive participation in the education process when abroad.

There were several approaches to conducting scientific researches on problems of foreign pedagogy according to the level of comparative analysis: elementary translations of scientific studies without any reductions and interferences; translation of the author's text with its further analysis; a thorough comparative pedagogical analysis of the text, taking into account the patterns of the national education system (Sukhomlynska, 1992, pp. 5–6).

Analyzing the state, patterns, trends in education development in different countries, Ukrainian comparatists attempted to introduce the constructive aspects of foreign experience into theory and practice of developing a Ukrainian school and teacher training (S. Ananiin, M. Askerman, M. Bunge, G. Genkel, G. Grinko, A. Hotalov-Hotlib, M. Korf, O. Levitskiy, Ya. Mikhailovskyi, P. Mizhnev, A. Musin-Pushkin, A. Muzychenko, S. Rusova, E. Yanzhul et al.). The authors emphasized on importance of studying development of school systems in European countries (Genkel, 1911; Hotalov-Hotlib, 1929) and the USA (Yanzhul, 1918); analyzed the activity of educational institutions (Mizhnev, 1913; Musin-Pushkin, 1912; Rusova, 1910); studied the problem of professional pedagogical training of teachers (Bunge, 1877; Muzychenko, 1919); justified the ways of introducing progressive foreign experience in Ukraine (Ananiin, 1924; Askerman, 1915; Grinko, 1915; Korf, 1879; Levitskiy, 1912).

Of considerable interest are the works on the history of the national education of Ukraine (O. Antonova, L. Berezivska, N. Demianenko, N. Dichek, N. Kalenyshenko, I. Likarchuk, V. Maiboroda, S. Melnychuk, B. Stuparyk, L. Vovk, M. Yarmachenko et al.); specificity of teachers' training in historical progress (N. Demchenko, N. Demianenko, H. Feshchenko, S. Honcharenko, Yu. Radchenko, O. Sukhomlynska et al.); theoretical and methodological foundations of pedagogical mastery development (Ye. Barbina, A. Kuzminskyi, O. Lavrinenko, M. Leschenko, O. Otych, L. Savenkova, O. Semenoh, M. Soldatenko, I. Ziaziun et al.).



To conduct the research, a complex of interrelated general scientific, historical, theoretical and empirical methods was used: historical pedagogical analysis and synthesis, constructive genetic method, historical comparative method, historical pedagogical analysis of archival and literary sources.

### RESULTS

The development of foreign pedagogical thought in the late 19th – the early 20th centuries was directly influenced by such philosophical trends as pragmatism, positivism, personalism, neo-Kantianism, as well as various psychological and sociological theories. There were two main paradigms, namely, pedagogical traditionalism that is continuation of the previous pedagogical thought and reformatory pedagogy or a new education – development of new pedagogical concepts and ideas. Traditionalism refers primarily to Herbartinian pedagogy and pedagogy focused on philosophical understanding of education. Reformatory pedagogy combines numerous concepts and trends in social and political thought, which was aimed at radical changing the nature of school activities (Dzhurinskiy, 2000).

The ability to analyze and use innovative ideas of the representatives of the latest pedagogical trends in the early 20th century was considered to be an important factor in the development of young teachers' pedagogical mastery. Only a theoretically trained teacher, acquainted with modern scientific terminology, advanced teaching methods and technologies was able to masterfully manage the education process. Graduate teachers acquired the knowledge of individualistic, experimental, social, Herbartinian and monistic (biological) trends in pedagogy.

The representatives of individualistic pedagogy or personality pedagogy (F. Gansberg (1871–1950), H. Gaudig (1860–1923), H. Scharrelmann (1871–1940) et al.) considered the education process to be unlimited creativity of teachers and students, which excluded any suppression of student personality and any regulation of their activities. According to the views of German educators, the system of school education in one way or another harmed the child. Teachers' pedagogical mastery was defined as “advanced pedagogical skills” and consisted in the fact that teachers were guided only by pedagogical tact and rejected all obligatory methods in their activities. Teacher personality and talent were seen as the most important tools of education.

The process of developing child's personality provided for creating favourable conditions for their creative self-development, mainly sustained by aesthetic experience. “The Bremeners take into account neither ideas, nor their change and clarity; they prefer creativity, feelings, which is why they sacrifice them for intellect” (Muzychenko, 1912, p. 7). The organization of students' creative activities was aimed at developing their cognitive activities, namely, writing compositions, solving problem, etc.

The founders of experimental pedagogy (“precision pedagogy”, “the new pedagogy”) (E. Meumann (1862–1915), W. Lay (1862–1926)) studied general patterns and individual peculiarities of the child's physical and spiritual development by using new research methods. The content of experimental pedagogy accumulated diverse facts of child psychology, physiology and sociology. The main attention was paid to the process of studying the child, rather than the learning process. Such empirical methods as observations, empirical experiments, studying children's works, questionnaires, pedagogical experiments, statistical methods were primarily used during these studies. Schools were to assist children in adapting to school environment, to create a school community that would simulate the natural and social environment. Consequently, teachers were obliged to apply active teaching methods, organize students' practical activities and develop their cognitive skills, etc.



Social pedagogy (founded by P. Natorp (1854–1924)) emerged due to the fact that the problem of the child in the 20th century was considered to be a social problem. Social pedagogy was to establish the relationship between education and community. The main ideas of P. Natorp's pedagogical system consisted in the following: education should be aimed at developing true citizens of the state of law; the individual can only exist in the human community and due to it; school is the most important center of society and is represented as the union of teachers and students; the content of education is realized through acquisition of scientific, moral, aesthetic and religious beliefs, development of the individual's will, sensitivity and spirituality; will power, clarity of thought and reasoning achieved only due to independent intellectual activities, active reconsideration of study material, rather than mere listening and memorizing should become obligatory elements of children's characters. The criteria for young teachers' erudition were active perception of all human, integrity of thoughts, task performance independence, the unity of reason, will and action (Muzychenko, 1919, p. 70).

The founder of Herbartinian pedagogy is J. Herbart (1776–1841), who viewed pedagogy as science and art. The scholar defined the content of pedagogy as an integral system of knowledge (pedagogy as a science) and associated pedagogy with the skills required to solve a particular pedagogical problem (pedagogy as an art). The school, in his opinion, was supposed to ensure general and comprehensive development of children, to promote their activity and amateur activities, to support their striving self-development.

Solving the children's discipline problem, J. Herbart believed that it was necessary to apply coercive pedagogical influence (threat, supervision, prohibition, children's involvement in various activities, etc.). In addition, the educator noted that the teacher (the artist of education) should mitigate the children's discipline with love ("pedagogical love" as the unity of feelings between teachers and children), whereas the means of pedagogical influence should not cause children's resistance. J. Herbart stated that the teacher being an authoritative educator must take into account individuality of student personality, consider the child to be the highest value and nurture their positive traits. Child management was aimed at involving them into useful activities and interesting lessons.

J. Herbart introduced the concept of "educational teaching" into theory of pedagogy, based on the fact that specific functions of education and teaching are interconnected and complement each other. By presenting the new knowledge, the teacher forms ideological, social and other guidelines, and thus develops the child in general. The scholar considered the development of diverse interests (empirical (motivating towards observation), contemplative (motivating towards reflection), aesthetic (refining the aesthetic taste), sympathetic and social (promoting the feeling of sympathy), religious (spiritual perception of the world)) to be extremely important for the realization of the objectives of educational teaching and the main aim of pedagogical activity (Muzychenko, 1919, p. 25).

Reflecting on the problem of teaching implementation, which was aimed at developing students' diverse interests, J. Herbart introduced the organization of students' educational and cognitive activities, associated with acquisition of the new knowledge as a certain sequence, namely, formal levels of teaching. Herbartinian pedagogy became the most relevant introductory course for young teachers at the beginning of teaching career, since it promoted a complete thought and facilitated the coherent process of mastering knowledge.

J. Herbart outlined clear requirements for professional training, development of pedagogical mastery and individual characteristics of the teacher. The scholar believed that the art of education was acquired only during practical activities and pedagogical tact was



the “transition” between theory and practice. Moreover, J. Herbart indicated that student freedom is an important condition for achieving the main aim of education.

E. Haeckel (1834–1919) was thought to be an enthusiastic apologist for the monist theory and the founder of the Monist League. His scientific theory was based on continuity of cognition as well as unity, universality, necessity and invariance of world laws, required to develop the true and sustainable worldview (Muzychenko, 1908, p. 13).

E. Haeckel’s research interests included the problems of reforming the existing education system in Germany, namely, the theory of school leadership, which studied the influence of church, state, community and family on school, and defining the aim of school education, which would develop the child’s independent thinking, clear perception of the acquired knowledge and familiarity with the natural relationships between phenomena; the science of development as a guiding principle in teaching; genetic approach to teaching, aimed at ensuring students’ amateur activities; definition of the education content with the prevalence of natural sciences; justification of the teacher’s role in the education process organization.

In the context of monistic ideas, the teacher was supposed to prepare the child for life and impart the accumulated experience on them, taking into account individual characteristics. The defining component of teachers’ pedagogical mastery was selection of relevant teaching forms.

Based on the analysis of foreign trends in the late 19th – the early 20th centuries, one can conclude that the world’s leading experts in school theory and practice solved identical problems, but diverse approaches led to controversy between them. The concepts of all pedagogical trends were based on the idea that the student was “the object of pedagogical influence”, however different trends mainly dealt with development of various characteristics of “self”: Herbartinian pedagogy – intellect, individualistic pedagogy – feelings, social pedagogy – freedom, experimental pedagogy and monists attempted to equally study and influence different aspects of the child’s psyche.

However, it must be noted that one should not formally combine diverse approaches and therefore distinguish the most original ideas of each pedagogical trend. The teacher was supposed “to equally recognize all pedagogical trends” rather than outline the most interesting approaches to teaching (Muzychenko, 1919, p. 90). The principle of labour school became the unifying principle for this matter, since it harmoniously developed student personality, their cognitive activities and worldview. Thus, the mentioned above facilitated the establishment of a unified labour school in Ukraine. In unified labour schools, teachers strived to develop their pedagogical mastery, which was understood as the highest level of pedagogical action, expressed through special skills required to professionally apply the principles ensuring development of children’s independence and initiative, motivating them toward positive actions and establishing personal responsibility for their behaviour.

The process of developing pedagogical mastery of young teachers was associated with studying the ideas of philosophical and pedagogical trends, the ability to analyze learning objectives, to understand the essence and the peculiarities of the latest educational technologies (developmental and research) and teaching methods (heuristic, task-based, project methods, artistic education methods, trip-based methods, complex learning, etc.) and to operate methodical techniques. This approach was based on good relationships between teachers and students, teachers’ care for students and students’ respect for teachers.



## CONCLUSIONS

The analysis of Western European pedagogical trends in the late 19th – the early 20th centuries showed that the process of developing young teachers' pedagogical mastery had been influenced by the ideas of individualistic, experimental, social, Herbartinian and monistic (biological) trends in pedagogy. Thus, the increase in the level of pedagogical mastery was associated with thorough theoretical preparation and acquisition of innovative technologies and teaching methods. Young teachers were supposed to educate active, independent, creative individuals able to change the world around them.

Prospects for further researches involve studying foreign innovative forms, methods and technologies of teaching in the late 19th – the early 20th centuries and relevant trends in their implementation, taking into account national characteristics, application of local history and natural study material.

## REFERENCES

1. Ananiin, S. A. (1924). *Trudove vykhovannia, yoho mynule i suchasnist*. Kyiv: Knyhospilka.
2. Askerman, M. (1915). *Sprava vykhovannia ta osvity v Ukrainskii Sotsialistychnii Respublitsi*. Kyiv: I. Kushnarov & Co.
3. Bunge, M. (1877). *Gosudarstvo i narodnoe obrazovanie nachalnoe i professionalnoe, to est uchenoe, realnoe i khudozhestvennoe, v Germanii, Anglii i Frantsii: ocherki issledovaniya Lorentsa Shteina: izvlechennoe iz sochineniya: Das Elementar und Berufsbildungswesen von L. Stein*. Kyiv: Universitetskaya tipografiya.
4. Dzhurinskiy, A. N. (2000). *Pedagogika: istoriia pedagogicheskikh idei*. Moscow: Pedagogicheskoe obshchestvo Rossii.
5. Genkel, G. (1911). *Narodnoe obrazovanie na Zapade i u nas*. Saint Petersburg: Brokgauz i Efron.
6. Grinko, G. (1923). *Nash put na Zapad. Put prosveshcheniia*, 7–8, 15–16.
7. Hotalov-Hotlib, A. H. (1929). *Formy hrupuvannia uchniv dlia dydaktychnykh tsilei po shkolakh SSHA y Nimechchyny u zviazku z suchasnym pedahohichnym rukhom*. Odesa: E. Fesenko's publishing house.
8. Korf, M. (1879). *Itogi narodnogo obrazovaniia v evropeiskikh stranakh*. Saint Petersburg: Peterburgskii uchebnyi magazin.
9. Levitskiy, A. (1912). *Iz teorii i praktiki sovremennoi germanskoi pedagogiki*. Kazan: Lito-tip-fiya.
10. Mikhailovskiy, Ya. T. (1881). *Ocherk sovremennoho sostoianiia zagranichnoi narodnoi shkoly*. Saint Petersburg: Tipografiya Doma prizreniia.
11. Ministerstvo osvity i nauky Ukrainy. (2016). *“Nova ukrainska shkola: prostir osvitnikh mozhlyvostei”*. *Proekt dlia obhovorennia*. Vziato z <https://osvita.ua/doc/files/news/520/52062/new-school.pdf>.
12. Mizhnev, P. (1913). *Glavnye momenty v razvitii Zapadno-Evropeiskoi shkoly*. Moscow: “Polza” V. Antik i K°.
13. Musin-Pushkin, A. (1912). *Sbornik statei po voprosam shkolnogo obrazovaniia na Zapade i v Rossii: po lichnym nabliudeniim*. (T. 1–2). Saint-Peterburg: tipografiya M. Stasiulevicha.



14. Muzychenko, A. (1912). Konspekt lektzii po pedagogike, pročitannykh na zemskikh letnikh kursakh v Poltave. *Narodnaia Entsiklopediia nauchnykh i prikladnykh znani*, 9, 134–157.
15. Muzychenko, A. (1908). Monizm i shkola. *Russkaya shkola*, 4, 3–30.
16. Muzychenko, O. (1919). *Suchasni pedahohichni techii v Zakhidnii Yevropi i Amerytsi*. Kyiv: Drukarnia Vseukrainskoho kooperatyvnoho soiuzu.
17. Rusova, S. (1910). Narodna pochatkova osvita v Belhii. *Svitlo*, 1, 29–36.
18. Sukhomlynska, O. V. (1992). Zarubizhnyi pedahohichniy dosvid v Ukraini v 20-ti roky. *Ridna shkola*, 2, 3–7.
19. Yanzhul, E. K. (1918). *Trudovoe nachalo v shkolakh Evropy*. Moscow: Narodnyi uchitel.



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### **IMPORTANT ASPECTS OF TESTING KNOWLEDGE AND SKILLS OF THIRD GRADE STUDENTS IN LIGHT OF OMNIBUS SURVEY: POLISH EXPERIENCE**

#### **ABSTRACT**

*This article deals with important aspects regarding the checking and assessment of the knowledge and skills of third-graders (more specifically pupils ending the third grade of primary school). The text makes use of the Omnibus research reports: M. Czajkowska, B. Szurowska (2016). It is worth noting that conducting tests in children of this age should be different than in adults (for example due to their emotional development, motivation, and self-esteem). The article is innovative in nature, because the authors pay attention to certain behaviors of the teachers and the children which have not been considered noteworthy before, such as: preparation of students, consisting not only of the key skills and knowledge determined by the requirements of the obligatory educational program but also providing emotional support, providing a pleasant atmosphere, indicating ways and methods of talking with children and parents about test results and supporting the children's development in the specific areas that need improvement. The behavior of the children during tests, e.g. the possibility of using the available tools (e.g. ruler, scissors, dictionary, etc.) and the ability to solve the problem and apply different strategies in an emotionally difficult situation. The data presented in the article allows to determine both the amount of skills and knowledge that third grade students have in the field of Polish and mathematics as well as to open a discussion about a new approach to conducting tests among young students (focused on the child, its needs and feelings, and understanding how important teacher-parent cooperation is for the development of children at this age).*

**Keywords:** early school education, academic and mathematical skills of students, measurement of skills.

#### **INTRODUCTION**

Checking and assessing of academic achievements is an important aspect of the learning and teaching processes (Niemierko, 1997, p. 172; Nowik, 2011, pp. 180–199). The academic achievements of a student consist of their acquired knowledge and skills. A manifestation of which is the ability of the student to perform certain tasks. Checking is





done to make sure whether the student has mastered the given knowledge and skills. It consists of comparing a task performed by the student with a model solution. The level of execution of this task involves assessment, which constitutes grading the student's academic achievements on a scale (Nowik, 2011, p. 183). B. Niemierko (1997, p. 172) states that the teaching and assessing processes are intertwined. The analysis and recording of the students' achievements must take place during the entire didactic process, from the initial diagnosis to checking and assessing the final result of learning and teaching. One of the tools used for checking and assessing the achievements of students are tests (Niemierko, 1997, pp. 180–181).

According to E. Gruszczyk-Kolczyńska (2013, p. 161), most tests created by teachers does not meet the standards of didactic measurement. B. Nawolska and J.Żądło (2012, p. 25) state that most early childhood education teachers are unable to create a test that would objectively, reliably, correctly, and universally check and assess the skills of their students, especially if the test is to be used to check and assess the achievements of the students at the end of a school year or the first stage of education. In the case of mathematics, they require the tasks to be solved solely by making use of the method they had introduced, in many cases rejecting solutions, which are correct, but non-standard (Czajkowska, Grochowalska, and Orzechowska, 2015, pp. 16–18). An alternative to teacher-prepared tests is tests created by a team of experts. These include standardized tests (Niemierko, 1997, p. 181) and the so-called expert tests. Having students solve standardized and expert tests is important both for the students as well as their teacher. It allows the child to test their abilities in new, unknown conditions; it also teaches them how to deal with stress and uncertainty.

We think standardized and expert tests have value and should be used. However, past tests, arranged e.g. by the Central Examination Committee (CKE) or Operon Publishing House, were modeled after the exams prepared for older students. Not all third-grade students are on an emotional and intellectual level high enough to deal with the requirements posed by such tests. This is why, together with other members of our team, we prepared the Omnibus study, the aim of which was to not only check the knowledge and skills of the participating students but was also meant to be carried out in conditions as favorable to third graders as possible.

#### **THE AIM OF THE STUDY**

The aim of the study is to highlight important aspects of testing knowledge and skills of third grade students in light of omnibus survey in Polish experience.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

Omnibus, the national skill assessment of third grade students, is being carried out by the MAC Edukacja publishing company. The study has so far been carried out twice – in the years 2016 and 2017. Taking part in the study was voluntary and free of charge. The condition for participation was for the principal of the school to apply online on behalf of a class.

The main goal of the study was to determine the level of proficiency of third grade students regarding the use of those key skills in the fields of Polish and mathematics which are crucial for further education and everyday life. In the case of Polish education, the skills involve reading and text analysis as well as proper writing and the preparation of a written work (including correct grammar and orthography). The key mathematics skills include: performing calculations, taking measurements, mathematical modeling, creating strategies for task solving and making use of the preferred mathematical reasoning.



Every edition of the study consists of two parts – one of the parts concerns Polish skills, while the second part concerns mathematics. The study differed from the tests being carried out by other institutions (e.g. the National Third Grade Ability Test – OSKT, or the National Third Grade Skill Assessment – OBUT). One of the significant differences was that the student was able to make use of various teaching aids prepared by the teacher when solving the tasks. The teacher's attitude was of importance during the Omnibus study – observing every student, being friendly and compassionate, properly reacting to any anxieties and doubts the children may have. Therefore, the teacher was able to approach a distressed student and support him emotionally without providing any substantial guidance regarding the tasks.

The tests, both the Polish and mathematics section, were prepared for two groups (versions A and B) in a way that allows the corresponding tasks in both versions to be at the same difficulty level and to check the same abilities. It is worth noting that this form of checking a student's knowledge and skills puts them in a new and difficult situation, which can cause them to use various strategies they deem effective, e.g. trying to copy their friends' answers. This is significantly undesirable not only because it will not allow for assessing the actual abilities of the child, but also because the child is not putting in effort to solve the problem, fostering the wrong attitude, which, when established, the child will surely repeat in the future. The aim of splitting the students into groups was to prevent such behavior and to motivate the children to work on their own.

As almost every class has children gifted in either Polish or mathematics who can solve tasks more efficiently and quickly than others, there were additional tests created especially for them. The aim was for the children who are quicker at completing tasks than others to not be bored and tried their hand at solving more difficult tasks, similar to those used at contests. There was only one version of the additional test in all parts of the study.

Both in the Polish section as well as the mathematics section, the total time allocated for solving the tasks was 90 minutes of efficient work. This was the time needed to solve the tasks from the core part of the test. A shorter amount of time would require less tasks to be included, which would not allow for a reliable assessment of the abilities of the students. However, since third grade students can have difficulty concentrating and working for such a long period of time, the teacher was permitted to make use of two breaks during both parts of the test (Polish and mathematics). The teacher decided on the amount and length of the break, depending on how tired or bored the students are. Due to significant developmental differences between children, the teacher could extend the total time by 15 minutes for students who had writing difficulties or read the texts of the mathematics tasks to those who had reading difficulties.

After the test, the teacher graded their students' work in accordance with the test key and entered the results via a website. After entering the results, the teacher received a report which contained in-depth information regarding the results of the students' abilities in Polish and mathematics. There were also three recommendations included. Two were for the teacher, while the third was intended for the parents. The recommendations were adapted to the results of a particular child. Those intended for the teacher included suggestions regarding working methods for the entire class as well as specific students. The aim was for the recommendations to help early school education teachers in planning their lessons in the last months of the current school years to prepare the children for a smooth transition to their next stage of education. A child, just like an adult, is most eager to learn



when it is motivated, interested, and stimulated cognitively and emotionally. This is why the authors paid close attention to planning the activities that are to be done with the child by creating educational situations and tasks that motivate the child to make an effort. An example might be improving reading and writing skills, which must include arousing the child's interest in books and literature (especially in cases when children are having difficulties when learning reading, and practicing reading itself is considered a lot of effort for young children). It is important to create educational situations conducive to making the child interested in books and motivating them to read on their own, which entails planning regular activities to foster reading which are prepared while considering the changing abilities and skills of children regarding this field. The activities should be multifaceted: reading aloud done by the teacher, family reading, introducing the child to the literary world and fostering an interest in reading based on any individual interests of the child that have been identified (Szurowska, 2014, pp. 62–63).

It would be beneficial for early education teachers to cooperate with the teachers of Polish and mathematics who will be teaching the students in fourth grade and jointly analyze the results and discussed the included recommendations. Recommendations regarding the entire student body could help the teacher plan the next years of their work with the students starting school in September. The recommendations intended for parents included activities (e.g. games and didactic activities) to be performed outside of the school environment to support the child's development. A child's education does not happen only at school, but also outside of its walls, which is why an actual parent-teacher cooperation is extremely important (especially when it comes to students with difficulties). Only a well-planned teacher-parent cooperation can bring the desired effect and ensure that the students function well at school. Furthermore, the teacher also received a second report at a later date, which compared the core test results of the teacher's class with the results of all students from the school, municipality, voivodeship, or country, taking part in the study.

## RESULTS

The abilities of the students regarding the Polish language were tested in four fields: *reading (including text analysis abilities)*, *writing (including written work preparation abilities)*, *grammar (knowledge of grammar rules and their usage)*, *orthography (knowledge of orthography rules and their usage)*.

It is important to note that Polish language abilities are closely linked and significantly co-dependent, which is why it is often difficult to assess one ability without including another, e.g. a child who has writing difficulties and still strongly focuses on the technique is likely to make more grammar mistakes when creating a written work, even though the child can be observed building proper sentences when speaking.

In both the first and second editions of the study, the core test consisted of 14 tasks. Due to the co-dependence of abilities, the same tasks often assessed abilities from different fields. In the 2016 edition, the student could acquire a maximum of 14 points in the core test in the field of *reading* (including text analysis), 17 points in the field of *writing* (including preparation of written work), 33 points in the field of *grammar* (knowledge of grammar rules and their usage) and 25 points in the field of *orthography* (knowledge of orthography rules and their usage). In total, the student could acquire 89 points in the Polish language section. In 2017, the distribution was as follows: 12 points in the *reading* field, 24 points in the *writing* field, 30 points in the *grammar* field, and 22 points in the *orthography* field. In total, the student could acquire 88 points.



The additional test consisted of 7 tasks in both the 2016 as well as the 2017 edition, and, similarly to the core test, the tasks allowed to assess different, co-dependent abilities. The additional test was more difficult, as it assessed extracurricular and more complex Polish language skills. In 2016 it was assumed that reading (including basic text analysis abilities) should not cause difficulties to the child, which is why more attention was paid to the abilities acquired after reading: writing, written work preparation, and proper grammar and orthography. In the 2016 edition of the study, the student was able to acquire a maximum of 1 point in the field of reading (including text analysis) and 13 points in all remaining fields, which means that the total amount of obtainable points in the additional test was 40. In 2017, however, the prose text was replaced with relatively difficult poetry. It was possible for the student to acquire a maximum of 5 points in the *reading* field, 18 points in the *writing* field, 16 points in the *grammar* field, and 8 points in the *orthography* field in the additional test. The abilities of the students regarding mathematics were tested in four fields: *counting efficiency, geometry, mathematical reasoning, text-based tasks*.

The structure of the mathematics part of the test was identical in both editions. The core test consisted of 15 tasks. Three of those tasks tested counting efficiency abilities, four tested geometry-related abilities, four tested mathematical reasoning abilities, and four tested text-based task solving abilities. The student was able to obtain a maximum of 10 points per task solved in all fields (40 points total). The additional test consisted of 8 tasks, two per field. The student was able to obtain a maximum of 5 points per task solved in all fields (20 points total). The tasks were significantly more difficult than in the core test. They had an unusual form and required analyzing dependencies, combining different pieces of information or considering different possibilities. They were intended for mathematically gifted students, who enjoy and feel satisfied by solving more difficult tasks.

The results of the students in both the Polish language as well as mathematics section of the test are discussed further in the work. Due to the co-dependency of the Polish language abilities, the different abilities of a child were assessed at the same time when solving a task. In the mathematics section, however, each task assessed a specific ability. This is why the evaluation of the results differs between the two sections.

#### Study results of Polish language section of core test

In the 2016 edition, 17.331 students took the Polish language section of the core test at the national level. In 2017, the number of students increased to 52.836.

Chart 1 presents the percentage distribution of the points obtained in the Polish language skill assessment part of the 2016 edition of the core test, while chart 2 presents the results from the 2017 edition.

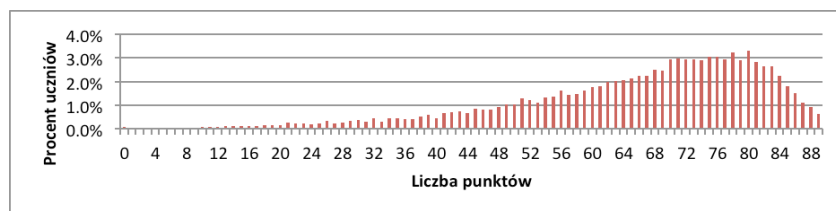


Chart 1. Percentage distribution of points obtained by students in Polish language skill assessment in core test in 2016

Source: Own work based on the results of the Omnibus study, 2016 edition

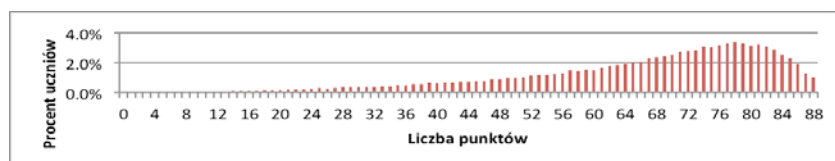


Chart 2. Percentage distribution of points obtained by students in Polish language skill assessment in core test in 2017

Source: Own work based on the results of the Omnibus study, 2017 edition

Both distributions lean to the left, therefore the tasks included in this part of the test were not difficult for most of the students. It is worth noting that in the year 2016, almost 0.5 % of subjects obtained up to 10 points, while almost 90 % of third graders obtained at least 45 points (which is more than half of the total obtainable points). Every fifth subject obtained at least 80 points. A similar situation occurred in the year 2017. Approximately 89 % of third graders obtained at least 44 points (which is more than half of the total obtainable points). Every fifth subject obtained at least 80 points (more than 90 % of the total obtainable points).

Table 1 presents the scores obtained in the Polish language section of the core test in both editions, in total and divided by field.

Table 1

**Results of Polish language section of core test in Omnibus study in 2016 and 2017 editions**

Percentage range	2016 edition	2017 edition
maximum number of points	89	88
average score	65.1	65.5
average percentage	73.1 %	74.4 %
average percentage in reading and text analysis field	79.4 %	88.0 %
average percentage in writing field	70.1 %	78.0 %
average percentage in grammar field	76.3 %	74.6 %
average percentage in orthography field	67.4 %	63.0 %

Source: Own work based on the results of the Omnibus study, 2016 and 2017 editions

It is worth noting that there is almost no difference in the average results between the two editions due to the school's location. In-depth data is presented in table 2.

Table 2

**Average percentage results of Polish language section of core test in Omnibus study in 2016 and 2017 editions divided by location of school**

Region	2016 edition	2017 edition
village	71.8 %	73.6 %
city below 50 thousand inhabitants	73.5 %	74.5 %
city with 50–100 thousand inhabitants	76.1 %	74.7 %
city over 100 thousand inhabitants	74.7 %	74.0 %

Source: Own work based on the results of the Omnibus study, 2016 and 2017 editions

**Study results of Polish language section of additional test**

The additional test was prepared with gifted students in mind, those who have already mastered the Polish language skills at the core level. It is worth remembering that



this part of the test was voluntary, and the student was the one to decide whether to write the additional test and which tasks from the additional test to solve. In the 2016 edition, 608 students took the Polish language section of the additional test (3.5% of all students taking part in the study). In 2017, the number of students increased to 2.359 (4.5%).

Chart 3 presents the percentage distribution of the points obtained in the Polish language skill assessment part of the 2016 edition of the additional test, while chart 4 presents the results from the 2017 edition.

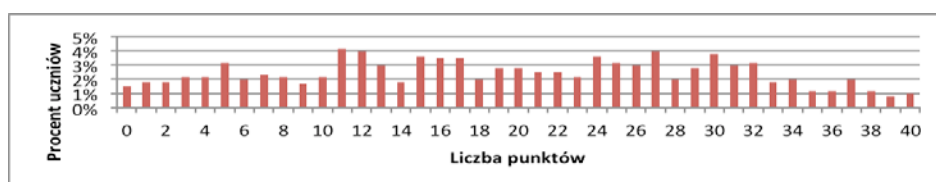


Chart 3. Percentage distribution of points obtained by students in Polish language skill assessment in additional test in 2016

Source: Own work based on the results of the Omnibus study, 2016 edition

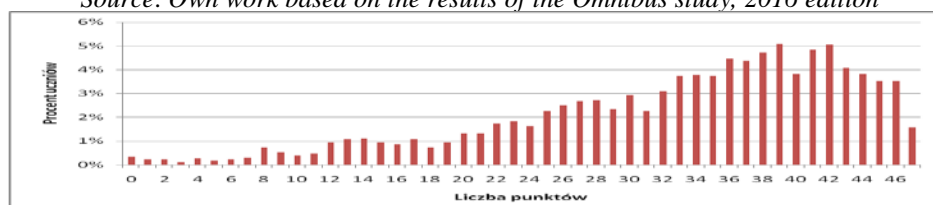


Chart 4. Percentage distribution of points obtained by students in Polish language skill assessment in additional test in 2017

Source: Own work based on the results of the Omnibus study, 2017 edition

Table 3 presents the scores obtained in the Polish language section of the additional test in both editions, in total and divided by field.

Table 3

**Results of Polish language section of additional test in Omnibus study in 2016 and 2017 editions**

Percentage range	2016 edition	2017 edition
maximum number of points	40	47
average score	18.0	32.9
average percentage	45.0 %	70.0 %
average percentage in reading and text analysis field	47.1 %	66.2 %
average percentage in writing field	54.1 %	68.8 %
average percentage in grammar field	49.9 %	74.8 %
average percentage in orthography field	47.8 %	65.2 %

Source: Own work based on the results of the Omnibus study, 2016 and 2017 editions

Similarly to the core test, orthography proved to be relatively difficult for the students. Interestingly, the overall results of the reading portion of the additional test are



significantly lower, which is most likely due to replacing the typical texts with works which are significantly harder to analyze and interpret.

#### Study results of mathematics section of core test

In the 2016 edition, 17,286 students took the mathematics section of the core test at the national level. In 2017, the number of students increased to 52,556. In both editions, the students could obtain 40 points in total in the mathematics section of the test (10 points per field).

Chart 5 presents the percentage distribution of the points obtained in the mathematics skill assessment part of the 2016 edition of the core test, while chart 6 presents the results from the 2017 edition.

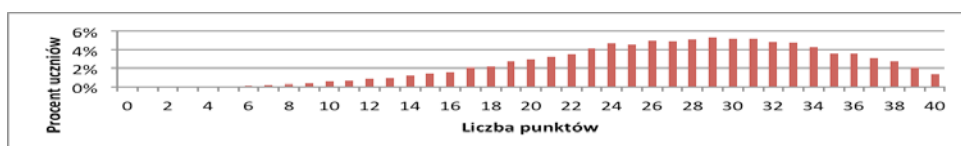


Chart 5. Percentage distribution of points obtained by students in mathematics skill assessment in core test in 2016

Source: Own work based on the results of the Omnibus study, 2016 edition.

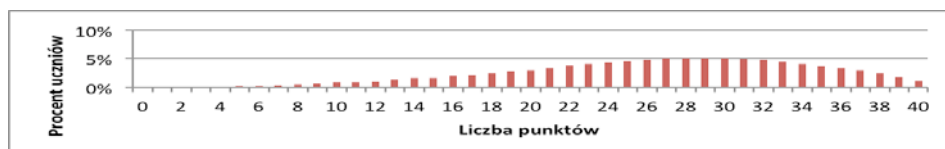


Chart 6. Percentage distribution of points obtained by students in mathematics skill assessment in core test in 2017

Source: Own work based on the results of the Omnibus study, 2017 edition

Both distributions lean to the left, therefore the tasks included in this part of the test were not difficult for a significant number of students. In 2016, almost 2 % of subjects obtained up to 10 points, while approx. 81 % of the third graders obtained over 20 points. Every fifth subject obtained at least 34 points. A similar situation occurred in the year 2017. Approximately 2.9 % of subjects obtained up to 10 points. Approximately 11.6 % of students obtained at least 36 points.

Table 4

#### Results of mathematics section of core test in Omnibus study in 2016 and 2017 editions

Percentage range	2016 edition	2017 edition
maximum number of points	40	40
average score	27	26
average percentage	67.5 %	65.9 %
average percentage in counting efficiency field	80.0 %	82.7 %
average percentage in geometry field	66.5 %	67.0 %
average percentage in text-based tasks field	72.8 %	71.0 %
average percentage in mathematical reasoning field	50.3 %	42.8 %

Source: Own work based on the results of the Omnibus study, 2016 and 2017 editions



Table 4 presents the scores obtained in the mathematics section of the core test in both editions, in total and divided by field.

Similarly to the Polish language section, there were no significant differences between the average results due to the location of the school.

Table 5

**Average percentage results of mathematics section of core test in Omnibus study in 2016 and 2017 editions divided by location of school**

Region	2016 edition	2017 edition
village	65.8 %	65.3 %
city below 50 thousand inhabitants	67.6 %	65.3 %
city with 50-100 thousand inhabitants	71.5 %	67.4 %
city over 100 thousand inhabitants	69.6 %	67.0 %

Source: Own work based on the results of the Omnibus study, 2016 and 2017 editions

#### Study results of mathematics section of additional test

In the 2016 edition, 784 children took the mathematics section of the additional test (4.5 % of all students taking part in the mathematics part of the test). In 2017, the number of students increased to 2.405 (4.6 %).

Chart 7 presents the percentage distribution of the points obtained in the mathematics skill assessment part of the 2016 edition of the additional test, while chart 8 presents the results from the 2017 edition.

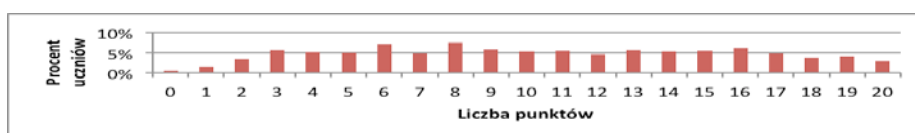


Chart 7. Percentage distribution of points obtained by students in mathematics skill assessment in additional test in 2016

Source: Own work based on the results of the Omnibus study, 2016 edition

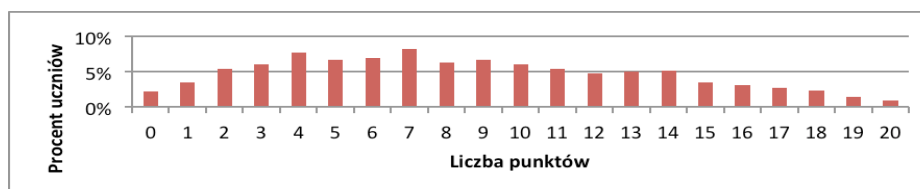


Chart 8. Percentage distribution of points obtained by students in mathematics skill assessment in additional test in 2017

Source: Own work based on the results of the Omnibus study, 2017 edition

Table 6 presents the scores obtained in the mathematics section of the additional test in both editions, in total and divided by field.

Almost 3 % of the students taking part in the additional test obtained the maximum amount of points, and every fifth student obtained at least 16 points.





Table 6

**Results of mathematics section of additional test in Omnibus study  
in 2016 and 2017 editions**

Percentage range	2016 edition	2017 edition
maximum number of points	20	20
average score	12	9
average percentage	59.5 %	42.8 %
average percentage in counting efficiency field	66.4 %	17.2 %
average percentage in geometry field	62.0 %	50.2 %
average percentage in text-based tasks field	58.0 %	36.3 %
average percentage in mathematical reasoning field	37.6 %	67.3 %

*Source: Own work based on the results of the Omnibus study, 2016 and 2017 editions*

So, the key skills acquired by students from first to third grade in the field of Polish language education are undoubtedly revolving around reading. Introducing the child to the concept of written symbols should be preceded by a test conducted in first grade regarding the readiness to begin learning reading and writing (a diagnosis of the abilities that a child should possess in order to handle this key field). Then, the children are to keep learning to read by gradually being introduced to subsequent letters and improving their reading technique by use of longer and more difficult texts. In second and third grade, reading skills are still being developed and improved by the introduction of different types of texts (explanatory texts, cognitive and more difficult literary texts, e.g. poetry), combined with the development of text analysis skills. The average results in this field suggest that most subjects' reading ability is at an adequate level, which is promising in regard to the results in the other Polish language fields due to the fundamental aspect of reading.

*Writing* is another very important ability, which is developed after introducing reading. It consists of introducing the child to the world of symbols (decoding) via learning how to read, and of learning how to encode (i.e. writing down their thoughts by using the previously learned letters). Similarly to developing reading-related skills, the skills in this field are developed gradually throughout the first three grades (from learning how to write the letters they learn separately and combined, writing words, sentences, and then short statements, to preparing longer, more complex and strictly compositionally defined written texts, such as letters, descriptions, or stories). The average results obtained in the writing section (70.1 % and 78.0 % respectively) suggest that the majority of third grade students who took part in the test have adequate skills in this field, which is important, as it is the basis of developing proper writing in the form of correct grammar and orthography.

The abilities in the next two fields (*grammar* and *orthography*) were checked on the basis of written sentence assessment, which is a skill that requires at least basic proficiency in the key fields of reading and writing. Grammar abilities are developed gradually over the course of grades 1–3 (from intuitive use of grammar rules obtained from the ability of creating correct spoken sentences – without introducing the rules – to gradual introduction to parts of speech and inflexion). It is worth noting that the grammar skills field checked both for knowledge regarding basic rules as well as the proper use thereof in writing. The average results show that the majority of students has the grammar abilities required at this stage of education (i.e. they have knowledge regarding basic grammar rules and can use them properly in writing).

Correct writing skills in the scope of orthography are developed by simply interacting with writing since first grade, but they are intentionally and deliberately



improved during independent writing only when certain actions in the scope of writing technique are already automated, which occurs in second and third grade. In the *orthography* field, the students achieved the lowest results in both editions. This could have been considered acceptable if the students did not have access to spelling dictionaries. It can therefore be assumed that children are either not accustomed to using spelling dictionaries during Polish language lessons, do not feel the need to do so, or do not know how.

In the case of mathematics education, one of the key skills obtained in grades 1 -3 is *counting efficiency* in the scope of four arithmetic operations. It is the basis of developing new skills in further education. Most of the third graders taking part in the Omnibus test solved the tasks related to this field, which shows that their counting efficiency is reasonably well developed. The students did not have encounter any major difficulties in counting forward and backward from a number by 1, 10, and 100, as well as by 5 and 8. A significant group of third graders also did not have any difficulties adding and subtracting two-digit numbers up to 100 (including numbers greater than 10) A lot of students properly solved tasks concerning comparing numbers, including differential comparisons. The students had some problems with the multiplication and division of two numbers (within the scope of the multiplication table). This may indicate insufficient proficiency and understanding of these operations. The third graders did well when faced with the simplest tasks, but could not handle those which involved the use of reasoning and searching for the answer, e.g. questions such as “What number do I have to multiply 4 by to obtain 32?”

Solving text-based tasks is another key skill obtained and developed at the first stage of education. To solve a text-based task, the student must understand the situation depicted in the text of the task, extract the information relevant to the question, construct the appropriate mathematical model and perform operations within the model, and, finally, to verify and interpret the acquired mathematical result. Therefore, in solving a text-based task, the child must make use of more specific abilities. Most of the children did not have any problems solving simple text-based tasks, which involved performing one operation. Difficulties arose in tasks which involved knowledge of terms such as half a liter or quarter of a liter and their relation, as well as in tasks which required specific time-related calculations (i.e. calculating the starting time, knowing the ending time and duration). The children also had difficulties with sequenced tasks, which involved performing several steps. These issues are discussed in depth in (Czajkowska, 2016).

It is very important for the students' mathematical education for them to obtain an adequate amount of experience with manipulating models of geometric figures in grades 1-3 and that the proper geometric intuitions forms in their minds. Minor skills, e.g. line segment length measurement, drawing line segments of a specific length, and recognizing geometric figures, as well as more complex ones, e.g. visual understanding in geometry and performing simple geometric reasoning are crucial for the students' mathematical development. The results in the *geometry* field are unsatisfactory. The study shows that approx. 58 % of the students taking part in the 2016 edition still perceived geometric figures as a whole. They did not notice that the sides of a square are line segments. They still did not perceive a square as a rectangle. The results were similar in the next edition of the study. This shows that a significant amount of third grade students is still at visual level. Every fourth student taking part in the 2017 study was unable to visualize how a cut-out is going to look like when the paper is unfolded after being folded in half when cutting. The students taking part in the additional test has difficulties with a task which involved visualizing the number of pieces resulting from folding a sheet of paper in half and cutting



it as described in the task. They were also unable to make use of the available aids (paper and scissors) or did not feel the need to do so. This may indicate insufficient experience in the scope of performing specific actions on real items and a lack of appropriate geometric intuition. It is therefore important to carry out more activities involving geometry at the enactive level, not only with students with low or average mathematical proficiency, but also with those mathematically gifted or interested in mathematics. It is worth noting that a lack of necessary geometric skills can result in difficulties in learning geometry during the second stage of education.

One of the most important skills acquired by a student in primary school is *mathematical reasoning*. It is defined as the ability of performing mathematically-preferred reasoning at an elementary level. The tasks in this field were difficult for the students. This is because solving each of the tasks required the students to create an appropriate strategy instead of using a ready-made plan of action.

Despite the overall result being good, it is worth noting that a significant number of children was unable to properly make use of the available teaching aids when solving the task. In the Polish language section of the test, they did not make use of the spelling dictionaries or did it incorrectly. In the mathematics section, they did not make attempts at experimentation (e.g. they did not make the cut-out) and used set substitutes improperly. It therefore seems valid to propose that the third graders taking part in the study did not acquire the appropriate enactive experiences. This is troubling, especially considering the stance of the teachers, as most of them only take the final test results into consideration, not thinking about how the children are approaching the tests. This presents a specific view regarding children and a type of education where instead of trying to raise an independent, intrinsically-driven problem solver, the aim is to make use of patterns where every child must learn the exact same skills and information, as outlined in the curriculum. This is also confirmed by J. Bałachowicz (2009) in regard to the objectification of children. The author conducted studies among early school education teachers (the aim of which was i.a. to determine specific aspects of the individual theories of the teachers; especially regarding their perception of a child in the context of development and the role of the teacher and school). Bałachowicz noted that three quarters of the contributing teachers objectified children, considering them as passive and in need of being externally controlled and guided by adults (Bałachowicz, 2009, p. 108). However, it is important to remember that a child is not an “imperfect adult,” but a social being who needs to be perceived as a person, with respect and knowledge in regard to its needs and abilities at the current stage of its growth. This is also relevant in regard to checking and assessing knowledge and abilities, the aim of which should first and foremost be to make a diagnosis to be used as the basis for planning activities for children who need them (including gifted children).

It is worth noting that only a small group of students (less than 5 %) decided to take part in the additional test, both in the Polish language section as well as the mathematics section. Multiple reasons for this occurrence are possible. One of them could be the fatigue of the children – they were to solve the additional test immediately after solving the tasks contained in the core test.

In summary, it can be said that the overwhelming majority of the students taking part in the Omnibus test are at an adequate level of key Polish language and mathematics skills. However, it is worth remembering that not only the average results should be considered, but also, primarily, the skills of particular students. This is why the



difficulties of every student need to be identified and verified in various situations in order to determine whether it is a case of a lack of skills or the child simply not making use of them during the test.

### CONCLUSIONS

So, comparing results of standardized or expert tests carried out by various institutions should be avoided. It is also worth mentioning that neither standardized nor expert tests should be reduced to the misunderstood method of evaluation of children and the work of teachers. To fulfill the expectations of students, parents, and the school management, many teachers concentrate solely on properly preparing the children for exams and tests, which is an undesired occurrence. It would be beneficial for the teachers to employ a more reflective approach to the tests and exams, as only this can benefit their professional development, which, in turn, would directly impact their work with children and, ultimately, the achievements of the students.

In order to organize the learning process so that children can grow and develop their abilities, it is extremely important to: 1) introduce educational situations allowing the children to experiment, experience, and perceive observed changes; 2) create educational situations, the aim of which would be to support the growth of the child in the scope of developing the intellectual strategies needed to solve mathematical problems, both in and outside of the school environment; 3) ensure that every child has access to a jeton, abacus, counting beans, paper, scissors, and other teaching aids as well as encouraging the children to use them when solving mathematical problems.

In order to develop a sense of motivation for the child in regard to independent reading and improving the skill, it is important to create educational situations conducive to making the child interested in books and motivated in regard to independent reading by planning regular activities for the development of reading, prepared in accordance with the child's changing abilities and skills in this field. The activities should be multifaceted: reading aloud done by the teacher, family reading, introducing the child to the literary world, reading along done by the child, etc. While independent book reading occurs only after the child has been familiarized with the entire alphabet, it is still possible for them to get introduced to books (read by the teacher and those children who already know how to read). In the second and third grade, the teacher's task is to encourage the child to read and develop an interest in reading based on any known individual preferences of the child.

It is also worth considering the social aspect of education. A child is not an isolated entity. On the contrary – its development and learning process should be seen in a socio-cultural context. It is therefore beneficial to create educational situations which allow for efficient learning based on the understanding of the social nature of this phenomenon in three aspects: 1) student/teacher education, 2) student/student education, 3) individual work of student. When checking the level of knowledge and skills of third grade students, more attention should be paid to how the children approach a problem – whether they ask for help, make use of spelling dictionaries or jetons, or if they become helpless. These are important aspects, which often become disregarded or remain unnoticed, as the teachers put too much focus on the final, total results of the students.

To sum up, we believe that while exams and tests should not be discontinued, as they are an important indicator, inextricably linked to the learning process, they should be carried out in a student-friendly atmosphere. Therefore, the prospects for further studies include studying foreign experience in organizing student assessment.



## REFERENCES

1. Bałachowicz, J. (2009). *Dziecko i jego rozwój w teorii indywidualnej nauczycieli klas początkowych – schematy i problemy zmiany*. In S. Włoch (Ed.), *Wczesna edukacja dziecka – perspektywy i zagrożenia* (pp. 101–111). Opole: Wydawnictwo Uniwersytetu Opolskiego.
2. Czajkowska, M. (2005). *Wartości motywacyjne zadań matematycznych*. Kielce: Akademia Świętokrzyska.
3. Czajkowska, M. (2016). Umiejętności rozwiązywania zadań tekstowych przez trzecioklasistów w świetle badania Omnibus. *Matematyczna Edukacja Dzieci*, 1 (1), 95–111.
4. Czajkowska, M., Grochowalska, M., & Orzechowska, M. (2015). *Potrzeby nauczycieli edukacji wczesnoszkolnej i nauczycieli matematyki w zakresie rozwoju zawodowego*. Warsaw: Instytut Badań Edukacyjnych.
5. Czajkowska, M., & Szurowska, B. (2016). *Umiejętności polonistyczne i matematyczne trzecioklasistów. Raport z badania Omnibus. Edycja 2016*. MAC. Kielce.
6. Czajkowska, M., & Białek, K. (2017). *Umiejętności polonistyczne i matematyczne trzecioklasistów. Raport ze Sprawdzianu Kompetencji Trzecioklasisty Omnibus 2017*. MAC. Kielce.
7. Gruszczyk-Kolczyńska, E. (Ed.). (2012). *O dzieciach matematycznie uzdolnionych. Książka dla rodziców i nauczycieli*. Warsaw: Nowa Era.
8. Gruszczyk-Kolczyńska, E., & Zielińska, E. (2013). *Nauczycielska diagnoza edukacji matematycznej dzieci. Metody, interpretacje, wnioski*. Warsaw: Nowa Era.
9. Hiele, van P. M. (2003). Podobieństwa i różnice między teorią uczenia się i nauczania Skempera a poziomami myślenia van Hielego. *Roczniki Polskiego Towarzystwa Matematycznego, Seria V, Dydaktyka Matematyki*, 25, 183–202.
10. Nawolska, B., & Żądło, J. (2012). Testowa(nie) trzecioklasistów. *NiM+TI*, 82, 21–25.
11. Niemierko, B. (1997). *Między oceną szkolną a dydaktyką. Bliżej dydaktyki*. Warsaw: WSiP.
12. Nowik, J. (2011). *Kształcenie matematyczne w edukacji wczesnoszkolnej*. Opole: Nowik.
13. Szurowska, B. (2014). Rozwijanie zainteresowań czytelniczych przedszkolaków jako ważny element kształcenia gotowości do czytania i pisania. In C. Langier & K. Śleziński (Eds.), *Edukacja dziecka wobec wyzwań i zagrożeń ponowoczesności* (pp. 59–75). Bielsko-Biała: Kolegium Nauczycielskie; Katowice; [Cieszyn]: Uniwersytet Śląski. Wydział Etnologii i Nauk o Edukacji; Kraków: Wydawnictwo Scriptum, Tomasz Sekunda.
14. Trelńska, U., & Trelński, G. (1993). *Nauczanie początków geometrii*. Kielce: Eltero.
15. Wygotski, L. S. (1971). *Geneza wyższych funkcji psychicznych*. In L. S. Wygotski (Ed.), *Wybrane prace psychologiczne* (pp. 18–158). Warsaw: PWN.
16. Żeromska, A. K. (2004). O kategorii pojęciowej postawa na przykładzie postawy wobec zadań matematycznych. *Roczniki Polskiego Towarzystwa Matematycznego. Seria V. Dydaktyka Matematyki*, 24, 197–253.



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### **THE CHANGE OF PERCEPTION, RECEPTION AND THE SOURCE OF INFORMATION AMONG GENERATIONS BORN IN 1990S THROUGH THE PRISM OF FOREIGN SCHOLARS' VIEWS**

#### **ABSTRACT**

*Constant ICT development brings new channels of communication and new forms of media content. It creates new habits of information consumption. This is evident particularly among children and students. Their perception and reception influenced by quality and quantity change is evolving. There is a significant change in the process of information selection and its absorption. The time of learning is not limited to school activity; homeworking is constant along with other life activities. It generates new challenges for educational system – mainly for teachers. The article is an attempt to describe this phenomenon and formulate some directions for teachers – method suggestions as well as a tool selection. The content of the article is based on the outcomes of the author's research. Indications addressed to teachers whose daily work is most affected by the new situation with ICT have been formulated. In the process of study the following pragmatic conclusions have been made: children and adolescents are accustomed to receiving short interactive content; the amount of information that reaches the youth is vast and requires an ability to assess and choose; in order to draw the recipient's attention, the content should be communicated in an interactive form that is highly attractive for the recipient; children and adolescents far more often use content that is available online than that from other sources of information; work with more lengthy texts and an in-depth content analysis is necessary for the proper development of both children and adolescents despite being unpopular among these groups; children and adolescents have a valuable ability to shift focus from one subject on another, though their capacity to multitask is only apparent; children and adolescents expect their actions to give rapid results; children and adolescents have a competence potential and a technical potential to use IT tools that facilitate access to information and learning; due to the vast number and the diversity of available activities a stronger motivation to learn is required. An inventory of recommendations addressed to teachers has been also presented in the paper. It has been defined that their delivery will facilitate the implementation of teaching tasks, hence diminishing the concerns that arise in this regard.*

**Keywords:** *ICT, e-learning, technology in education, media in education, educational content perception, educational content reception.*

#### **INTRODUCTION**

By implementing educational programmes, teachers are faced with a very difficult issue. The problem pertains to the ways of teaching and educating in the reality shaped by new, rapidly growing media. The changes arising from the development of information technology determine nearly all aspects of life, including learning processes. Hence, this issue requires an analysis, while didactic methods need to be updated.



Despite being commonly discussed, the problem requires permanent changes resulting from ongoing analyses and adaptations, whereas the complexity of this matter calls for a differentiated approach.

#### **THE AIM OF THE STUDY**

In the presented article an attempt has been made to analyse the essential elements that determine educational reality in the context of changes in the perception and reception of information, and changes in the trends of their choice among the young generation. This fragment of transforming reality has a significant impact on teachers' work.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

The author's deliberations were inspired by findings obtained during his studies, part of which is presented in the article. The discussed issue should not be regarded independently of the context of the overall changes that take place. Therefore, other determinants of the development of school didactics are indicated first. Research was conducted on the group of Polish students. The framework of discussion was based also on the study of international bibliography focused on the problem of cybermedia in society and education.

#### **RESULTS**

The fundamental phenomena resulting from the development and popularisation of "new new media" (*nowe nowe media*) (Levinson, 2010) that impact the 'pedagogical reality' can be expressed in the list below:

- a vast amount of information reaching both teachers and learners, which is difficult to handle;
- a change in the way of transmitting information and in the form of information (changes in information channels);
- changes of attitudes adopted by recipients (learners);
- reduced impact exerted by teachers on the content that forms the learners' knowledge and foundations – the issue of the quality of information;
- "time competitiveness";
- permanent, rapid and easy access to information.

The first three characteristics of the present-day reality require no commentary, as these issues have been repeatedly discussed, mainly in pedagogical literature (Bauman, 2007; Carr, 2010).

It is relevant that three characteristics of modern educational reality (namely the fourth, the fifth and the sixth ones) are briefly explained, the latter acting as an axis for deliberations on changes in the perception and forms of choosing information sources by young individuals.

Traditional education includes preparation or determination of information sources that specify and explain the subject being learned. Usually, it consists of various didactic materials, oftentimes in the form of texts, but also multimedia content. The choice of materials is the key element of the teaching process. This kind of support is typical of every process of guided self-education and teaching. The search for content that would facilitate this process in the "ending pedagogical era" before the "new new media" pertained primarily to printed materials usually subjected to verification either by the editor or the publisher. At present, due to the high accessibility of materials in electrical forms, widely available also due to the fact that publishing has been made easy, learners seek this kind of content on their own initiative, in most cases driven by Google "hits" instead of the teacher's references. Consequently, the content that becomes involved in the learning process may be of poor quality due to their invalidity, lack of objectivity or incompleteness.



In extreme cases, information acquired on one's own on the web may prove contradictory to the information provided by the teacher. This may lead to conflict and compromise the teacher's authority. In the new situation, the teaching content is selected by at least three parties, namely: the teacher, the learner who seeks information online unassisted, and mechanisms that determine search engine results (to simplify search engine algorithms, e.g. Google, as well as the structure and tags of a given website). Until now, the teacher placed in the triad "the teacher/school, parents/caregivers, peers" was the sole person fundamentally responsible for choosing the teaching content (according to guidelines). At present, this role is substantially limited.

"Time competitiveness" is a concept created for the purposes of this article that refers to the quantity of potential activities or activities undertaken by learners with regard to their individual time constraints. The emerging diversity that has not been experienced before to this extent together with the very high accessibility of activities and content – blogs, Television series, games, magazines, social media – were formed primarily due to the possibilities offered by the world wide Web 2.0. In this sense, mass culture (pop-culture) is exceptionally competitive with the education system. Due to the significantly higher development and amusement production expenditures compared to education costs together with the high accessibility of amusement media, the educational system loses this competition. The missionary character of education stemming from its positivist context deprives it of the possibility to function on an equal footing with the omnipresent amusement.

The vast diversity and expansive nature of the media (the so-called "push media" or aggressive media) enforce need for an ongoing selection process, i.e. choosing between tempting attractions and duties, education and work. Adults are faced with the above choice as well. However, this choice has a slightly different nature for Generation Z. Online activities have been embedded in their daily life since childhood. The aspect of activity is not a subject of choice, as they choose items and people without due account of the aspect of contact, a kind of mediation. For adults, the dividing line in their choices often runs between the real world and the virtual one – a medium, which does not take place in the case of children and adolescents. Insufficient time is a characteristic of the majority. It has a considerable deterring impact on the teacher's work, who competes with various other attractive forms of passing one's time in his or her attempt to spark students' interest. Competitiveness must also characterise the content proposed by the teacher. Such a phenomenon, which occurred in the past as well, has considerably intensified at present. The significant impact of pop-culture on the teaching process has been noted by numerous authors: (Melosik, 2012; Melosik & Szkudlarek, 2010; Savage, 2008; Tisdell & Thompson, 2005). Still, the problem persists for teachers.

The findings obtained by the author in the course of his original studies (2016/2017) have encouraged considerations on the issues related to the dynamically changing teacher's role and challenges that are yet to be faced by both the counsellor as an artisan who teaches and shapes his or her students, and by didactics itself, which provides him or her with tools and methods.

Studies conducted on a group of 87 students were arranged as a general superficial diagnosis that allowed the author to analyse behaviours related to seeking information both with the aim to solve daily problems and those essential for improving one's competencies and knowledge. Selected findings that act as an impulse for reflection on the teacher's role and tasks in the context of the expansion of new media are presented below.





Over 90 % of the respondents seek information on the Internet every day, 60% of whom do it multiple times a day. Since these results are consistent with the observations made in the course of other studies and the obtained findings, they are not surprising. The Internet has been accompanying humanity on almost permanent basis. However, the declared priority of specific information sources sought by the respondents seems disturbing. As many as 47 % of the study participants claim to seek information in libraries or bookstores as a last resort. Nearly 53 % state that teachers serve as their last source of information. Over 20 % declare to never seek teachers' help when searching for information, while a quarter of the respondents claim to seek information elsewhere than in libraries and bookstores. Probably, when answering the last questions (*spes ultima moritur*), they fail to give due account of required reading recommended in the course of their education. As many as 62 % of the study participants name the Internet as a source of information of first choice, 34 % declare to often use the web to find information they need. Traditional "analogue" sources of information are being replaced by online content. Importantly, a considerable group of the respondents turn to their friends and colleagues for support in solving a problem, with 59 % resorting to this method often and nearly 23 % seeing it as a measure of first choice. The survey questionnaire provided no information on how students reach to their friends or colleagues for help. Perhaps this takes place via the Internet.

The respondents' expectations regarding the information found online are mostly satisfied. As many as 76.5 % declare that they often succeed in finding the information they seek, whereas nearly 20 % claim they always do. Only 5.8 % of the respondents stated that the found information allows them to fully solve the problem, whereas over 88 % claimed that it is very helpful. No respondent indicated that it facilitated the solving of the problem only to a small extent or that it proved useless. The sources of information explored by the learners (mainly the Internet) are considered valuable and sufficient.

Nearly 90 % of the study participants specified the information sought online to pertain to daily activities. As many as 72 % indicated knowledge required for the learning process (studying). Internet provides them with the information necessary in each situation of cognitive deficit.

The process of seeking information online is described by the respondents as learning (78 %). As many as 62 % indicate that it is "a learning process to a large extent", while 17 % consider it "definitely a learning process". According to only 6 %, this type of information seeking (either rather or definitely) cannot be classified as a learning process.

A single incidental act of information seeking takes less than 15 minutes in the case of over half of the study participants, 59 % of whom spend less than 5 minutes on searching information online, while 41 % spend as much as 15 minutes. At the same time, a quarter of the respondents declare situations where the mentioned process takes up to 30 minutes. Only 10 % note incidents where this process takes over an hour.

The above results indicate that single acts of obtaining information are brief, i.e. incidental e-learning. "Incidental e-learning is a new form that appeared concurrently with evolving Internet. Learning in various aspects of life, which facilitate the solving of both daily problems and professional issues, lies in seeking and perceiving various materials available in different forms online. The content is usually unrelated, as it comes from different sources, while the criterion for selecting results are subject-related "hits" in a given web search engine. The level of their popularity is determined by their position on search engine websites. Incidental e-learning becomes a permanent form of extending one's knowledge and gaining skills (Kuruliszwili, 2016).



The most popular type of online information resources specified by the respondents is a website, followed by Internet forums and video-sharing websites, such as YouTube. According to the study, as many as 56 % of the study participants use websites often, while 26 % of them use websites occasionally.

The obtained results are compliant with the findings provided by other studies, including *Nastolatki wobec internetu* ("Adolescents and the Internet") (Bochenek, Fila, Kamieniecki, Lange, Loba, Tanaś, & Wrońska 2016), according to which 34.1 % lower secondary school students and 38.7 % upper secondary school students claim to use the Internet on daily basis for doing homework assignments, whereas 39.5 % and 45 % of them, respectively, use it several times a week. (Bochenek, Fila, Kamieniecki, Lange, Loba, Tanaś, & Wrońska 2016) The willingness to apply the web in learning (homework assignments) is intrinsic. The above-mentioned research of NASK indicates that students in general do not claim to have participated in a situation where a teacher encourages them to use the Internet. Only 14% stated that teachers encouraged them to use the web for doing their homework assignments (Bochenek, Fila, Kamieniecki, Lange, Loba, Tanaś, & Wrońska 2016). This is confirmed by results of the 2013 study *Nowe media w polskiej szkole* ("New media in Polish school"). The results indicate that over half of the teachers participating in the study, i.e. 46.9 %, have never sent their students teaching materials online, whereas 20.7 % of the teachers claimed to do it once a month. (Batorski & Jasiewicz, 2013) Interestingly, similarly to students, teachers seek information on the web as well. Over 40 % of the latter engage in online search on daily basis, while nearly 40 % do it once or twice a week (Batorski & Jasiewicz, 2013).

The research findings suggest that Internet has replaced other sources of information, particularly printed ones, for the mentioned group of respondents. The information obtained in this way is considered sufficient by students. The easiness and short time required to reach the goal, i.e. to learn something new, are very tempting. The common trait of the present-day youth is impatience in waiting for a result of the process of seeking information. Owing to mobile devices and increasingly better ICT infrastructure, a piece of information is often instantly accessible. In order to check the meaning of an unknown word, one does not have to go to a library or ask an expert. Owing to websites available via mobile network we can verify it instantly. The way of seeking information that is dominant in the study results, specifically incidental e-learning, is linked to the observed characteristic. The correlation between cognitive activity and the expected rapid result can take the form of a mutually detrimental vicious circle involving these elements. When seeking a rapid result, we resort to the Internet and become accustomed to obtaining results in no time, thus growing increasingly impatient and thus search for solutions online.

The criterion for choosing the source of information and the medium for communicating information is access duration, time for obtaining the result.

Some concerns arise with regard to the expectation of rapid results in the process of seeking information, which is notable in the group of students participating in the study and characteristic of young generations, and constitutes one of the traits that determine changes in the process of perceiving information. It is often the case that an articulated concern pertains also to a change in the way how the information in its new form is received. As a result of reading numerous short synthetic texts or receiving a high amount of brief information in a different form (a sound, an illustration, an animation, a video), the need for a more in-depth understanding of this issue decreases. This type of synthetic message is characteristic of present-day television and radio programmes, the press, news websites and advertisements. Accustomed to laconic messages, recipients no longer need to analyse the issue in more depth.



According to Nicholas Carr, this situation may have a negative impact on the development of science and civilisation (Carr, 2010), thus causing a movement away from unassisted, in-depth analytical work and literature research that serve as the foundation of progress. Similar concerns were expressed by Manfred Spitzer (Spitzer, 2015).

Changes in the “information consumption” habits result in a shorter attention span and, moreover, in seemingly multithreaded nature of activities. When working on the computer, reading short non-complimentary texts provided in a non-linear manner, doing several activities seemingly simultaneously (reading e-mails, texting, listening to music, chatting via an instant messenger), one’s attention is shifted from one thread to another. Hence, as the brain is being “accustomed” to the above, difficulties arise in relation to focusing on one text for a longer time. In reality, multithreaded activities are not implemented simultaneously.

The way of receiving information is shaped by the form in which it is communicated, as well. A text is oftentimes replaced by an image. Pictorial communication has dominated new media, as not only does it determine the receivers’ perception and reception of information, but also affects the present-day reality, cultural cohesion that has been defined by language, a “linguistic turn” (Rorty, 1980). Turns of this sort, the dominant position of image in the culture of message that gives rise to its common and broad influence both on the shape and the dynamics of how culture is understood was specified years ago as a pictorial turn: “What makes for the sense of a pictorial turn, then, is not that we have some powerful account of visual representation that is dictating the terms of cultural theory, but that pictures form a point of peculiar friction and discomfort across a broad range of intellectual inquiry” (Mitchell, 1995). Regardless of how this change is defined, its implications concern numerous aspects of life and scientific areas. A particularly strong effect is exerted on didactics.

The formulated concerns pertain to a change of the habit regarding communication and forms of interpersonal contact. An interaction, made indirectly through an electronic medium, saps the youth’s ability to establish interpersonal contacts.

The entity’s changing perception in the learning process is characterised by a notably greater need for strong stimuli and interactions. This pertains both to the level of process initiation and the ability to maintain attention. Due to the vastness of information communicated in our environment, senders of the information have to move to outdo each other in order to reach the recipient, i.e. to draw attention to the broadcast information. The recipient can be reached effectively by means of providing information in the form of attention-drawing stimuli. A message of this sort has a desensitising effect on young recipients, thus making them less sensitive to more subtle forms of communication. Oftentimes, the message that reaches adolescents, particularly when transmitted via the Internet, has an interactive nature. Social networking sites, blogs or other forms of publication allow the recipients to comment or complement information, in line with the concept of Web 2.0. Using websites of this sort forms a need for interactivity in a message. This process seems impossible to be reversed, hence requiring one to adjust to the situation. Consequently, it should be taken into account in designing teaching actions.

The characteristics of the teaching entity indicated above are consolidated as a result of iterative actions caused by the occurrence of the factors listed in the Introduction and by brain neuroplasticity.

These numerous concerns, both among teachers and parents, constitute a reaction characteristic of each change. It is a natural social response to a new situation.



## CONCLUSIONS

The new educational reality is also a potential for new teaching possibilities. The ability to approach the problem observed among the youth in a synthetic way, new information channels, educational games (gamification), the easiness of creating attractive teaching materials or new (both in terms of quantity and quality) devices/applications at increasingly lower prices are characteristics that may improve the effectiveness of the educational process. This paper is summarised by indications addressed to teachers whose daily work is most affected by the new situation. As a starting point for specifying recommendations based on general findings of the above-described analysis, with due account of opportunities arising from the common accessibility of ICT, the following pragmatic conclusions were formulated:

- children and adolescents are accustomed to receiving short interactive content;
- the amount of information that reaches the youth is vast and requires an ability to assess and choose;
  - in order to draw the recipient's attention, the content should be communicated in an interactive form that is highly attractive for the recipient;
  - children and adolescents far more often use content that is available online than that from other sources of information;
  - work with more lengthy texts and an in-depth content analysis is necessary for the proper development of both children and adolescents despite being unpopular among these groups;
  - children and adolescents have a valuable ability to shift focus from one subject on another, though their capacity to multitask is only apparent;
  - children and adolescents expect their actions to give rapid results;
  - children and adolescents have a competence potential and a technical potential to use IT tools that facilitate access to information and learning;
  - due to the vast number and the diversity of available activities a stronger motivation to learn is required.

The above conclusions pertain also to older individuals, e.g. college and university students. Due to a generation change, the specified characteristic will probably be assigned to subsequent generations.

In the article, other issues of lesser importance in this context, though highly significant, nonetheless, were intentionally omitted. These include: the quality of merit and the moral value of information, the problem of intellectual property, the teachers' IT competencies, information and communications infrastructure of educational establishments, or extreme pragmatic approach of the youth. The author's intent was to focus on the most significant matters centred around the axis of the problem defined as changes in the educational reality resulting from evolving form the communication and teachers' challenges thus implied.

The impact of the factors listed at the beginning of the article is continuous, whereas changes in the characteristics are of permanent nature. The evolution of the media is a permanent and irreversible process that requires accommodation. Oftentimes, the pace of these changes exceeds the adaptation rate. This leads to discomfort among participants of the process.

An attempt can be made to compensate the list of concerns and difficulties with a list of opportunities arising from the common access to information technology. An inventory of recommendations addressed to teachers is presented below. The delivery on the proposals listed below will facilitate the implementation of teaching tasks, hence diminishing the concerns that arise in this regard:



- to use in the teaching process tools that are employed by students on daily basis (social networking sites, blogs, Wiki, instant messengers);
- teaching with the use of e-learning;
- to seek, create educational games that are possibly closest to those played by children and adolescents;
- to provide information in a brief synthetic form, at the same time promoting learning and encouraging learners to extend their knowledge on a given subject;
- to develop learners' ability to link trends, network resources and to apply the semantic web technology.

Sadly, application of the above possibilities, didactic opportunities is by no means a negligible challenge, particularly for teachers. However, such a challenge is better than a fear of the unknown. The ways of dealing with it is considered by us as the prospect of our future research.

#### REFERENCES

1. Batorski, D., & Jasiewicz, J. (2013). *Nowe media w polskiej szkole*. Retrieved from <http://pobierzwiedze.pl/wp-content/uploads/2013/11/Nowe-media-w-polskiej-szkole-wyniki-bada%C5%84.pdf>
2. Bauman, Z. (2007). *Płynne czasy – życie w epoce niepewności*. Warszawa: Wydawnictwo Sic.
3. Bochenek, M., Fila, M., Kamieniecki, W., Lange, R., Loba, B., Tanaś, M., & Wrońska, A. (2016). *Nastolatki wobec internetu (Adolescents and the Internet)*. Warszawa: NASK.
4. Carr, N. (2010). *The shallows: what the Internet is doing to our brains*. New York: Norton.
5. Kuruliszwili, S. (2016). *Technologie informacyjne a andragogika – edukacyjne wyzwania współczesności*. Warszawa: Instytut Rozwoju Służb Społecznych.
6. Levinson, P. (2010). *Nowe nowe media*. Kraków: WAM.
7. Melosik, Z. (2012). Mass media, tożsamość i rekonstrukcje kultury współczesnej. In W. Skrzydlewski & S. Dylak, (Eds.) *Media – Edukacja – Kultura* (pp. 31–49). Poznań; Rzeszów: Towarzystwo Technologii i Mediów Edukacyjnych.
8. Melosik, Z., & Szkudlarek, T. (2010). *Kultura, tożsamość i edukacja – migotanie znaczeń*. Kraków: IMPULS.
9. Mitchell, W. (1995). *Picture theory*. Chicago: University of Chicago Press.
10. Prensky, M. (2001). Digital Natives, digital immigrants. *On the Horizon*, 9, 1–6.
11. Rorty, R. (1980). *Philosophy and the mirror of nature*. Princeton: Princeton University Press.
12. Savage, G. (2008). Silencing the everyday experiences of youth? Deconstructing issues of subjectivity and popular/corporate culture in the English classroom. *Discourse Studies in the cultural politics of education*, 29, 51–68.
13. Spitzer, M. (2015). *Cyfrowa demencja. W jaki sposób pozbawiamy rozumu siebie i swoje*. Słupsk: Dobra Literatura.
14. Tisdell, E., & Thompson, P. (2005). *The role of pop culture and entertainment media in adult education practice*, Proceedings of Adult Education Research Conference. Kansas: State University Libraries New Prairie Press.



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### **COOPERATIVE LEARNING A CURRENT SNAPSHOT: BEFORE, DURING AND AFTER IMPLEMENTATION**

#### **ABSTRACT**

*Cooperative Learning's (CL) implementation has received an incredible amount of research attention from academics held in high esteem. However, the researcher claims that it is up to every new generation of educators to formulate their conclusions regarding CL's effectiveness in a contemporary classroom. Although the author begins by situating CL as a pedagogical tool that goes back nearly fifty years and insinuates a progression in use, he also claims CL should not only be compared to itself for scrutiny but it should be compared with the current generation's academic needs. Later Baby Boomers that graduated high school in the 1980's experienced a radically different academia than Generation X, Y, or Gen Z'ers, consequently a valid comparative analysis must see CL through present day lens. The author further claims, with the exception of references to CL's beginnings, the date parameter for findings are limited to the last fifteen months which includes all of 2017 and half of 2016. The document continues by contextualizing CL's precursors along with its distinctive historical genesis. Furthermore, the objective of this paper is not only to take a snapshot of the current CL literature based on the iconic five elements of CL formulated by David W. Johnson, Roger T. Johnson, and Edythe Johnson Holubec (1989), but to also provide a litmus test on the current relevancy of CL in the post-millennial age. The author claims his theoretical framework centers on several factors composed of cognitive, behavioral, and social interdependence. The conclusions are based on three tendencies or categories in the literature that point to a) pre-implementation, b) implementation and c) post-implementation. These three tendencies are also described as the rationalization for implementation, context of the implementation, and the effects of CL's outcomes. Furthermore, the results chronicle the importance of CL in maintaining a student's social presence in light of current social or anti-social trends.*

**Keywords:** cooperative learning, social learning, positive interdependence, individual accountability, interpersonal skills.

#### **INTRODUCTION**

The death of the "era of competitive and individualistic learning" was pronounced in the 1980's. An era marked by teachers that rarely asked students to do group assignments much less rely on someone else for a grade regardless of how often Big Bird sang cooperation's praises on Sesame Street (Johnson, Johnson & Holubec, 1986). That period saw grades coveted much like first place medals at a UIL competition. The drawback was that everyone knew only one winner would rise to the top to set the bar and that everyone else would follow. Ultimately, preferred pedagogies underscored the traditional form of instruction that promoted competitive learning through individual merit (Slavin, 1995).



However, the overall issue was not with the overachievers as contenders that nipped at each other's feet for competition but with everyone further below, the low performing students that seemed to know they would never be considered for the laurels and thus performed mediocre at best (Deutsch, 1962; Johnson & Johnson, 1989). Consequently, the idea of studying together was only used as an excuse by jocks and cheerleaders when wanting to escape their parent's watchful eyes to sneak out on a date. Needless to say, academics was not a team or contact sport even though some pedagogues often used a firm tap on the head or a swift paddle on the other end.

#### **THE AIM OF THE STUDY**

Fast forward three decades and one would think the current curricular trend would de-emphasize competition for the high grades that only benefitted the top performers at the cost of the rest of the students and for the elusive ranking. It stands to reason that Cooperative Learning (CL) would be the law of the land and end rivalries, but is it, or does it? And, if not, then what is the relevancy of CL in the contemporary classroom? Does it continue to get acceptance or is it losing steam? For that matter, what is Cooperative Learning and how is it doing today? Therefore, this paper intends to answer these questions by highlighting a snapshot of the current research on Cooperative Learning.

While the intention to either reject or validate CL is a clear goal, the methodology to take on the task was not a clear-cut path, however, merely mentioning it's historical context, categorizes into a chronologically comparative effort. This effort was further molded by CL's organization which is distinctively marked by its processes. From there it is a simple jump to categorize this comparative review of CL's current literature into the three tendencies of its implementation: before, during, and after implementation. Conversely, it is also beyond the scope of this paper to chronicle the history of Cooperative Learning (CL), even though a brief review of its contextual antecedents seems necessary.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

Group work within education evolved from several well-known theories, chief among them cognitive-developmental theory (Piaget, 1950), the theory of cognitive development (Vygotsky, 1978), social-cognitive theory (Bandura, 1977) which emphasized learning, through discursive processes such as debate or social interaction and confrontation. Behavioral-learning theory emphasized the debate process by stating that learning takes place through the interaction with others which was a direct contrast to the old pedagogue style that pushed the idea that learning was to be done passively by listening to lectures and regurgitating ideas (Johnson & Johnson, 2015; Duhigg, 2016; Baloch & Brady, 2017).

While the use of Cooperative Learning (CL) as a pedagogical skill enjoyed quite a bit of limelight within academia, and its foundation traced back to such icons as J. Dewey (1916), L. Vygotsky (1926), M. Deutsch (1949), R. E. Slavin (1980), it is D. Johnson, R. Johnson, & E. J. Holubec (2008) who introduced the five elements that are now regarded as defining CL. In their version of cooperative learning which not only included the "face-to-face" interaction along with "positive interdependence, individual accountability" as well as "group process" which included a metacognitive wrap up or knowing why and how the group is to proceed, these innovators undergirded CL with the idea of social or "interpersonal skills" that comes with interacting in a cooperative learning environment and is crucial in this day and age (Johnson, Johnson & Holubec, 2008; Johnson & Johnson, 2015; Johnson & Johnson, 2017). Consequently, as a theoretical framework, this paper also advocates what Bandura (1982) termed social cognitive theory and its reciprocity of behaviors, environmental factors and personal cognition as well as social interdependence.



## RESULTS

The ensuing literature review, as three research inclinations, separates CL scholarship into the following three tendencies: the rationalization for CL, CL's five elements as organizational cohesiveness, and CL's effective outcomes. However, the intent to capture the latest scholarship discourse is by no means exhaustive or to be seen as complete but rather as a barometer or indicator of the status quo. For a complete meta-analysis refer to Johnson, Johnson, & Stanne (2000) or for a much more recent and more thorough analysis see David R. Arendale's 488-page annotated bibliography titled: *Postsecondary Peer Cooperative Learning Programs: Annotated Bibliography* which not only enumerates an exhaustive amount of literature on CL but also branches out to collaborative learning groups (CLG) and learning communities (Arendale, 2017).

A further simplification of the previously mentioned tendencies in CL research would be to situate the text as occurring before, such as in promoting and convincing for the use of CL, during or recounting the strategy as it has been used, and after the implementation to highlight the results. Nonetheless, it is important to note that these tendencies are not exclusive of each other. Granted that some researchers such as David and Roger Johnson along with Edythe Johnson Holubec speak to more than one or all of these tendencies. The majority touch on them or tend to either enumerate the justification or the reasons for CL, explain its implementation process, recount how the content works in relation to the five elements established by Johnson, Johnson, & Holubec, or point out the positive or negative results of CL.

### **Rationalization (Before)**

**The first tendency promotes by rationalizing.** The tendency attempts to sell CL includes literature that supports CL as vital to new or aspiring teachers. As previously mentioned CL has a great lineage, however, the defense for its contemporary use falls on every new generation of teachers and researchers. And, even though referencing precursing research is a time-honored tradition, new generations of teachers should seek validation on the grounds of assuring that they are ethically doing the right thing by their students. The tendency starts with the icons who continue to expand their expertise; they are David W. Johnson and Roger T. Johnson. Their recent 2017 article titled, *The use of the cooperative procedure in teacher education and professional development* takes their concept formulated in the early 1980's and applies it to the current classroom. Similarly, Cooperative learning and teaching citizenship in democracies by the same researchers who seem to model their ware by innovatively producing a masterful lesson plan disguised as an "instruction" based on the CL process (Johnson & Johnson, 2016). This effort, promoting confidence, in CL is often reiterated in current literature (Baloche & Brody, 2017; Bell & Hernandez, 2017; Buchs, Filippou, Pulfre, & Volpe, 2017; Gillies, 2016).

Continuing the underlying notion of teacher training in need of CL training has become so prominent that the literature points out that CL should be inculcated at its inception or part of the curricula for new teachers. CL takes on the challenge and attempts to become part of the framework for educator development. The tendency in literature now turns to a call to arms for teacher educators to incorporate CL in teacher training especially since Higher Education who leads the research on CL seldom uses it in the tertiary classroom. Since teachers, as students, value what is important to their teachers, then CL should be modeled as part of in-service and professional development (Baloche & Brody, 2017; Buchs, Filippou, Pulfre & Volpe, 2017; Johnson & Johnson, 2017; Jolliffe & Snaith, 2017; Miquel & Duran, 2017; Slavin, 2014; Tombak & Altun, 2016).





### **Cohesion (During)**

**The second tendency is to see CL for its content.** This second tendency leaves behind the context of CL for the content. To this picture comes a set of Spanish researchers with their project from the University of Oviedo (Spain) which they describe in their article, Design, and validation of a questionnaire to assess cooperative learning in educational contexts (2017). Furthermore, Javier Fernández-Rio, Jose A. Cecchini, Antonio Méndez-Giménez, David Méndez-Alonso, and Jose A. Prieto have formulated the “Cuestionario de Aprendizaje Cooperativo (CAC)” or Cooperative Learning Questionnaire (CLQ) that is so promising that it should be in any good review (Fernández-Rio et al., 2017). These researchers take a set of questions that have been intentionally vetted and categorized by the five basic elements that currently serve as the litmus test for Cooperative Learning (Johnson et al., 1984). Although most of the article has been translated and published in English, as of this writing, an English translation of the CLQ had not been found; the following is offered as a possible translation that categorizes the questions by CL’s basic elements. The numbers refer to the original lineup.

#### **Positive Interdependence**

3. My colleagues help is important in completing the tasks
8. We cannot finish an activity without the contributions of our colleagues
13. It is important to share materials, information to do the tasks
18. The better each member of the group does their homework, the better results the group gets.

#### **Individual and group accountability**

5. Each member of the group relates and interacts in group tasks.
10. Each group member strives to partake in the activities of the group.
15. Each group member should try to participate, even if they do not like the task.
20. Each member of the group must do their part of the group’s work to complete the task.

#### **Promotive interaction**

4. Groupmates relate and interact during tasks.
9. Interaction among classmates is necessary to do the task.
14. We get to know each other to do the activities.
19. We work directly with each other.

#### **Interpersonal skills**

1. We work on dialogue, listening skills and/or debate.
6. We propose and defend ideas, knowledge, and points of view with our colleagues.
11. We listen to the opinions and points of view of colleagues.
16. We reconcile different opinions or conflicts.

#### **Group processing**

2. We work in common so that the whole group knows what is being done.
7. We make decisions in a consensual way among the classmates of the group.
12. We discuss the ideas among the members of the group.
17. We reflect individually and jointly within the group (Fernandez-Rio, Cecchini, Méndez-Giménez, Méndez-Alonso & Prieto, 2017).

In short, Fernández-Rios et. al. set out “to design and validate an easy-to-use questionnaire to assess the use of the five basic elements” as well as formulate a “global cooperation factor” which may be used to validate any CL course and thus prove to any sceptics that CL is a valid and worthwhile pedagogical tool (Fernandez-Rio, Cecchini, Méndez-Giménez, Méndez-Alonso & Prieto, 2017).



Comparably, Javier Fernandez-Rio's individual work also centered on the context of CL as a "proposal" that combines CL with the adventure education model to produce a "cooperative learning cycle" that focuses on interaction and also serves as an explanation as instruction (Fernandez-Rio, 2016). This innovative "cooperative learning cycle" incorporates three phases, "building group cohesion, CL as the content, and CL as the framework" (Fernandez-Rio, 2016). Upon deeper analysis Fernandez-Rio's short but loaded article supplies insights that go far beyond the school gym or playground for it allows the student to examine CL's five elements as they are deployed, ultimately resulting in a thorough immersion in the CL methodology.

#### **Outcomes (After)**

**The third tendency deals with the effects of CL.** This section contains the proven results of CL and includes the outcomes as social benefits (Johnson & Johnson, 2016; Bowman-Perrott, DeMarin, Mahadevan, & Etchells, 2016). However, literature about the societal benefits is outflanked by information about student engagement and motivation which are by far the best-known outcomes resulting in student's better quality assignments (Chen & Chuang, 2016; Eymur & Geban, 2017; Serrano & Pons, 2014; Gull & Shehzad, 2015). Tombak & Altun state that "CL affects the academic success of the students at university level" (2016). The authors justify their honing in on CL as the preferred pedagogical style based on the notions that CL increases motivation in five areas: "a motivating program, enjoyable and different activities for students, defining a goal, peer motivation, and encouraging parents to learn" and are based on V. Thompson's Methodologies to motivate students (as cited in Thompson, 1987).

While the literature regarding before, during, and after implementations of CL methods seem purely positive the only hint at negative aspects points to either lack of teacher preparation or mandates toward standardized testing (Dyson, Colby & Barrat, 2016). And, as a mere hint, the current literature seems to have avoided any adverse suggestions. As such the Dyson, Colby, & Barrat article relates to teachers in a physical education course. While most students are rarely predisposed to cooperation regardless of how many times they heard Big Bird or Oscar the Grouch stressed it. Students that do not actively participate according to Joyce (1999) do nothing within the group and expect those that participate will do all the work, thus rendering the cooperative process null. Similarly, the over-aggressive student that cannot settle for the low grade will take over and do all the work. In essence, the cooperative learning disappears. Consequently, the opportunity for research and literature on the subject should address the issue.

#### **CONCLUSIONS**

However, these negative aspects can be resolved through professional development which analyzes Johnson and Johnson's cooperative learning structure as well as advanced planning and student practice. Students require modeled lessons in which they see and understand what a cooperative learning environment requires. Interdependence, as well as individual accountability, requires that all members be involved in the lesson and group talk involves that the whole group participate in goal setting and throughout the complete process.

Based on the three tendencies, current literature holds Cooperative Learning in high esteem; it commands a prominent status in any contemporary teacher's pedagogy. CL's credentials, as reasons for implementation, go back to theories and theorists similarly



held in high esteem. CL's tried and proven processes of implementation stand on their own merit. CL's effects equate to social etiquette training and are based on tried and proven social learning methods that hold their own.

### REFERENCES

1. Baloche, L., & Brody, C. M. (2017). Cooperative learning: exploring challenges, crafting innovations. *Journal of education for teaching*, 43 (3), 274–283.
2. Bandura, A. (1982). The self and mechanisms of agency. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1, pp. 3–39). Hillsdale, NJ: Erlbaum.
3. Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84 (2), 191–215.
4. Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current directions in psychological science*, 9 (3), 75–78.
5. Bell, A. V., & Hernandez, D. (2017). Cooperative learning groups and the evolution of human adaptability. *Human nature*, 28 (1), 1–15.
6. Bowman-Perrott, L., DeMarín, S., Mahadevan, L., & Etchells, M. (2016). Assessing the academic, social, and language production outcomes of English language learners engaged in peer tutoring: a systematic review. *Education and treatment of children*, 39 (3), 359–388.
7. Buchs, C., Filippou, D., Pulfrey, C., & Volpé, Y. (2017). Challenges for cooperative learning implementation: reports from elementary school teachers. *Journal of education for teaching*, 43(3), 296–306.
8. Chen, K. C., & Chuang, K. W. (2016). Building a cooperative learning environment in a flipped classroom. *Academy of educational leadership journal*, 20 (2). Retrieved from <https://www.questia.com/library/journal/1G1-496014987/building-a-cooperative-learning-environment-in-a-flipped>.
9. Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations*, 2, 129–152.
10. Dewey, J. (1916). *Democracy and education: an introduction to the philosophy of education*. New York: The Macmillan Company.
11. Dyson, B. P., Colby, R., & Barratt, M. (2016). The co-construction of cooperative learning in physical education with elementary classroom teachers. *Journal of teaching in physical education*, 35 (4), 370–380.
12. Eymur, G., & Geban, Ö. (2017). The collaboration of cooperative learning and conceptual change: enhancing the students' understanding of chemical bonding concepts. *International journal of science and mathematics education*, 15 (5), 853–871.
13. Fernandez-Rio, J. (2016). Implementing cooperative learning: a proposal. *The journal of physical education, recreation & dance*, 87 (5), 5–6.
14. Fernandez-Rio, J., Cecchini, J. A., Méndez-Giménez, A., Méndez-Alonso, D., & Prieto, J. A. (2017). Design and validation of a questionnaire to assess cooperative learning in educational contexts. *Anales De Psicología*, 33 (3), 680–688.
15. Fernandez-Rio, J., Cecchini, J. A., Méndez-Gimenez, A., Mendez-Alonso, D., & Prieto, J. A. (2017). Self-regulation, cooperative learning, and academic self-efficacy: interactions to prevent school failure. *Frontiers in psychology*, 8. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5243853/>.
16. Gillies, R. (2016). Cooperative learning: review of research and practice. *Australian journal of teacher education*, 41 (3), 39–54.



17. Gull, F., & Shehzad, S. (2015). Effects of cooperative learning on students' academic achievement. *Journal of education and learning (EduLearn)*, 9 (3), 246. Retrieved from <http://journal.uad.ac.id/index.php/EduLearn/article/view/2071>.
18. Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1986). *Cooperation in the classroom*. (8th ed.). Edina, MN: Interaction Book.
19. Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: theory and research*. Edina, MN: Interaction Book Co.
20. Johnson, D. W. (1993). *Reaching out: interpersonal effectiveness and self-actualization*. Boston, MA: Allyn and Bacon.
21. Johnson, D. W., & Johnson, R. (2016). Cooperative learning and teaching citizenship in democracies. *International journal of educational research*, 76, 162–177.
22. Johnson, D. W., & Johnson, R. T. (2017). The use of cooperative procedures in teacher education and professional development. *Journal of education for teaching*, 43 (3), 284–295.
23. Jolliffe, W., & Snaith, J. (2017). Developing cooperative learning in initial teacher education: indicators for implementation. *Journal of education for teaching*, 43 (3), 307–315.
24. Miquel, E., & Duran, D. (2017). Peer learning network: implementing and sustaining cooperative learning by teacher collaboration. *Journal of education for teaching*, 43 (3), 349–360.
25. Piaget, J. (1950). *The psychology of intelligence*. New York, NY: Harcourt.
26. Serrano, J., & Pons, R. (2014). Introduction: cooperative learning. *Anales de Psicología*, 30 (3), 78–784.
27. Slavin, R. E. (1981). Synthesis of research on cooperative learning. *Educational leadership*, 38 (8), 655–659.
28. Slavin, R. E. (2014). Cooperative learning and academic achievement: why does groupwork work? *Anales de Psicología*, 30 (3), 785–791.
29. Thompson, V. C. (1987). *Methodologies to motivate students*. Abstract. Retrieved from <http://eric.ed.gov/?id=ED296955>
30. Tombak, B., & Altun, S. (2016). The effect of cooperative learning: University example. *Eurasian journal of educational research*, 16 (64), 173–196.
31. Vygotsky, L. (1978). *Mind and society*. Cambridge, MA: Harvard University Press.



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### **PECULIAR FEATURES OF ATTAINING THE CERA DESIGNATION IN CANADA**

#### **ABSTRACT**

*The article sets out peculiar features of attaining the CERA credential from the Canadian Institute of Actuaries. The analysis results show that there are scores of ways available to candidates perusing the aim of becoming a CERA. There have been singled out the main models following which it is possible to get the designation which is administered by the following professional bodies: the pathways proposed by the Institute and Faculty of Actuaries, the German Society of Actuaries and European Actuarial Academy, the Netherlands and France exam systems, and finally the examinations and modules offered by the SOA. Since there are no examinations and modules leading to the designation administered solely by the CIA, the research is basically focused on the analysis of the standards laid down by the CAS and SOA which are the Institute's closest partners offering the requirements completion of which results in attaining not just the CERA, but also the ACIA and FCIA credentials. Having analyzed the SOA's CERA examination systems, we have figured out that for candidates willing to become CERAs there are only two ERM specific activities: the ERM exam and module. We may conclude that there is a considerable overlap between the two, only the exam section dedicated to extensions being different. The CAS system is organized on the basis of cooperation with the Institute and Faculty of Actuaries meaning that on the pathway to the designation awarded by the CAS candidates have to complete the Risk Management Specialist Technical Exam which is commonly abbreviated to ST-9. The second ERM specific requirement is the completion of the Enterprise Risk Management and Modeling Seminar. A two-fold nature of the CERA requirements in the CAS case is utilized to a more efficient extent as it adds an interactive component and an opportunity to exchange experience with the actuarial practitioners working in the field of ERM.*

**Keywords:** CERA, actuary, Canada, CIA, SOA, CAS, ERM exam and module, ST-9 exam, Enterprise Risk Management and Modeling Seminar.

#### **INTRODUCTION**

Taking into account the fact that the actuarial profession is well-equipped with methods and tools for risk modeling and management, calculating such measures as, for instance, mortality rates or insurance rates and pension contributions, the rationale behind applying similar practice to nonfinancial fields is evident. Thus, Enterprise Risk Management (ERM) has expectedly become the branch where actuarial knowledge and skills are an essential component of legal entities' financial solvency. ERM implies hazards detection, their monitoring and management with the aim of boosting stakeholders' earnings. In developed countries these functions are currently performed by qualified specialists that have acquired the CERA (Chartered Enterprise Risk Actuary) designation. Unfortunately, for the time being there are no such professionals in Ukraine. But with transformational



processes to market economy in our country, resulting market volatility with its ups and downs, when financial threats are all around, Ukrainian labour market is definitely in need of effective risk managers. From this perspective, the analysis of foreign successful experience of Chartered Enterprise Risk Actuaries education and credentialing seems to be of great importance as it might foster both the development of ERM in Ukraine and be a factor of our education system becoming a part of worldwide cooperation bringing our professionals' training practice closer to the world standards.

#### **THE AIM OF THE STUDY**

Thus, the aim of this paper is to analyze the pathways available to Canadian actuaries to the CERA credential by comparing the SOA (Society of Actuaries) and CAS (Casualty Actuarial Society) requirements for attaining the designation.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

Since the CERA qualification is a relatively new credential, it hasn't been the research subject in psychological and pedagogical fields of Ukraine yet. Peculiar features of becoming a CERA so far were only in the scope of foreign actuarial professionals' scientific interests. Thus, the theoretical framework of our research is mostly composed of regulatory documents, guidelines and professional exams syllabi of the world leading actuarial professional bodies and associations: the CERA Global Association (CGA), Canadian Institute of Actuaries (CIA), SOA and CAS. Besides, the papers by Steve Eadie and Frank Sabatini (2014), Virginia Arlington (2009), Francis P. Sabatini (2012) were inspiring and of use to form a clearer picture of what it takes to become a CERA. The research methods are the analysis and synthesis of pedagogical scientific knowledge, comparative pedagogical analysis, classification of forms and approaches.

#### **RESULTS**

The qualification was first introduced in November 2009, when the group of actuarial professional bodies made a deal to cooperate with the aim of laying down the standards for a brand new designation in risk management – Chartered Enterprise Risk Actuary. All the elaborations have been reflected in the Global CERA Treaty (2009) which includes among other things qualification requirements and the reliable education quality assurance system. The control over following elaborated standards is taken by the Global CERA Association, the main goal of which is similar to the IAA and CIA and lies in the following: to elaborate rigorous professional standards; to promote the CERA designation around the world; to present risk management as a perspective field where actuarial competencies are in demand and to illustrate how risk management might benefit from actuarial skills and knowledge application. (How to become a Member Association (an Acceding Party) to the CERA Treaty, 2009).

It is also worth noting that within the Association and among its member states the CERA designation is treated as the most complex and reliable qualification that exists at present to meet the needs of threats management.

As it is the case with all the actuarial credentials, in the world practice there is no unified approach to attaining the CERA designation. In fact, each professional body being the member of the Global CERA Association follows one of the following pathways:

- Completion of ST-9 exam and the one-day seminar (the pathway is administered by the Institute and Faculty of Actuaries based in the UK and is followed by eight Member Associations located in Great Britain, the USA, South Africa, Australia, China, Japan, India and Israel;



- Six modules, exams and seminars administered by the German Society of Actuaries and European Actuarial Academy. The latter offers the same set of requirements, but in English. The pathway is followed by Sweden, Germany, Switzerland and Denmark;
- The Netherlands' exam system (three exams, an interview based on students' scientific research and four four-day seminars);
- The French system (157 hours of education courses administered by the Institute of Risk Management and the requirement to prepare a written report);
- The way offered by the SOA followed by the USA and Canada (How to become a CERA, 2015).

The CIA which is the voice of the actuarial profession in Canada does not have its own examination system. But at the same time it has the status of an Award Signature which implies the right to award the treaty designation. Thus, it might seem to be a controversy which is effectively solved by giving Canadian actuaries several options: either to choose the CAS approach or the SOA system. Since the latter is more diverse and complicated we are going to concentrate on it first.

In order to obtain the CERA designation from the SOA, a candidate has first to sit for a number of the preliminary exams and complete other requirements leading to the Associate of Society of Actuaries designation (ASA). It includes Validation by educational experience in Mathematical Statistics, Economics, Accounting and Finance, Fundamentals of Actuarial practice e-learning course, Associateship professionalism course and the exams in Probability, Financial Math, Investment and Financial markets, Short-term Actuarial Mathematics, Statistics and Risk Modeling, Enterprise Risk Management Module and Exam (Chartered Enterprise Risk Analyst (CERA), 2018). All the above-listed requirements are compulsory for all actuaries regardless of their specialty track, the only exception being the Enterprise Risk Management Module and Exam.

Since there are only two peculiar ERM disciplines, let us now focus on what they imply. So, the Enterprise Risk Management Module is comprised of nine sections that except for module introduction and end-of-module concluding section include the following subtopics: Enterprise Risk Management as a Separate Discipline; Developing and Evaluating an ERM Framework; Regulation for Risk Management; Definition, Identification and Evaluation of Operational Risks; Collecting and Validating Data; Tools for Measuring and Assessing Risks; Economic Capital as an Enterprise Risk Management Tool; ERM in Strategic Planning (Enterprise Risk Management (ERM) Module, 2016). As we may infer from the module content analysis, it is aimed at equipping candidates with both fundamental (regulatory requirements) and application-oriented knowledge (risk measurement and managing) to dealing with risk. Such an approach contributes to giving a full picture of risks that most companies face operating in a complex business environment.

The Enterprise Risk Management Exam (2018) is divided into two parts. The first section is compulsory for all candidates and comprises the following five topics: Risk Categories and Identification, Risk Quantification and Metrics, Risk Management Approaches: tools and techniques, Economic capital management. The second section is based upon readings which students are supposed to cover according to the chosen extension. The students' extensions options are Retirement Benefits, Individual Life and Annuities, Group and Health, Investment, General Insurance, General Corporate ERM. The essential component of the second part is a case study. As we might notice, the proposed extensions are identical to the specialty tracks required to complete the FSA designation, making the ERM exam more field-specific and serving as a perfectly good reason for the



opportunity to choose the ERM exam instead of one of the FSA requirements which we are going to be considered in more detail further in the paper.

In order to meet the demand for highly qualified risk managers from employers and with the aim of making the process of attaining the CERA credential easier and more compatible with what fellowship specialty track implies, the SOA has changed its syllabus respectively. Thus, effective from 2013 there are two options available for candidates at present: to complete the requirements of the chosen track which results in FSA designation only or candidates may also opt for earning a CERA while on the pathway to FSA that results in attaining both credentials. In this case, instead of sitting for the two-hour specialty exam or one of modules there is an opportunity to pass the ERM Exam or ERM module. How it works by tracks is illustrated with the table below.

Table 1

**Optional ERM pathways available to FSA candidates resulting in either the CERA and FSA credentials or the FSA designation only\***

Track	Exam/Module for FSA	Exam/Module for FSA and CERA
Quantitative Finance and Investment	Investment Risk Management Exam	ERM Exam
Individual Life and Annuities	Life Risk Management Exam	
Retirement Benefits	Retirement Plan Investment and Risk Management Exam	
Group and Health	Health Foundations Module Group and Health Specialty Exam	ERM module ERM Exam
General Insurance track	Advanced Topics in General Insurance Exam	ERM Exam
Corporate Finance and ERM	CERA is automatically rewarded upon the completion of all the CFE requirements	

\*compiled by the author on the basis of the information on the pathways available on the SOA's website (2018)

In contrast to the SOA, the CAS does not administer its own CERA examination system. To get the CERA designation a candidate has to pass Exam 7 (Estimation of Policy Liabilities, Insurance Company Valuation, and Enterprise Risk Management) and Exam 9 (Financial Risk and Rate of Return) which are one of the requirements to attain the FCAS designation. In addition, a candidate must have credit for Exam ST9 (Enterprise Risk Management Specialist Technical Exam) administered by the Institute and Faculty of Actuaries, the UK, and attend The Enterprise Risk Management and Modeling Seminar (Credential Requirements, 2018). As we may easily conclude, similar to the SOA, there are two risk management specific requirements for candidates willing to get credentialed as CERAs by the CAS, and there is only one activity which is directly organized by the CAS. Let's have a look at the latter in more detail.

The seminar (2018) is aimed at: candidates' preparation to apply risk management tools and techniques to business environment by presenting real-life approaches that are used by organizations to manage hazards; increasing candidates' awareness of how ERM works in practice through lectures, case-studies and business plays; informing candidates about peculiarities of ST-9 exam sitting.





All activities that candidates are involved in are of an interactive nature being aimed at meeting the above mentioned objectives. Participants are expected to work in teams doing technical exercises. It will be also required to present their approaches to dealing with various issues offered to candidates in the form of the four mini-cases. As a part of the seminar, all strategic decisions regarding risk and capital management are expected to be justified based on technical actuarial expertise. Besides, the course will also have an interdisciplinary component integrating actuarial science with financial economics. It enables participants to consider risk and capital management issues from a new perspective. And, of course, as it is the case with almost every designation requirement, candidates will have to work with laptops, more specifically economic capital model output will be provided to participants prior to the seminar. As for ST9 preparation, during the seminar candidates will be given some assistance in terms of typical exam questions, the exam protocol and the analysis of the examiners' reports.

The number of attendees is limited to up to 20 participants. All registration is done online on the CAS website, and it is in candidates' best interests to go through it at the earliest, as the choice is made on a first registered, first accepted basis.

ST-9 exam (2017) is aimed at instilling in candidates the key concepts, methods, tools and techniques of risk management and modeling. In order to complete the exam candidates have to master the following topics: ERM Concept and Framework, Application of ERM, Risk Categories and Classification, Risk Aggregation and Modeling, Measurement and Assessment of different Risk Types, ERM Tools and Techniques, Capital Management.

It is also worth noting that in order to attain the CERA designation from the Canadian Institute of actuaries merely passing the required exam and modules is not enough. A candidate must be a Fellow, Associate or Affiliate of the Institute. However, if a candidate is already a CERA holder, there is the transfer policy under which it is possible to transfer supervision from the current professional body to the CIA (What is CERA? 2017). In both cases it is required to complete and submit the application form.

### CONCLUSIONS

Having compared the syllabi of the SOA's ERM Exam and ST-9 exam jointly sponsored by The CAS and IFoA, we may draw a conclusion that applicable to the first part of the former there is a considerable overlap between these activities. The same is true for the SOA's ERM module which offers almost the same content, but with more emphasis given to the role of ERM in strategic planning, actuarial data issues and operational risks. Such similarities result from the rigorous regulations imposed on award signatures and accredited education providers by the CERA Global Association set out in the CERA Global Treaty on key competencies that candidates have to acquire on completion of the long examination process leading to becoming a CERA. Thus, the content is highly standardized and harmonized.

Besides, we believe that the CAS approach seems to be more efficient as the two ERM specific requirements engage participants into different types of activities: the seminar is more interactive and apart from concentrating on technical knowledge, it presents a good opportunity to bounce ideas around between actuarial professionals and obtain some sort of hands-on experience, while ST-9 exam implies lots of self-study working on the recommended list of the required readings. The SOA system is not such a broad spectrum. The candidates go over nearly the same material completing the ERM module and then covering the first part of the ERM exam. The following division of the core readings into specialty tracks is dictated by the opportunity to attain the CERA



credential while on the pathway to FSA. There is also one case study included into the extension specific portion of the ERM exam, but it is solely about a hypothetical organization. There is not any interactive component or best practice.

We may also say that the education requirements to aspiring CERAs are based upon the complex and consistent curriculum enabling to combine actuarial science with the traditional ERM approaches making the CERA credential the most comprehensive ERM qualification to date.

Perspectives for further research are possible ways in which the Canadian experience of cooperation with the SOA and CAS might be applied to the theory and practice of ERM specialists' professional training to satisfy the needs of the domestic market for competent professionals in this field.

#### REFERENCES

1. Arlington, V. (2009). *CERA: treaty launches new risk management credential globally*. *Casualty Actuarial Society*. Retrieved from <http://www.casact.org/media/index.cfm?fa=viewArticle&articleID=1058&CFID=21878014&CFTOKEN=39384776>.
2. Canadian Institute of Actuaries. (2017). *What is CERA?* Retrieved from <http://www.cia-ica.ca/membership/cera>.
3. Casualty Actuarial Society. (2018). *Credential requirements*. Retrieved from <http://www.casact.org/cera/>.
4. Casualty Actuarial Society. (2018). *Enterprise risk management and modeling seminar for CERA qualification*. Retrieved from <http://www.casact.org/cera/index.cfm?fa=seminar>.
5. CERA Global Association. (2009). *Global enterprise risk management designation recognition treaty*. London: CERA.
6. CERA Global Association. (2009). *How to become a Member Association (an Acceding Party) to the CERA Treaty*. Retrieved from <http://cera.unicorn.cloud.ec/sites/default/files/docs/Become-a-CERA-Treaty-member-final.pdf>.
7. CERA Global Association. (2015). *How to become a CERA*. Retrieved from [http://cera.unicorn.cloud.ec/sites/default/files/docs/At\\_a\\_glance\\_routes\\_to\\_CERA.pdf](http://cera.unicorn.cloud.ec/sites/default/files/docs/At_a_glance_routes_to_CERA.pdf).
8. Eadie, S., & Sabatini, F. (2014). Global CERA: an international success story. *The Actuary magazine*, 11 (1), 36–37.
9. *Institute and Faculty of Actuaries*. (2017). *Subject ST9 enterprise risk management*. London: Institute and Faculty of Actuaries.
10. Sabatini, F. P. (2012). Global CERA credential celebrates three-year anniversary. *The Actuary magazine*, 9 (5), 26–27.
11. Society of Actuaries. (2018). *Chartered enterprise risk analyst (CERA)*. Retrieved from <https://www.soa.org/Education/Exam-Req/edu-cera-req.aspx>.
12. Society of Actuaries. (2016). *Enterprise risk management 3.0 module objectives*. Illinois: Society of Actuaries.
13. Society of Actuaries. (2018). *ERM – Enterprise Risk Management Exam*. Illinois: Society of Actuaries.
14. Society of Actuaries. (2018). *Follow one pathway to earn both an FSA and CERA*. Retrieved from <https://www.soa.org/Education/Exam-Req/edu-one-pathway-earn-fsa-cera.aspx>.



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## GOVERNMENT'S EFFORT IN CONTROLLING ENGINEERING EDUCATION IN INDIA

### ABSTRACT

*Present manuscript deals with the Indian government effort in making the control engineering education, an equal standard to any developed country. Control Engineering is an interdisciplinary field of engineering which has an ample number of applications in the almost every core engineering discipline. This is the field which uses the feedback system to get the appropriate performance of the system without any human interaction. Mathematical modelling for the system designs is now performed on the simulation tools. There are multiple steps taken for control-engineering education by the Indian Government, which is a modern technology, applied in daily use from instruments to spacecraft. This manuscript gives a complete overview of different effort taken by the Indian Government to enhance the control engineering education such as developing online courses, online virtual labs, Scilab software packages, Scilab codes for books & Scilab cloud. NPTEL video courses, which are available on online platform, help the students as well as other academicians who have deep interest in the topics related to the control engineering. Virtual labs give the students power to perform the experiment online without setup of any specialized labs through the internet enable device. Scilab cloud is an open source software platform which gives a platform to the students to design the code for the problem & analysis it by changing the associated parameters with it. Textbook companion project is the associated project with scilab cloud in which scilab codes are developed for the solved examples of the certain engineering books. Doctoral thesis from the Indian institutes can be access through online at shodhaganga. With the implementation of 4G telecommunication technology in India, NPTEL videos, Scilab cloud & virtual lab can be accessed through the smartphone without computers or installing the software in smartphone.*

**Keywords:** Engineering Education, India, Scilab, Control Engineering Education, Employment, Technical Education System, Interdisciplinary.

### INTRODUCTION

Control systems engineering or instrumentation & control engineering is the engineering discipline that applies concepts of control theory to design systems with desired output. The practice uses the different type of sensors to measure the output response of the system being controlled and those measurements are given as feedback to the input actuators that can make appropriate changes toward desired output response.



Control Engineering is the interdisciplinary branch, which has a close relationship with electrical engineering, electronics engineering, mechanical engineering, automobile engineering, instrumentation engineering, mechatronics engineering, aerospace engineering & chemical engineering (Bajpai, & Khare, 2015). Applications of control engineering have been found in our daily life product such as washing machine, microwave oven, automobile products etc. (Subbarao, 2013). Engineering Education plays a great role in creating skill manpower, improving the productivity of production units & increasing the quality of life of any nation. Engineering also has the big contribution in any country economy. The Indian government has taken the many steps to improve the quality of engineering education across the nation with the help of different ICT (Information and Communications Technologies) (Bhattacharya, 2008; Subramanian, 2015).

In terms of control engineering, control engineering is offer as an independent engineering discipline in many technical institutes across India, in the name of "Instrumentation & Control". It also offers as one-semester mandatory course named as Automatic Control System for Electronics & Communication, Electrical Engineering, Mechanical Engineering Mechatronics Engineering & other engineering disciplines at the undergraduate level. Postgraduate level, control engineering is offer as specialization (major) Process Control and Instrumentation engineering, Systems & Control, Control & Automation, Control & Computing, Control & Industrial Automation, Control System engineering, Instrumentation & Control, Power and Control and Power System & Control, by Electrical Engineering Department or Electronics & Communication Engineering Department in India. Doctoral & post-doctoral research on control engineering is conducted in premium technical institutions in India (*All India*, 2016; Mohanty, & Dash, 2016).

#### **THE AIM OF THE STUDY**

India is a big country with seventh in rank by area & second in rank by population in the world. India was a hub of science & technology in ancient time. The aim is to give an overview of the Indian government efforts in the field of control engineering. Control engineering is the field, which connects the multiple engineering disciplines (instrumentation & control engineering, electronics & communication engineering, electrical engineering, mechanical engineering, mechatronics engineering, automobile engineering etc.). Due to Make of India, an initiative initiated by the Government of India, multiple industries are (will be) setting their industrial units in India. Sectors like automobile (including electric), aviation, defense manufacturing & renewable energy where this CE plays a great role in the development of the product. For product development, companies need the smart engineer. To fulfill the demand smart & creative engineers, technical institutes need to use the modern technology to teach the inside of control engineering (Agarwal, 2007; Dixit, Hazarika, & Davim, 2017).

#### **THEORETICAL FRAMEWORK AND RESERCH METHODS**

Theoretical framework of present research consists of current data on Indian government effects in specific to the Control Engineering field. Indian government is now taking the multiple steps to improve the quality of the engineering education across India through the dedicated department of Ministry of Human Resource Development. Web based learning, use of open source tools in labs, online workshops, online doctoral thesis database are major initiatives which are used to enhance the engineering education in India.

Data had been collected through the NPTEL website course regarding the Control Engineering and the statistical representation has been given in the paper for NPTEL courses which is given by the renowned faculties in India related to the Control Engineering. Virtual lab details have been gathered from the virtual lab website which is



under the specialization of Mechanical or Electrical or Electronics Engineering. Scilab cloud, which is an online simulation tool, is used for the analysis of the mathematical equation associated with the control engineering. This online platform can be driven from the 4G enable smartphone to draw the different plots or solving the mathematical equations. Shodhaganga & Shodhangotri is an online platform for collection of the research data (thesis) associated to the doctoral research in India.

### RESULTS

The analysis of the contribution has been done through the different sub segments which capture the effort of the Indian Government specific to the control engineering. Due to the interdisciplinary field of engineering, some common efforts related to the engineering have been also capture in this manuscript.

#### *Web Base Learning Through Video Lectures*

MHRD has developed an online database (National Programme on Technology Enhanced Learning) of the video lectures of renowned faculties across India. Initially, it was started in 2003 with Indian Institute of Science with seven old Indian Institute of Technology. Indian Institute of Technology, Madras (Chennai) is the main coordinating institute for NPTEL program. There are twenty-six video & web based lectures dedicated to Control Engineering which include basic control engineering, aerospace control, digital control, process control, computational control, industrial automation, non-linear control, stability and control, optimal control & instrumentation and process control (Ananth, 2011).

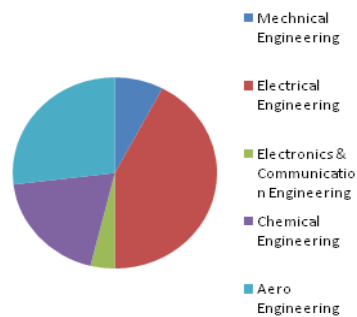


Fig. 1. Contribution by the different departments in NPTEL courses of control engineering

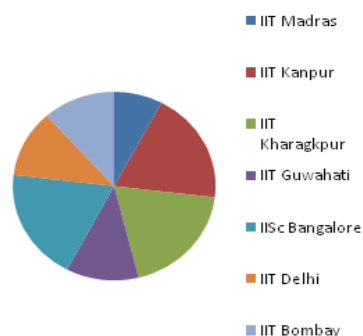


Fig. 2. Contribution by the different institutes in control engineering NPTEL courses



Figure 1 represents statics of the contribution by the department in designing the course & Figure 2 represents statics of the contribution by the institutes in designing the NPTEL course.

These courses are specialized courses, which are useful for the undergraduate and postgraduate students as well as doctoral students who are working in the area of control engineering. Basic control engineering course (three) is also useful for the students (electrical & electronics engineering) who are preparing for different competitive examinations (Krishnan, 2009).

#### **SHODHAGANGA**

Shodhaganga is the online digital repository of a doctoral thesis (electronics version). Since thesis is known as to be rich of information in the specific topic or field. It is an Indian intellectual output, stored in a repository hosted and maintained by the INFLIBNET Centre at Gandhinagar, Gujrat. This help students to get the data & information online, without moving from one institution to another institution to fetch the information & also prevent the duplicate in the ongoing research. Many institutions in India join this library network (Sivakumaren, 2015).

A new type of database is now developed named as Shodha Gangotri, which maintains the initial research synopsis of the researcher. This online database also helps the candidates to prevent the duplicate research work. After the student submits the doctoral thesis at Shidhaganga, his or her synopsis will be mapped with the submitted thesis at shodhagangotri.

#### **OPEN SOURCE TOOLS**

MHRD in India has started Free and Open Software in Education (FOSSEE) project to promotes the use of open source tools instead of proprietary software at different technical institutes throughout the country. Indian Institute of Technology, Bombay is the monitoring institute for this project. Through this project, MHRD is now developing its own open source software tools and software packages for Scilab. There is package developed for control engineering in Scilab but an independent tool for control engineering has not been developed yet. Mathematical modeling problems (simulation) are solved with the help of Scilab or GNU Octave. Block level model problems are solved with the help of Scicos & Xcos which is an open source tool similar to Simulink. Mathematical optimization problems are solved with the help of OR tool which is developed by the FOSSEE India.

A low kit related to Programmable Logic Controllers (PLC) is in developing phase which is going to replace the costly PLC kits, which is useful for the undergraduate students.

#### **TEXTBOOK COMPANION (TBC) PROJECT**

TBC project has given an opportunity to the students & researchers to develop the code of Scilab of solved examples from the standard textbooks. A student who worked under this, gets paid for the work. After reviewing process, Scilab codes uploaded to the Scilab India website for free download (Bajpai, Asif & Akhtar, 2016). Through this codes, students can change the value of the different variables in the problem and do the comparative analysis of the outcome. This will save the time of mathematical calculations in multiple folds & student can think over the problems from different ways. There have been developed twelve books on the control engineering and one book is in under development phase. Students who work under this project to develop the codes of the solved examples are eligible to get some amount for that work after it got completed.





Online facility has been ported by the FOSSEE team to the GARUDA Grid with the help from the GARUDA Team at CDAC, Bangalore (Shrish, Sushant & Rishab, 2016). Figure 5 and Figure 6 show comparative analysis of Bode plot of a transfer function that has different natural frequencies. Changing the parameters in the problems helps a student to understand the concept of the different topics. It also reduces the mathematical calculation part of the student as well as save the time of the students.

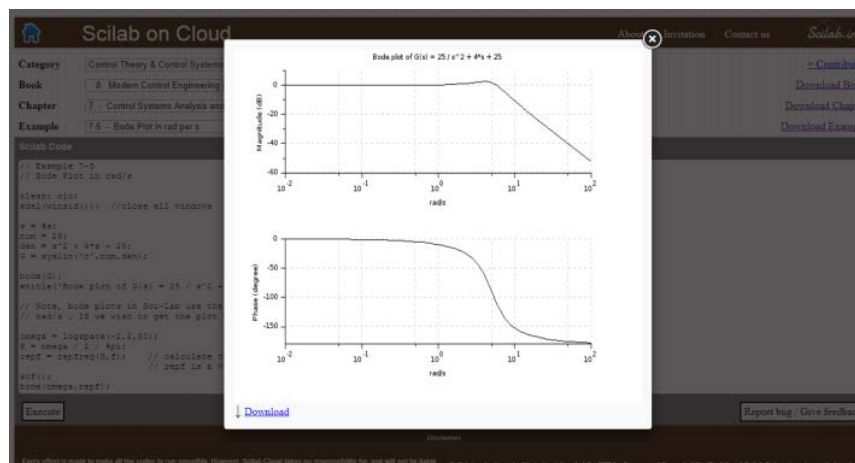


Fig. 5. Designing of Bode plot using Scilab at Garuda cloud

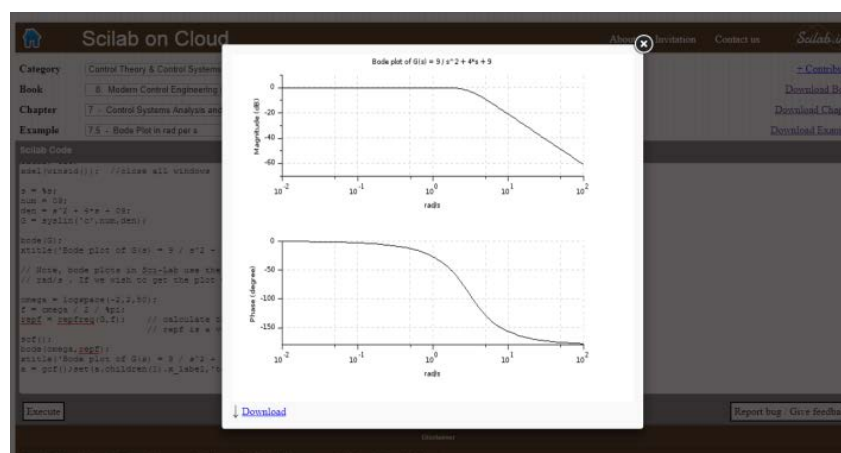


Fig. 6. Designing of Bode plot using Scilab at Garuda cloud

### LAB MIGRATION PROJECT

Lab Migration project aims to migrate labs from Proprietary software to open source software. Proprietary software such as Matlab, Simulink, LabVIEW is used in different topics associated to control system. The Indian government is sponsoring the lab





migration project (Bajpai & Akhtar, 2017). Through this project, till September 2016 ten labs (total fifty-three) of the control system have been converted & one lab (total fourteen) is under development phase and these labs are using Scilab & Xcos. These labs have online code Scilab codes (downloadable).

Experiments related to transfer function generation, block diagram reduction technique, signal flow diagram, feedback characteristics, stability analysis (bode plot, root locus, nyquist plot & polar plot) linear system analysis, state space model, checking controllability & observability of a system simulation of P, PI PD & PID controller etc. are the major experiments whose Scilab codes are available online for this project which can be accessed without any cost. These lab codes are helpful to the students as they can execute on their own system and can be also executed through Garuda cloud without any authentication.

#### ***SPOKEN TUTORIAL***

The spoken tutorial project is designed to improve the learning about teaching and learning of a particular open source software or tools. This is a screencast with running audio & recorded computer session specially created for self-learning. Each video runs up to ten minutes. Through this, any student can learn open source tools such as Scilab, Scicos, Latex etc. which is necessary to work with the control engineering field (Sohoni, 2016).

#### ***VIRTUAL LAB***

Virtual lab project has been developed by the MHRD under the National Mission on Education through ICT. Its main aim is to provide remote access to labs in different engineering branches (Sánchez, Zamora, & García, 2016). Each lab provides a complete for learning management system in which students can use various tools for learning the concept. Through this project, costly instruments are shared across the different geographical locations.

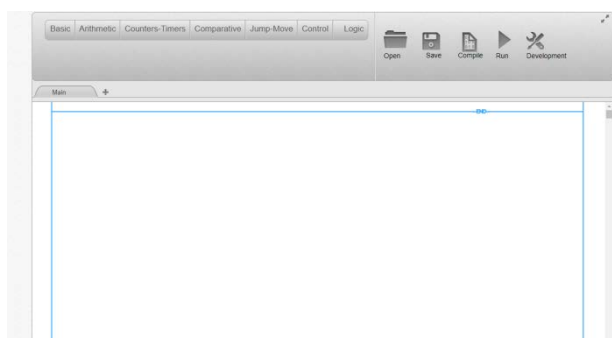


Fig. 7. Virtual lab related to PLC instruments

There are two labs developed for Control Engineering. Systems, Communication & Control Laboratory has been developed by Indian Institute of Technology (I.I.T.), Guwahati which includes some experiments correlated to control system engineering. Another lab is PLC lab which having the experiments on different controller, is developed by College of Engineering (CoEP), Pune, which includes the test on different systems. Fig. 7 shows the front screen of the PLC lab experiment.

#### ***AAKASH***

A low-cost android & GNU/Linux version based computer tablet & laptop has been developed by MHRD name as Aakash (previously Sakshat), to support e-learning



project throughout India. This tablet is being manufactured in India (now) at Hyderabad. Scilab (Version 5.4) is supported on android Aakash tablet. Scilab (Version 5.3) is supported on updated Ubuntu 12.10 version of Aakash laptop which is made by the Datawind (Canadian company). All features of laptop installed in Scilab are not available in the tablet with installed Scilab, but the basic functionality of computation code and generation different plots are easily done in the Aakash tablet. This project has been developing to delivered as one child one laptop.

#### **WORKSHOPS**

MHRD is conducting workshops on open source software & software packages through contact workshop, remote workshop (Through the internet) & self-workshop. There are multiple workshops for the Scilab & Xcos which are used to solve the mathematical & simulation problems related to control engineering (Mohapatra & Mohanty, 2017).

Beside this, MOOCs (Massive Open Online Course) are widely used in distance education which was first introduced in 2008. Many faculties in India have developed their own MOOC (Massive Open Online Course) classes which are aimed at participation of students in virtual classroom having limited functionality (distribution or accessed or share) of lecture notes, problem sets, quizzes, presentations etc.

#### **CONCLUSIONS**

There are many steps Indian government has taken to improve and enhance the engineering education. The Indian government has also taken multiple initiatives for the improve job opportunities for engineers having a background related to control engineering. The Indian government has taken the steps to establish the core industries (which relates to the control engineering) such as defence, aeronautics & machinery in major. Still, India imports as much as more than seventy-five percent of products related to above sectors. Establishment of such industries will boost the job opportunities for engineers having control engineering background. Moreover, these steps also boost the job opportunities for other sectors.

Research sector is also got the boost due to the change in the government policies. Now faculties of research institutes & academic institutes are getting research project easily. Last few years, ISRO is aggressively moving towards to increase it is market share in space market. ISRO has the highest percentage of successful space missions. Control engineering is an integral part of space science. Each spacecraft has multiple controlling devices.

Control Engineering is one of the top fields of engineering in which MHRD is working to develop the associated material. But, more should be done in this field. India lacks a dedicated institute on control engineering in which almost all types of related courses are offered & researches on different subfields of control engineering can be done. No Indian Institute of technology has dedicated department for that and only in two National Institute of Technology has dedicated department on control engineering. MHRD has to open some research faculties in the newly established IITs or NITs on control engineering and one or more institute as a research-driven institute for control engineering. There is a lack of the collaboration on the research project(s) in between any two indian technical institutes. FOSSEE India is annually organizing a conference named SciPy India from 2009 to give a platform to the researcher, students & academician to present their work in the conference in broad level.

These initiatives also helps the undergraduate, postgraduate and doctoral students in grow in knowledge as well as skill. Online labs not only help the students but also give a opportunities to work with the instruments which are not available in their campus. Scilab a open source simulation tool can work in solving the mathematical problem through



computer program. Some tool boxes associated to the Scilab had been developed and some are in developing stages. Development of toolboxes is done by the Indian students which also get the financial assistance ships by Indian Government. Shodhganga is the online library of the collection of the doctoral research thesis, work done by the Indian doctoral researchers in the different fields.

### REFERENCES

1. Agarwal, P. (2007). Higher education in India: Growth, concerns and change agenda. *Higher Education Quarterly*, 61 (2), 197–207.
2. *All India Council for Technical Education Approval Process Handbook (2017 – 2018)*. (2016). Retrieved from <https://www.aicte-india.org/downloads/Final%20Approval%20Process%20Handbook%202017-18.pdf>.
3. Ananth, M. (2011). National programme on technology enhanced learning (NPTEL): The vision and the mission. *Technology for Education (T4E)*, 2011, 8.
4. Bajpai, S., Khare, S., & Yadav, R. (2016). Control education in India: present & future. *IFAC-PapersOnLine*, 49 (1), 813–818.
5. Bajpai, S., & Khare, S. (2015). Mechatronics engineering education in India. *Comparative professional pedagogy*, 5 (4), 73–79.
6. Bajpai, S., & Akhtar, S. (2017). Industrial engineering education in India. *Comparative professional pedagogy*, 7 (3), 84–92.
7. Bajpai, S., Asif, S. S., & Akhtar, S. A. (2016). Electromagnetic education in India. *Comparative professional pedagogy*, 6 (2), 60–66.
8. Bhattacharya, B. (2008). Engineering education in India – the role of ICT. *Innovations in education and teaching international*, 45 (2), 93–101.
9. Dixit, U. S., Hazarika, M., & Davim, J. P. (2017). *A brief history of mechanical engineering*. India
10. Khare, S., Bajpai, S., & Bharati, P. K. (2015). Production engineering education in India. *Management and production engineering review*, 6 (1), 21–25.
11. Khare, S., Chatterjee, A., Bajpai, S., & Bharati, P. K. (2016). Manufacturing engineering education in India. *Management and production engineering review*, 7 (1), 40–44.
12. Krishnan, M. S. (2009, August). NPTEL: A programme for free online and open engineering and science education. In *Technology for Education, 2009. T4E'09. International Workshop on* (pp. 1–5). IEEE.
13. Mohapatra, S., & Mohanty, R. (2017). Adopting MOOCs for affordable quality education. *Education and information technologies*, 22 (5), 2027–2053.
14. Mohanty, A., & Dash, D. (2016). Engineering education in India: preparation of professional engineering educators. *Journal of human resource and sustainability studies*, 4 (2), 92–101.
15. Sánchez, J. V. V., Zamora, J. A. M., & García, F. J. Á. (2016). Virtual lab for digital systems. In *Technologies Applied to Electronics Teaching (TAEE), 2016* (pp. 1–7). IEEE.
16. Sivakumaren, K. S. (2015). Electronic thesis and dissertations (ETDs) by Indian universities in Shodhganga project: a study. *Journal of advances in library and information science*, 4 (1), 62–66.
17. Sohoni, M. (2016). The AICTE review: an opportunity for engineering education reform. *Current science*, 110 (2), 159–166.
18. Subbarao, E. C. (2013). India's higher engineering education: opportunities and tough choices. *Current Science*, 104 (1), 55–66.
19. Subramanian, B. (2015). Engineering Education in India: A Comprehensive Overview. In *International Perspectives on Engineering Education* (pp. 105–123). Springer, Cham.



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## CURRENT SCENARIO OF CERAMIC ENGINEERING EDUCATION IN INDIA

### ABSTRACT

*Historical overview of ceramic development has been provided in the paper. It has been stated that the trail of ceramics has been rooted in Indus valley civilization. Advancement of materials leads to afflux of development in the fields of science and technology. Present paper deals with the realm of Ceramic Engineering, mainly focuses on education and jobs in the respected fields in India. This paper also holds the framework and research work in Ceramic Engineering in India. It has been defined that the whole processing of ceramics is done in the laboratories, like refractories, ceramics white wares, fuel furnace and pyrometry etc. There are a number of jobs which are offered by government sector as well as private sector. It has been determined that ceramic engineers are able to get job opportunities in aerospace, automotive industry, building material manufacturing, chemical industries, electronics, food processing, mining, medicine and refinery sectors in India. Curricula, undergraduate and postgraduate programs in Ceramics Engineering have been characterized. The peculiarities of dual degree education in Ceramics Engineering have been described. It has been stated that there are several initiatives taken by the government for the enhancement of skills and knowledge in Ceramics Engineering, which have been discussed in the extant paper. It has been defined that a new advancement in Ceramics Engineering is the initiative for enhancement of the knowledge through video lectures, offered by a couple of institutes. The prospects of ceramics application have been analyzed. It has been stated that the momentousness of ceramics are protruding diurnally just like in sculptures designing, pottery, building constructions, sanitary & textile etc. Not only the designing field of ceramics but its use in*



*electronics field has been covered. It has been concluded that ceramic has a great potential to give solutions to the heat absorption between the walls or contacting surfaces. Earthenware was the heretofore product of ceramics. It has been proved that the future scope of ceramic is enormous. It has also been stressed that nowadays Ceramic Engineering is one of the emerging fields in engineering education, but a very prospective one.*

**Keywords:** *Ceramic Engineering, curriculum, engineering education in India, technical education, chemical processing, ceramic composites.*

## INTRODUCTION

Ceramic Engineering is one of the oldest disciplines of engineering which deals with the creation of inorganic and non-metallic solid material, which is produced by the technique of heat and cooling. Discovery of ceramics is one of the man's earliest achievements. The word "ceramic" originates from the Greek word "keramos" which means "burnt stuff". Ceramic Engineering is based on the principles of chemistry, physics and engineering. It is a junction of chemical engineering, material science and metallurgy engineering and physical sciences. The traces of ceramic industries have been found as early as 24000 B.C. in Czechoslovakia in the form of animals and human figurines, slabs and ball (Surendranathan, 2014). Potter's craft is one of the oldest vessels which are used in ancient times. The traces of ceramic products have been founded in Indus valley civilization around 2500 B.C. back in the form of clay pots. Gupta, Kushan, Shakas and Mughals played a great role in the development of Indian pottery. Ideals of Buddha were sent to Tibet, China, and Japan. Modern ceramic industry has been established by D. C. Majumdar at Gwalior. Painted sculptures were made with the use of ceramics in historical time. The descriptions of ceramics were also told in the Hindu mythology (Das, 2006).

The first product made with the use of ceramic was earthenware. The manufacturing process of ceramics includes clay and water, which is further mixed and casted into the desired shape, finally this mould passes through the furnace in which it is heated up to 1000–1600 °C. As the time passes, innovation takes place and around 7000–6000 B.C. this ceramic material is used to fill the gap between stones for construction. When the advancement takes place humans start using ceramic for making vessels. During 4500–3500 B.C. white porcelain with bright blue glassy coating was composed. The first writing was in the form of symbols and pictures. The pictures and symbols were engraved on ceramic slab, walls etc. This gave the origin of pictograph and cuneiform symbol during 3500–2800 B.C. (Basu & Balani, 2011).

## THE AIM OF THE STUDY

Present study is aimed at the overview of the Ceramics Engineering in India specific to its education at the professional level. The authors outline two objectives of the present manuscript, which are as follows: 1) to give a complete review of the Ceramic Engineering education in India from diploma level to postdoctoral level; 2) to give a comparative overview of the job prospective related to the concerned field in India.

## THEORETICAL FRAMEWORK AND RESEARCH METHODS

Theoretical framework of present manuscript consists of current data on Ceramics Engineering education in India which were taken from the different institutions' websites. Only two technical institutes (in top fifty Indian institutes) – Indian Institute of Technology-Banaras Hindu University and National Institute of Technology, Rourkela offer the degree programs in India having the separate department. Due to the importance of work, Indian Government is looking to revive this field of engineering. Similar type of study has been



done by the Indian authors in the field of Biomedical Engineering, Control Engineering, Industrial Engineering, Manufacturing Engineering, Mechatronics, Mechanical Engineering, Production Engineering & Renewable Energy (Bajpai & Kidwai, 2017). Professional technical education in India is divided into five levels: diploma (polytechnic) education, undergraduate education, post graduation education, doctoral education & postdoctoral education (Bajpai & Akhtar, 2017).

Information about the running courses specific to the ceramic engineering is gathered from the websites of the Indian Institute of Technology and National Institute of Technology. Similar type of research has been done for the Control Engineering, Renewable Energy, Product Engineering, Manufacturing Engineering, Industrial Engineering.

### RESULTS

In the four year curriculum of Ceramic Engineering in Indian Institute of Technology Banaras Hindu University (IIT-BHU, Varanasi) at undergraduate level 12–14 courses are run as basic sciences and introductory engineering subjects. There are 6–8 core subjects offered by other departments, 10–12 are core departmental subjects, 2 are open elective ones, 1 is a management subject, 4–6 are departmental elective subjects (Department of Ceramic Engineering, Indian Institute of Technology, 2018). Lab work is done in the field of glass and glass ceramics, refractories, advanced ceramics, ceramics white wares, fuel furnace and pyrometry, cement and concrete. UG curriculum also consists of a major project which is done in the final semester in fields of ceramic technology, material development program etc. The first year curriculum is common to the other branches which include the subjects of basic sciences, Introductory Engineering, and English. Second year curriculum includes the subject from material sciences, Mechanical Engineering and basic engineering sciences. A couple of subjects related to the ceramic raw material (including its properties) are offered by the department. Pre-final year is more focused on practical implementation subjects. They are related to process calculation, ceramic material characterization, refractories, glass engineering, electro ceramics and bioceramics. There are a few compulsory subjects offered in the final year which is related to the plant design, fuel furnace and pyrometry, cement, high temperature ceramic processes etc. The rest of the subjects are related to the departmental electives, open electives and management courses. Elective courses are divided into three major groups: Glass & glass ceramics, refractories and electro ceramic & bioceramics. Students need to choose one of the groups which are nearly associated to their industrial training and undergraduate project.

Students, who opted dual degree in ceramic engineering, open elective and departmental elective undergraduate courses are free to choose dual degree eligible subjects instead of those core postgraduate subjects which are available to choose from (Bajpai et al., 2016). National Institute of Technology, Rourkela (NITR) offers postgraduate program of M. Tech with research – M. Tech (R). Major theoretical subjects covered under postgraduate program are Advanced Techniques for Material Characterization, Engineering Mathematics, Phase Equilibria & Kinetics of Ceramic System etc. (Department of Ceramic Engineering, Indian Institute of Technology, 2018). There are also a couple of subjects which are offered as elective (Nano-Ceramics, Bio-Ceramics, Advanced Refractory Engineering, Advance Glass Technology, Cement Process Engineering etc.) in postgraduate program. The lab work is only in the first and second semester and the practical work is done in the field of Material Characterization, Plant Equipment & Furnace Design Project, Electro ceramics & Glass, Cement/Whiteware Refractories. In the last semester, students have to defend their disquisition in front of the audience, which includes an examiner.



Areas for doctoral research are in the fields of Glass and Glass Ceramics, Refractories, Electrical and Electronic Ceramics, Cement and Advanced Building Materials, Bio-glass and Bio-Ceramics, Ceramic Synthesis and Processing Techniques and Composites. At doctoral level, several problem analyses in theoretical and practical fields are done. No institute in India offers postdoctoral degree in Ceramics.

Due to the nature of work, ceramic engineers are able to get the job opportunities in aerospace, automotive industry, building material manufacturing, chemical industries, electronics, food processing, mining, medicine and refinery sectors in India. Steel Authority of India Limited (SAIL), Central Electronics Limited (CEL), VIZAG Steel etc. are the major public sector units (PSU) that hired ceramic engineers for the particular dedicated job. Private companies, such as Kajaria Ceramics, Sadana, Euro Ceramics, Hindware, Asian Granito, Bajaj Tiles, Sonata Ceramics Asian paints are the major ceramic companies which hire ceramic engineers from the Institutions. A ceramic engineer can work as an administrator (project supervisor, technical consultant etc) and researcher in the companies or research institutes. Ceramic, fuel material, electronics ceramic, bio-ceramics; refractories are the current emerging areas in Ceramic Engineering. Tentative packages for ceramic engineers are 6 Lakhs to 10 Lakhs per annum.

S. Banerjee, M. Chatterjee, D. Ganguli, O. Gupta, S. Kumar, S. Sen, A. Surendranathan, A. Varshneya are the famous Indian authors who wrote the books on different topics of Ceramic Engineering. Common subjects related to Mechanical Engineering & Material Science for ceramic undergraduates are the same as Mechanical Engineering undergraduates.

Indian Government has taken initiative for enhancement of the knowledge through video lectures (Akhtar et al., 2016). There are only two courses in NPTEL database and they are offered by Indian Institute of Technology, Kanpur and Indian Institute of Technology, Kharagpur. There are also courses offered in the fields of Electroceramics and Advanced Ceramics for Strategic Application. Students can access the video lecture through official video by providing login details. There are about nineteen to forty videos available which also include a weekly quiz. After completion of the course students get a certificate issued by NPTEL (Ananth, 2011).

### CONCLUSIONS

Now days Ceramic Engineering is the one of the emerging fields in engineering education. Government of India has taken initiative for augmentation of knowledge (through NPTEL lectures) in the field of Ceramic Engineering. There is only a limited number of colleges in India that offer bachelor degree in Ceramic Engineering. Few colleges also offer specialization in the fields of Bioceramics, Nanoceramics, Glassceramics, and Advanced Ceramics etc. Depending on the application of ceramics, a number of jobs are soaring in the market which is one of the major factors for increasing employability in India. Ceramic is not only besmeared with material science engineering but also involved in aerospace industries, building & construction industries, electronics industries etc. In the research field of ceramics, the main focus is to ameliorate the properties of ceramic through different testing and processes, which is the direction of our further studies.

### REFERENCES

1. Agarwal, P. (2007). Higher education in India: Growth, concerns and change agenda. *Higher education quarterly*, 61 (2), 197–207.
2. Akhtar, S., Iqbal, M., & Bajpai, S. (2016). Control engineering as a part of



undergraduate curriculum for mechanical engineering in India. *Comparative professional pedagogy*, 6 (3), 32–36.

3. Ananth, S. (2011). *National programme on technology enhanced learning (NPTEL): The vision and the mission*, Proceedings of Technology for Education International Conference. IEEE.

4. Bajpai, S., Asif, S., & Akhtar, A. (2016). Electromagnetic education in India. *Comparative professional pedagogy*, 6 (2), 60–66.

5. Bajpai, S., & Khare, S. (2015). Mechatronics engineering education in India. *Comparative professional pedagogy*, 5 (4), 73–79.

6. Bajpai, S., Khare, S., & Yadav, R. (2016). Control education in India: present & future. *IFAC-PapersOnLine*, 49 (1), 813–818.

7. Bajpai, S., & Akhtar, S. (2017). Industrial engineering education in India. *Comparative professional pedagogy*, 7 (3), 84–92.

8. Bajpai, S., & Kidwai, R. (2017). Renewable energy education in India. *Comparative professional pedagogy*, 7 (4), 103–113.

9. Basu, B., & Balani, K. (2011). *Advanced structural ceramics*. New York, NY: John Wiley & Sons.

10. Das, S. (2006). *A study on the financial performance of Indian ceramic industry*. Retrieved from <http://shodhganga.inflibnet.ac.in/handle/10603/62349>.

11. Department of Ceramic Engineering, Indian Institute of Technology (Banaras Hindu University) Varanasi. (2018). *Syllabus of different degree programs*. Retrieved from <https://www.iitbhu.ac.in/cer/index.php/courses.html>.

12. Dixit, S., Hazarika, M., & Davim, P. (2017). *A brief history of mechanical engineering*. New York, NY: Springer.

13. Khare, S., Bajpai, S., & Bharati, K. (2015). Production engineering education in India. *Management and production engineering review*, 6 (1), 21–25.

14. Khare, S., Chatterjee, A., Bajpai, S., & Bharati, K. (2016). Manufacturing engineering education in India. *Management and production engineering review*, 7 (1), 40–44.

15. Khare, S., Chowdhry, S., & Bajpai, S. (2014). *Control engineering education in India*, Proceedings of Power, Control and Embedded Systems (ICPCES) International Conference. IEEE.

16. Panda, K. (2016). Shodhganga – a national level open access ETD repository of Indian electronic theses: current status and discussions. *Library Hi Tech News*, 33 (1), 23–26.

17. Readey, W. (1985). Ceramic engineering education. *MRS Online Proceedings Library Archive*, 66.

18. Readey, W. (1987). Specific materials science and engineering education. *MRS bulletin*, 12 (4), 30–33.

19. Readey, W. (1990). The response of ceramic engineering education to the changing role of ceramics in industry and society. *The changing roles of ceramics in society: 26,000 BP to the present*, 5, 343–378.

20. Surendranathan, O. (2014). *An introduction to ceramics and refractories*. London; New York, NY: CRC Press.

21. Tripathi, A., & Jain, S. (2016). *Make in India: new mantra for economy growth*. Hail: University of Hail.

22. Wilson, H. (1925). Notes on ceramic engineering education. *Journal of the American ceramic society*, 8 (10), 519–526.





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### **RELATEDNESS OF STUDENTS' WORK INDUSTRIAL EXPERIENCE TO THE PROFESSIONAL SKILLS AND COMPETENCE DEVELOPMENT IN ENGINEERING CAREER AT NIGERIAN UNIVERSITIES**

#### **ABSTRACT**

*Qualitative occupational training and assessment through acquaintance with the knowledge and insight for transference of concepts and procedure of the fundamental scientific and mathematical skills obtainable in engineering profession produces effective and efficient engineering graduates. Thus, it is a guarantee of effective technical manpower development for the sake of the nation. This is the conceptual basis for this study as it assesses the relevance of workplace and industrial work experience of engineering students to their professional skills training and competence development in engineering disciplines in Nigeria universities. The survey instrument designed for data collection from the participants in the study was an open and closed-ended format questionnaire. It comprises placement category, job experience category, relatedness of placement to the chosen career, relatedness of knowledge/skills in the deployed station in places of attachment and additional gained experience through hands-on incidents during industrial training period. The questionnaire was hand delivered to the participants. Data analysis has been carried out using SPSS version 16.0. Pearson Moment Correlation Coefficient at 95% confidence intervals were computed to determine the extent of association between the relevance of the knowledge/skills obtained during students' industrial training and the establishments where they were employed for their SIWES to their course of study. P value < 0.05 was considered statistically significant. The findings has shown that there was positive correlation ('r' value of 0.375) between the experiences gained in the establishments where students were attached for their industrial training as well as the knowledge and skills acquired in the places of their industrial training. This implies that skills and competence development in engineering career fundamentally enhances students' training in engineering field through hands-on experience involved in industrial training.*

**Keywords:** *training, students, engineering career, industrial experience, professional skills.*

#### **INTRODUCTION**

Technology advancement and the growing trends in industries demand from engineering graduates some certain fundamental skills in line with their career (Ayob, Osman, Omar, Jamaluddin, Kofli & Johar 2013). Enhancing concepts and procedures transference ability imbedded in any engineering discipline and work environment entails efficient and effective training processes. Hands-on experience cannot be imparted through lectures (Collins, 2002). It can only be gained through direct activity either from technical practices in workshops or real world confrontation. Practice based on the courses taught to the student during semesters and Student Work Experience Programme (SWEP) is very constrained in terms of time, tools,



materials and equipment available in schools. Industrial training gives engineering students a glimpse of what the real-world confrontation is all about. Learning and training opportunities extant in industrial training harmonize the career development engineering students receive in schools and as well establish a collaborative link between the education sectors and the industrial sector (Bullock, Gould, Hejmadi & Lock, 2009) for effectual manpower development.

The course industrial training also known as Student Industrial Work Experience Scheme (SIWES) among Nigerian engineering students lasts for three (3) and six (6) months during the students' vacation at the end of the 3<sup>rd</sup> and 1<sup>st</sup> semesters in the 4<sup>th</sup> year of the five years study respectively. This is usually the first hands-on off campus academic constructive training for engineering students in the field work of engineering profession. Production of effective engineering graduates who will, in addition to the fundamental scientific and mathematical knowledge of engineering principles and design, be able to demonstrate competent technical skills obtainable in engineering career demands qualitative occupational training and assessment.

Several studies have shown that exposure to both professional and vocational practices in different occupations in a variety of tasks and experiences enhance students' knowledge and understanding; grant them the opportunity to apply the knowledge, skills and attitudes acquired through other course work in the workplace (Rodzalan and Saat, 2012); develop and enhance students' job competency (Alexander, William, Asaah & Zakari, 2012); make them more informed about their chosen career; and improve employability (Alexander, William, Asaah & Zakari, 2012; Ballinger & Lalwani, 2000). It was stated that employability of a student could be marred if practical skills are lacking as their value in the industrial sector is limited. This affirms that industrial training prepares graduates for the world of work much better. Graduates with both theoretical and practical skill have advantages in the selection done in many industrial sectors (Alexander, William, Asaah & Zakari, 2012).

Industrial training intensively balances with the abstract nature theoretical knowledge proffered with practical experience (Teichler, 1998; Teoh, 2006). The knowledge gained during the industrial training helps build the critical thinking in the training as it is related to what the students were taught or handled with, as it is prevalent in the practical setting situations (Rodzalan & Saat, 2012). Relating the acquired knowledge to real world challenges not only forms critical thinking ability of the students but also boosts their problem solving ability in the nearest future. Other benefits offered by industrial training include access to job networks; insight development of human relationships and safety aspects involved in the practical application of engineering science in the society (Little & Harvey, 2006; Wilton, 2012; Oni, 2007). Industrial training is not limited to the development of the trainee's job competence but also plays an important role in enhancing quality of professionals produced in various fields (Omar, Rahman, Kofli, Mat, Darus & Osman, 2008). Industrial training offers students early acquaintance with the team working for knowledge sharing and close relationship with those in their team (Conti & Kleiner, 1997). It provides early acquaintance with the practices of engineering profession. It also enhances skills development in the profession (Omar, Rahman, Kofli, Mat, Darus & Osman, 2008; Alexander, William, Asaah & Zakari, 2012). Trust and respect for superiors are also built during this period to enhance knowledge transference from employees to trainees (Rodzalan & Saat, 2012). This shapes the mind of the trainee towards the reality of their chosen profession (Alexander, William, Asaah & Zakari, 2012). V. Dick, A. Tissington & G. Hertel (2009) added that individual motivation can be enhanced when trainees are involved. The study also pointed out that older employees in a team serve as sources of reference which motivate the trainee in their career training in team working. This gives the



educational sector direction to the needs of the industrial sectors and devises ways to improve or adjust the knowledge impartation in the institution (Sutliff, 2000). According to A. Alexander, A. William, A. Asaah & A. Zakari, 2012 (2012) industrial training helps identify various needs of employers. Through hands-on experience trainees learn work ethics through professional and practical application of skills in the real life situations. Their already acquired skills and knowledge are refined thereby enhancing their efficiency and expertise. Mastering intellectual techniques in one's profession distinguishes colleagues from those who have not taken time to upgrade themselves or utilize this opportunity in the real life situations.

Observations made by A. Afonja, K. Sraku-Lartey & A. Oni (2005) reveal that there are factors that seriously hamper the vision and mission of industrial training as it relates to professional training of the students. These include inappropriate placement in the place of attachment, deliberate limitation of the hands-on experience that the trainees are made to undergo and poor supervision of the trainees (Afonja, Sraku-Lartey & Oni, 2005; Kofoworola, 2003). The rightful achievement of the purpose of engineering students' industrial training should emphasize not only students' participation in the program but also relevance of students' work experience to the professional skills and competence development in their chosen career. This formed the conceptual basis for this study.

#### **THE AIM OF THE STUDY**

This study is aimed at assessing the relevance of workplace and industrial work experience of engineering students and their professional skills training and competence development in engineering disciplines at Nigerian universities.

#### **THEORETICAL FRAMEWORK AND RESEARCH METHODS**

The participants in this study were engineering students in Nigeria universities. The consent for participation was obtained from the participants by the researcher via personal contacts with respondents before the commencement of their industrial training. 129 participants who turned up to the earlier made proposal to participate in the study at the end of their industrial training were considered 100 % sample for the study. The survey instrument designed for data collection from the respondents in the study was an open and closed-ended format questionnaire. This comprises placement category, job experience category, relatedness of placement to the chosen career, relatedness of knowledge/skills in the deployed station in places of attachment and additional gained experience through hands-on incidents during industrial training period. The questionnaire was hand delivered to the participants. Data analysis was carried out using SPSS version 16.0. Pearson Moment Correlation Coefficient at 95% confidence. Intervals were computed to determine the extent of association between the relevance of the skills/ knowledge obtained during students' industrial training and the establishments where they were employed for their SIWES to their course of study. P value < 0.05 was considered statistically significant. The results obtained in this study were presented in the chart and table.

#### **RESULTS**

Engineering is extremely broad and encompasses a range of more specialized fields of engineering, each with a more specific emphasis on particular areas of technology and types of application. Engineering students during their undergraduate years experience intellectual growth through a wide range of exposure relevant to their career. Theoretical knowledge and hands-on practice in various specialized fields of engineering usually prepare students for the world of work. The fundamental skills engineering graduates possess pledges employability. Depending on relevance and the level of mastery of these developed fundamental skills in one's career, blending and teaming with existing staff in



any organization would seem not to be a challenge. Acquiring necessary and relevant experience to one's profession will lead to rise in improved technical workforce and human capital base of the nation. Places where students undertake their industrial attachments, as presented in this study, vary across different aspects of engineering practices with majority in construction sites 30 (23.3), factories 21 (16.3), technical workshops 33 (25.6), laboratories 5 (3.9), schools 5 (3.9), servicing companies 1 (0.8) and other vast specified/specialized areas in engineering profession reported by the participants 29 (22.5).

Engineering work environment addresses more complex and ambiguous problems than in school. The whole essence of work placement will not be realized if there is no adjunct or augmented experience for the students' industrial training and career. 83.0 % of the participants gained additional experience through working with equipment, using methods and techniques not available in school. To 10.1 % of the participants it was like a continuation or rather repetition, while 5.4 % of the participants could not fix their stand (Fig. 1).

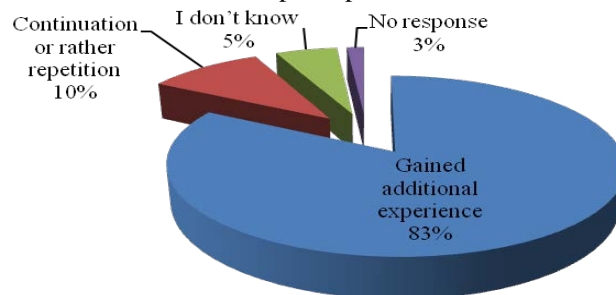


Fig. 1. Adjunct career development experience from SIWES

Being knowledgeable and versatile in the application skills and competencies to perform a defined job or work grants an individual who has been exposed to both the theoretical foundation and hands-on experience involved in engineering profession an opportunity to perform better in the chosen profession. For the period of 6-months during which students were expected to actively participate and benefit from the industrial training, 33 students, representing 80.5 % of the participants, completed their industrial training. According to B. Little and L. Harvey (2006) the duration of work placement must be determined. To some extent the range and scope of activities that students can undertake as well as the opportunities for the development of knowledge, skills and attributes to what might be afforded at the work placement establishment. The complement of an industrial training or work placement period is a positive benefit to both graduates and employers, particularly in an era that stresses economic contribution of higher education through developing graduates' employability (Ayob, Osman, Omar, Jamaluddin, Kofli & Johar, 2013). Industrial training in engineering is very important as it gives an insight on how the industry operates, and provides the necessary engineering career exposure (Ayob, Osman, Omar, Jamaluddin, Kofli & Johar, 2013). The experience the students are privileged to have depends on the operation, type and nature of work going on in the place of industrial training at the time of attachment. The places of attachment, represented in this study, cover wide range of various areas of specialties in engineering profession with predominance being given to job experiences in maintenance (44.2 %), manufacture (10.1 %), assembly



(5.4 %), troubleshooting (12.4%), design and drafting (2.3 %), and other vast specified/specialized areas reported by the participants (24 %) (Table 1). One important aspect in obtaining a relevant industrial training is the match between the students' enrollment degree program and the type of company providing the training. Relevance of the place of attachment to the chosen career was assessed and it was found that the degree of relatedness of the participants to their profession was highly (73.6 %) and averagely (20.9 %) relevant to participants respectively (Table 1). There was no participant whose area of attachment was not relevant to the chosen field.

Table 1

**Work experience establishment's characteristics  
and its relevance to engineering career development**

Industrial training and establishments' characteristics	Characteristics	N (%)
SIWES establishment WORK	Maintenance	57 (44.2)
	Manufacture	13 (10.1)
	Assembly	7 (5.4)
	Troubleshooting	16 (12.4)
	Other specify	31 (24.0)
	Design	3 (2.3)
	Total	127 (98.4)
SIWES establishment related to the course of study	Slightly relevant	5 (3.9)
	Undecided	1 (0.8)
	Averagely relevant	27 (20.9)
	Highly relevant	95 (73.6)
	Total	128 (99.2)
Knowledge/skills relevant at SIWES establishment	Slightly relevant	4 (3.1)
	Undecided	1 (0.8)
	Averagely relevant	26 (20.2)
	Highly relevant	97 (75.2)
	Total	128 (99.2)

A. Ayob, A. Osman, Z. Omar, N. Jamaluddin, T. Kofli & S. Johar, 2013 (2013) observed that experience and training students gained in places of attachment might not be related to the students' career path irrespective of the perceived nature of activities in the place of attachment. The department or the section which the student is deployed to is very important in work placement. Mis-deployment or intentional deployment of the trainee to a section different from the trainee's career during work placement may offer the student the opportunity to learn and handle different tasks in the deployed section but leaves the trainee deficient in the basic knowledge pertinent in his/her area of study (Ayob, Osman, Omar, Jamaluddin, Kofli & Johar, 2013). Experience or training that the students partake beyond the scope of their job specification will not provide the relevant engineering experience which will be required by the student to prepare him/her for a career in engineering profession. The knowledge and skills gained in the place of attachment were found to be highly relevant (75.2%) and averagely relevant (20.2%) among the participants (Table 1).

Correlation analysis was used to determine the extent of association between the relevance of the skills/knowledge obtained during students' industrial training and the



establishments where students were employed for their SIWES in the course of study. According to M. Sabellah (2010) the correlation between two variables may either be positive, negative or zero (independent of each other) depending on the relationship between the variables. This ranges from a value of +1.00 for absolutely positive correlation to a value of -1.00 for absolutely negative correlation. In this study a correlation 'r' value of 0.375 was obtained, which was a positive correlation. This showed that the skills/knowledge obtained during students' industrial training are relevant to their chosen career. This is a result of undertaking and obtaining the industrial training in an establishment relevant to their field of study which, in its turn, enhances their professional skills and competency development in engineering career.

#### CONCLUSIONS

Exposure to real-world confrontation through hands-on experience prevalent in industrial training aids equip the students with the skills and knowledge, which engineering students are required to have as professionals in different areas of expertise. Relatedness of students' work experience to actualization of their professional skills and competence in engineering career has been proved in this study. Nigerian engineering students in this study indicated that there is a positive correlation between the establishments where students were attached for their industrial training and the knowledge/skills acquired in the deployed places of attachment. This implies that students undertaking and obtaining industrial training in an establishment relevant to their field of study enhance their professional skills and competency development in engineering career.

The growing trend and concern for the production engineering professionals who can effectively and efficiently transfer the concepts and procedures of the fundamental scientific and mathematical skill obtainable in engineering profession into the work environment demand the acquired professional skills and developed competence of the trainees to be subjected to further investigation and critical appraisal so as to ascertain and validate the dimension and degree of professional proficiency attained from industrial work exposure.

#### REFERENCES

1. Afonja, A., Sraku-Lartey, K., & Oni, A. (2005). *Engineering education for industrial development: case studies of Nigeria, Ghana and Zimbabwe*. ATPS Working Paper No. 42. Nairobi, Kenya: The African Technology Policy.
2. Alexander, A. William, A., Asaah, A. & Zakari, A. (2012). The impact of students' industrial training on their on their on their employability status after graduation: evidence from Kumasi in Ghana. *International journal of advances in management and economics*, 1 (4), 108–114.
3. Ayob, A., Osman, A., Omar, Z., Jamaluddin, N., Kofli, T., & Johar, S. (2013). Industrial training as gateway to engineering career: experience sharing. *Procedia-social and behavioral sciences*, 102, 48–54.
4. Ballinger, C., & Lalwani, S. (2000). The role of internships in marine policy and integrated coastal management higher education. *Ocean & coastal management*, 43 (4–5), 409–426.
5. Bullock, K., Gould, V., Hejmadi, M., & Lock, G. (2009). Work placement experience: Should I stay or should I go? *Higher education research & development*, 28 (5), 481–494.
6. Collins, B. (2002). Gateway to the real world, industrial training: Dilemmas and problems. *Tourism management*, 23 (1), 93–96.



7. Conti, B., & Kleiner, H. (1997). How to increase teamwork in organizations. *Training for quality*, 5 (1), 26–29.
8. Dick, V., Tissington, A., & Hertel, G. (2009). Do many hands make light work?: How to overcome social loafing and gain motivation in work teams. *European business review*, 21 (3), 233–245.
9. Kofoworola, F. (2003). Engineering education in Nigeria: present learning systems and challenges for the future. *Australasian J. Eng. Edu*, 1, 2–7.
10. Little, B., & Harvey, L. (2006). *Learning through work placements and beyond*. A Report for the Higher Education Careers Services Unit and the Higher Education Academy's Work Placements Organisation Forum. Higher Education Careers Service Unit.
11. Omar, Z., Rahman, A., Kofli, T., Mat, K., Darus, Z., & Osman, A. (2008). *Assessment of engineering students' perception after industrial training placement*. The 4th WSEAS/IASME international conference on educational technologies (EDUTE '08).
12. Oni, S. (2007). Globalization and its implications for vocational education in Nigeria. *Essays in Education*, 21 (1), 30–34.
13. Rodzalan, A., & Saat, M. (2012). The effects of industrial training on students' generic skills development. *Procedia-social and behavioral sciences*, 56, 357–368.
14. Sabellah, M. (2010). *The relationship between attitude and academic performance in chemistry among secondary school students. A case of central Kisii district, Kenya*. Unpublished Masteral thesis, Moi University Eldoret, Kenya.
15. Sutliff, K. (2000). Integrating academics and industry: a challenge for both sides. *ACM journal of computer documentation (JCD)*, 24 (1), 33–38.
16. Teichler, U. (1998). *The requirements of the world of Work*. Proceedings of the World Conference on Higher Education – Higher Education in the Twenty-first Century: Vision and Action 5. UNESCO.
17. Teoh, S. (2006). Industry Explores Internship Issues. *The star online*, 4, 12–16.
18. Wilton, N. (2012). The impact of work placements on skills development and career outcomes for business and management graduates. *Studies in higher education*, 37 (5), 603–620.



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## **ВПЛИВ ЗАХІДНОЄВРОПЕЙСЬКИХ ПЕДАГОГІЧНИХ ТЕЧІЙ КІНЦЯ ХІХ – ПОЧАТКУ ХХ СТОЛІТТЯ НА РОЗВИТОК ПЕДАГОГІЧНОЇ МАЙСТЕРНОСТІ МОЛОДОГО ВЧИТЕЛЯ**

### **АНОТАЦІЯ**

*Для кінця ХІХ – початку ХХ століття характерне обґрунтування реформаційних західноєвропейських педагогічних течій і накопичення ідей щодо створення школи нового типу, виховання самостійних, ініціативних особистостей, удосконалення професійної підготовки вчителя. У статті на основі порівняльних педагогічних досліджень зазначеного періоду проаналізовано зміст індивідуалістичної (вільна творчість учня й учителя), експериментальної (окреслення загальних закономірностей та індивідуальних особливостей фізичного й духовного розвитку дитини), соціальної (налагодження відносин між вихованням і громадою), гербартіанської (виховальне навчання, розвиток різнобічних інтересів), моністичної (методологічний принцип нерозривності способу пізнання, єдності й незмінності світових законів) педагогічних течій. З'ясовано, що концептуальним підґрунтям зарубіжних педагогічних течій стало дослідження особистісних якостей учня як «об'єкта педагогічного впливу», а їхньою об'єднувальною основою – формування гармонійно розвиненої особистості дитини, розвиток її пізнавальної активності. Зазначено, що завдання з формування активних, самостійних, творчих особистостей, здатних змінювати навколишній світ, були покладені насамперед на молодих учителів. Наголошено, що важливим чинником розвитку їхньої педагогічної майстерності слугує вміння аналізувати й використовувати інноваційні ідеї представників новітніх педагогічних течій, опановувати нові освітні технології, методи, спеціальні вміння з формування особистості дитини. Підсумовано, що успіх молодого вчителя пов'язаний із розвитком його особистісних якостей – доброзичливості, людяності, великої любові до дитини й турботи про неї.*

**Ключові слова:** західноєвропейські педагогічні течії, учитель, молодий учитель, особистість учня, самостійність, пізнавальна активність, новітні освітні технології, методи навчання.

### **ВСТУП**

На сучасному етапі розвитку української держави особливої значущості набуває проблема реформування національного шкільництва. Основним принципом майбутніх трансформацій має стати виховання молодого покоління для суспільства освіченого загалом, високої культури й рівних можливостей [16]. Це актуалізує потребу в якісній професійній підготовці педагогічних кадрів – творчих, із високим рівнем розвитку педагогічної майстерності, професійної компетентності, здатних до саморозвитку. Розпочинаючи педагогічну діяльність, випускники педагогічних навчальних закладів мають стати «агентами змін» сучасної української школи та безпосередньо реалізувати реформаційні перетворення в освітній сфері протягом найближчих десятиріч. У





цих умовах важливого значення набуває міжнародний досвід розвитку освіти, його творче використання в національній педагогічній теорії та практиці.

На особливу увагу заслуговує аналіз історико-педагогічного досвіду проведення порівняльно-педагогічних досліджень у кінці XIX – на початку XX століття, періоду зародження ідей реформаторської педагогіки, обґрунтування розмаїття педагогічних концепцій, створення загальноосвітньої школи нового типу для підготовки самостійних, ініціативних особистостей, які здатні творчо використовувати отримані знання, а також забезпечення умов для особистісного та професійного розвитку вчителя.

#### **МЕТА ДОСЛІДЖЕННЯ**

Мета статті полягає в аналізі ідей реформаторської педагогіки кінця XIX – початку XX століття, вивченні напрямів використання конструктивного досвіду щодо розвитку педагогічної майстерності молодого вчителя.

#### **ТЕОРЕТИЧНА ОСНОВА ТА МЕТОДИ ДОСЛІДЖЕННЯ**

Об'єктом аналізу порівняльної педагогіки в кінці XIX – на початку XX століття було вивчення новітнього зарубіжного педагогічного досвіду крізь призму й пріоритети вітчизняної школи та педагогіки. Учені стверджували, що одним із найважливіших напрямів державної політики провідних країн світу має бути спостереження за світовими освітніми вдосконаленнями та призначення для цього державних урядовців із суттєвими повноваженнями [12, с. 5].

Українські науковці мали змогу вивчати зарубіжний досвід через ознайомлення з державними освітніми документами, фаховою літературою, у ході інтенсивної участі в педагогічному процесі під час закордонних відряджень.

Існувало кілька підходів до підготовки наукових досліджень із проблем зарубіжної педагогіки за рівнем виконання в них порівняльного аналізу: елементарні переклади наукових праць без будь-яких скорочень та втручань у текст; переклад авторського тексту з аналізом; ґрунтовний порівняльно-педагогічний аналіз тексту з огляду на закономірності національної освітньої системи [18, с. 5–6].

З'ясовуючи стан, закономірності, тенденції розвитку освіти й виховання в різних країнах світу, українські вчені-компаративісти робили спроби впровадження конструктивних аспектів зарубіжного досвіду в теорію і практику розвитку української школи та професійної підготовки вчителя (С. Ананьїн, М. Аскерман, М. Бунге, Г. Генкель, А. Готалов-Готліб, Г. Гринько, М. Корф, О. Левитський, П. Міжуєв, Я. Михайловський, О. Мусін-Пушкін, О. Музиченко, С. Русова, Є. Янжул та ін.). Автори наголошували на важливості вивчення розвитку шкільних систем у європейських країнах [4; 5] та в Америці [19]; аналізували діяльність освітньо-виховних установ [11; 15; 17]; студіювали особливості професійно-педагогічної підготовки вчителів [3; 12]; обґрунтовували шляхи впровадження позитивного зарубіжного досвіду в Україні [1; 2; 6; 8; 9].

Вагоме зацікавлення становлять також праці, присвячені аналізу історії народної освіти України (О. Антонова, Л. Березівська, Л. Вовк, Н. Дем'яненко, Н. Дічек, Н. Калениченко, І. Лікарчук, В. Майборода, С. Мельничук, Б. Ступарик, М. Ярмаченко та ін.); окресленню специфіки професійної підготовки вчителя в історичному поступі (С. Гончаренко, Н. Демченко, Н. Дем'яненко, Ю. Радченко, О. Сухомлинська, Г. Фещенко та ін.); обґрунтуванню теоретико-методологічних засад розвитку педагогічної майстерності (Є. Барбіна, І. Зязюн, А. Кузьмінський, О. Лавріненко, М. Лещенко, О. Отич, Л. Савенкова, О. Семенов, М. Солдатенко та ін.)

Для дослідження використано комплекс взаємопов'язаних загальнонаукових, історичних, теоретичних й емпіричних методів: історико-педагогічний аналіз і синтез;



конструктивно-генетичний метод; історико-компаративістський метод; історико-педагогічний аналіз архівних та літературних джерел.

### ВИКЛАД ОСНОВНОГО МАТЕРІАЛУ

На формування зарубіжної педагогічної думки кінця XIX – початку XX століття безпосередньо впливали такі філософські течії, як прагматизм, позитивізм, персоналізм, неокантіанство, а також різні психологічні й соціологічні теорії. У цей період простежувані дві основні парадигми: продовження попередньої педагогічної думки – педагогічний традиціоналізм, розвиток нових педагогічних концепцій та ідей – реформаторська педагогіка, або нове виховання. До традиціоналізму належить передовсім гербартіанська педагогіка та педагогіка, що орієнтувала на філософське осмислення процесу виховання й навчання. Реформаторська педагогіка об'єднувала численні концепції та течії в суспільно-політичній думці, які мали на меті докорінно змінити характер діяльності школи [7].

Уміння аналізувати й використовувати інноваційні ідеї представників новітніх педагогічних течій на початку XX століття характеризували як важливий чинник розвитку педагогічної майстерності молодого вчителя. Майстерно керувати педагогічним процесом мав змогу лише теоретично підготовлений учитель, ознайомлений із сучасною науковою термінологією, передовими методами й технологіями навчання. Випускники педагогічних навчальних закладів опановували положення індивідуалістичної, експериментальної, соціальної, гербартіанської педагогіки, моністичної (біологічної) течії.

Представники індивідуалістичної педагогіки, або педагогіки особистості (Ф. Гансберг (1871 – 1950 рр.), Г. Гаудіг (1860 – 1923 рр.), Г. Шарельман (1871 – 1940 рр.) та ін.), трактували педагогічний процес як вільну творчість учня й учителя, що унеможливлювала стримування особистості учня та будь-яку регламентацію його діяльності. Згідно з поглядами німецьких педагогів, система шкільного виховання так чи так шкодила дитині. Педагогічну майстерність учителя дослідники витлумачували як вищу «педагогічну вмільість» та вбачали її в тому, щоб у своїй діяльності вчитель, відмовившись від усіх обов'язкових методів, керувався лише педагогічним тактом. Особистість учителя, його талант називали найбільш значущими засобами виховання.

Шлях формування особистості дитини педагоги окреслювали як створення умов для її творчого саморозвитку, цьому суттєвою мірою повинно було сприяти естетичне переживання. «Для бременців не мають ваги уявлення, їх зміна та ясність; для них головне – творчість, почуття, воля, і їм вони дають на офіру інтелект» [13, с. 7]. На розвиток пізнавальної активності учнів спрямовували організацію їхньої творчої діяльності, а саме: написання вільних творів; розв'язання проблемних завдань тощо.

Засновники експериментальної педагогіки («точна педагогіка», «нова педагогіка»; В. Лай (1862 – 1926 рр.), Е. Мейман (1862 – 1915 рр.)) ставили за мету вивчення загальних закономірностей та індивідуальних особливостей фізичного й духовного розвитку дитини в умовах використання нових методів дослідження. Змістом експериментальної педагогіки були різноманітні відомості з дитячої психології, фізіології, соціології. У центрі уваги перебувало насамперед не навчання, а вивчення дитини. Основними методами таких досліджень визнали емпіричні методи: ретельне спостереження, емпіричні досліди, вивчення дитячих праць, анкетування, застосування педагогічного експерименту, методів статистики тощо. Завдання школи пов'язували з пристосуванням дитини до умов навколишнього середовища, створенням школи-общини, яка моделювала б природне й соціальне середовище. Першорядне завдання вчителя полягало в застосуванні активних методів навчання, організації практичної діяльності учнів, розвитку їхньої пізнавальної активності.



Науковий напрям «соціальна педагогіка» (засновник – П. Наторп, 1854–1924 рр.) виник у зв'язку з тим, що проблема дитини ХХ століття постала як соціальна проблема. Основне завдання соціальної педагогіки – налагодження відносин між вихованням і громадою. Засадничі ідеї педагогічної системи П. Наторпа такі: метою виховання має бути підготовка справжніх громадян правової держави; індивід може існувати тільки в людській громаді та через неї; школа є найголовнішим осередком суспільства, являє собою союз учителів і учнів; зміст освіти реалізують через засвоєння науки, моралі, естетики й релігії, розвиток волі особистості, здатності до чуйності та душевного піднесення; обов'язковими елементами характеру дітей повинні стати сила волі, чіткість судження, здатність логічно мислити, чого досягають лише завдяки самостійній розумовій праці, активному переосмисленню навчального матеріалу, а не через слухання та сліпе заучування. Критеріями освіченості молодого вчителя слугували: активне сприйняття всього людського; правильність думки; самостійність у виконанні завдань; єдність розуму, волі й дій [12, с. 70].

Основоположником гербартіанської педагогіки є Й. Гербарт (1776–1841 рр.). Згідно з поглядами вченого, педагогіку варто трактувати як науку й мистецтво. Зміст педагогіки як науки дослідник обґрунтовував цілісною системою знань, педагогіку як мистецтво пов'язував із навичками, що необхідні для виконання конкретного педагогічного завдання. Школа, на думку педагога, мала забезпечити загальний і всебічний розвиток дітей, сприяти їхній активності й самодіяльності, підтримувати в прагненні до досконалості.

Розв'язуючи питання дисциплінованості вихованців, Й. Гербарт уважав, що необхідно вдаватися також і до засобів примусового педагогічного впливу (погрози, нагляд, заборони, залучення дітей до діяльності тощо). При цьому науковець стверджував, що учитель («митець виховання») повинен пом'якшувати дисциплінованість вихованців любов'ю («педагогічна любов» – єдність почуттів між вихователем і вихованцем), а засоби педагогічного впливу не мають породжувати опору з боку дитини. Учений переконливо доводив, що вчитель, маючи авторитет вихователя, повинен зважати на індивідуальність особистості учня, ставитися до дитини як до вищої цінності, знаходити в її душі прекрасне. Керування дитиною було спрямоване на те, щоб зацікавити її корисною справою, жвавим заняттям.

Й. Гербарт увів до теорії педагогіки поняття «виховальне навчання», мотивуючи це тим, що специфічні за своїми функціями виховання й навчання взаємопов'язані та доповнюють одне одного. Повідомляючи нові знання, педагог формує світоглядні, соціальні, ідеологічні й інші настанови, формує дитину в цілому. Надзвичайно важливим у реалізації завдань виховального навчання й основоположною метою педагогічної діяльності педагог називав розвиток різнобічних інтересів (емпіричний (навчання повинно актуалізувати прагнення до спостережень), споглядальний (стимул до роздумів), естетичний (виховання смаку до прекрасного), симпатичний і соціальний (спрямовані на виховання симпатії до людей), релігійний (духовне світосприйняття)) [12, с. 25].

Розмірковуючи над проблемою реалізації процесу навчання, що мав на меті розвиток різнобічності інтересів, Й. Гербарт представив організацію навчально-пізнавальної діяльності учнів, пов'язану з набуттям нових знань, у вигляді певної послідовності – формальних ступенів навчання. Гербартіанська школа була найкращою пропедевтикою для молодого вчителя на початку педагогічної діяльності, тому що привчала до завершеності думки та сприяла опануванню пізнання як послідовного процесу.



Й. Герbart сформулював чіткі вимоги до фахової підготовки, розвитку педагогічної майстерності, індивідуальних особливостей педагога. Він обстоював позицію, відповідно до якої мистецтвом виховання оволодівають лише в процесі практичної діяльності, а «перехідною ланкою» між теорією й практикою слугує педагогічний такт, наголошуючи, що відчуття свободи в душі вихованця є важливою умовою досягнення мети виховання.

Пристрасним апологетом теорії монізму, засновником Ліги моністів» називали Е. Геккеля (1834–1919 рр.). В основу його наукової теорії покладено методологічний принцип нерозривності способу пізнання, єдності, усезагальності, необхідності й незмінності світових законів, без знання яких неможливо сформулювати правдивий і сталий світогляд [14, с. 13].

До кола дослідницьких інтересів Е. Геккеля входили проблеми реформування чинної системи німецької освіти, зокрема: теорія шкільного керівництва, що вивчала питання впливу на школу церкви, держави, громади, родини; окреслення мети шкільної освіти, яка сприяла б розвитку самостійного мислення дитини, ясного погляду на набуті знання й ознайомлення з природним зв'язком між явищами; наука про розвиток як про провідний принцип навчання; генетичний метод навчання, що мав забезпечити самодіяльність учнів; опис змісту освіти, домінуючим елементом якого повинні стати предмети природничого циклу; обґрунтування ролі вчителя в організації навчально-виховного процесу.

На тлі ідей моністів завдання вчителя полягало в підготовці дитини до подальшого життя, переданні йому накопиченого досвіду, за умови уваги до індивідуальних особливостей. Провідним складником педагогічної майстерності вчителя мав стати добір необхідних форм навчання.

Аналіз зарубіжних течій кінця XIX – початку XX століття вможливив висновок про те, що провідні фахівці світу в галузі шкільної теорії та практики розв'язували тотожні проблеми, але їхні різнопланові підходи призводили до полемки. В основі концепцій усіх педагогічних течій перебував учень як «об'єкт педагогічного впливу», однак різні течії вивчали як домінуючу проблему розвиток різних властивостей людського «Я»: герbartіанська педагогіка – розум, індивідуалістична педагогіка – почуття, соціальна педагогіка – волю, експериментальна педагогіка й моністи намагалися однаковою мірою досліджувати різні аспекти дитячої психіки та впливати на них.

Водночас варто наголосити, що не можна формально поєднувати різнопланові підходи, виокремлювати найбільш оригінальні ідеї кожного педагогічного напрямку. Найбільш придатним для вчителя вважали не найцікавіші способи викладання, а «те краще, що однаково визнали всі педагогічні напрями» [12, с. 90]. Такою об'єднувальною основою послугував принцип трудової школи, що передбачав формування всебічно й гармонійно розвиненої особистості учня, динаміку пізнавальної активності, вільне становлення внутрішнього світу дитини, що ставало підґрунтям для створення в Україні єдиної трудової школи. Характерною особливістю вчителів єдиної трудової школи була розвинена педагогічна майстерність, що розуміли як вищий рівень педагогічної дії, який виявляється в спеціальних уміннях професійно керуватися принципами, що забезпечують розвиток самостійності й ініціативи дітей, спонукають їх до позитивних дій та утворюють особисту відповідальність за свою поведінку.

Розвиток педагогічної майстерності молодого вчителя пов'язували з вивченням ідей філософсько-педагогічних течій, умінням аналізувати поставлені навчальні завдання, усвідомлювати сутність, особливості новітніх освітніх технологій (розвивальна,



дослідницька) і методів навчання (евристичний, задачний, проектний, методи художнього виховання, метод проведення екскурсій, комплексне навчання тощо), оперувати прийомами методичної техніки. В основу такого підходу були покладені добро й людяні взаємини між учителем та учнем, велика любов до дитини й турбота про неї з боку вчителя, повага до вчительської праці з боку учня.

### ВИСНОВКИ

Аналіз західноєвропейських педагогічних течій кінця XIX – початку XX століття дає змогу констатувати, що розвиток педагогічної майстерності молодого вчителя відбувався під впливом ідей індивідуалістичної, експериментальної, соціальної, гербартианської педагогіки, а також моністичної (біологічної) течії. З'ясовано, що підвищення рівня педагогічної майстерності пов'язували з ґрунтовною теоретичною підготовкою й опануванням інноваційних технологій та методів навчання. На молодих учителів поклали важливі завдання з формування активних, самостійних, творчих особистостей, здатних змінювати навколишній світ.

Перспективи подальших розвідок полягають у дослідженні зарубіжних інноваційних форм, методів, технологій навчання кінця XIX – початку XX століття та напрямів їх упровадження з огляду на національні особливості, використання краєзнавчого та природничого матеріалу.

### ЛІТЕРАТУРА

1. Ананьїн С. А. Трудове виховання, його минуле і сучасність / С.А. Ананьїн. – К. : «Книгоспілка», 1924. – 45 с.
2. Аскерман М. Справа виховання та освіти в Українській Соціалістичній Республіці / М. Аскерман. – К. : Типографія Т-ва І. Кушнерьов і К<sup>о</sup>, 1915. – 30 с.
3. Бунге М. Суспільство та початкова й професійна народна освіта в Німеччині, Англії, Франції / М. Бунге. – К. : Типографія С.В. Кульженка, 1877. – 100 с.
4. Генкель Г. Народна освіта на Заході та у нас / Г. Генкель. – СПб. : Вид-во М. М. Гутцац, 1911. – 152 с.
5. Готалов-Готліб А. Г. Форми групування учнів для дидактичних цілей по школах США й Німеччини у зв'язку з сучасним педагогічним рухом / А. Г. Готалов-Готліб. – Одеса : Друкарня Є. Фесенка, 1929. – 37 с.
6. Гринько Г. Ф. Наш шлях на Захід / Г. Ф. Гринько // Путь просвещения. 1923. – 7–8. – С. 15–16.
7. Джурицкий А. Н. Педагогика : история педагогических идей: учеб. пособие / А. Н. Джурицкий. – М. : Пед. об-во России, 2000. – 352 с.
8. Корф М. Підсумки народної освіти в європейських країнах / М. Корф. – СПб. : Петербургский учебный магазин, 1879. – 141 с.
9. Левітський О. З теорії та практики сучасної німецької педагогіки / О. Левітський. – Казань: Лито-тип-фія І. М. Харитоновна, 1912. – 32 с.
10. Михайловський Я. Нарис сучасного стану закордонної народної школи / Я. Михайловський. – СПб. : Типографія Ф.С. Сущинського, 1881. – 251 с.
11. Міжуєв П. Головні моменти розвитку західноєвропейської школи / П. Міжуєв. – М. : Вид-во «Польза. В. Антик и К<sup>о</sup>»1913. – 216 с.
12. Музиченко О. Ф. Сучасні педагогічні течії в Західній Європі і Америці / О. Ф. Музиченко. – К. : Друкарня Всеукраїнської кооперативної спілки, 1919. – 109 с.



13. Музыченко А. Ф. Конспект лекцій по педагогике, прочитанних на земских летних курсах в Полтаве / А. Ф. Музыченко // Народная энциклопедия научных и прикладных знаний. – М., 1912. – Т. 9. – С. 134–157.
14. Музыченко А. Монизм и школа / А. Музыченко // Русская школа. СПб, 1908. – № 4. – С. 3–30.
15. Мусін – Пушкін О. Збірник статей по питанням шкільної освіти на Заході та в Росії за власними спостереженнями / О. Мусін-Пушкін. – СПб. : Типографія М. М. Стасилевича, 1912. – 415 с.
16. «Нова українська школа: простір освітніх можливостей». – К., 2016. – [Електронний ресурс]. – Режим доступу: <https://osvita.ua/doc/files/news/520/52062/new-school.pdf>.
17. Русова С. Народна початкова освіта в Бельгії / С. Русова // Світло. – 1910. – № 1. – С. 29–36.
18. Сухомлинська О. В. Зарубіжний педагогічний досвід в Україні в 20-ті роки / О. В. Сухомлинська // Рідна школа. – 1992. – № 2. – С. 3–7.
19. Янжул Є. К. Трудовий початок в школах Європи. Новітні течії європейської педагогіки у напрямі самодіяльності / Є. К. Янжул. – М. : Вид-во «Народний учитель», 1918. – 96 с.



**ПРАВИЛА ОФОРМЛЕННЯ І ПОДАННЯ РУКОПИСІВ  
(ОНОВЛЕНІ 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.

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– **МЕТА ДОСЛІДЖЕННЯ / THE AIM OF THE STUDY**;

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**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...

#### **REFERENCES**

1. Barca-Lozano, A. *et. al.* (2012). School Motivation and Performance: Impact of Academic Goals, Learning Strategies and Self-Efficacy. *Annals of Psychology*, 28, 3, 848–859.
2. Carretero, M. (2009). *Constructivism and Education*. Buenos Aires: Paidós.
3. Espí, M., & Azurmendi, M. (1996). Motivation, Attitudes and Learning of Spanish as a Foreign Language. *Journal RESLA*, 11, 63–76.



*Приклад оформлення україномовної статті (скорочено)*

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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.

#### **ЛІТЕРАТУРА**

1. Бартми́нский Е. Фольклористика, этнонаука, этнолингвистика – ситуація в Польше / Е. Бартми́нский // Славяноведение. – 2004. – № 6. – С. 89–98.
2. Електронна навчальна бібліотека української фольклористики при кафедрі української фольклористики імені Філарета Колесси [Електронний ресурс]. – Режим доступу : [http://www.lnu.edu.ua/faculty/Philol/www/laboratory\\_folk\\_studies/lab\\_folk\\_el\\_library.php](http://www.lnu.edu.ua/faculty/Philol/www/laboratory_folk_studies/lab_folk_el_library.php).
3. Мещанінов О. П. Сучасні моделі розвитку університетської освіти в Україні / О. П. Мещанінов. – Миколаїв : МДГУ ім. Петра Могили, 2005. – 460 с.
4. Memorial University [Electronic resource]. – Mode of access : <http://www.mun.ca/folklore/about/>.
5. The Folklore Society (FLS) [Electronic resource]. – Mode of access : <http://www.folklore-society.com/aboutus/index.asp>.
6. The Harvard University [Electronic resource]. – Mode of access : [http://web.me.com/folkmyth/Folk\\_%26\\_Myth/Courses.html](http://web.me.com/folkmyth/Folk_%26_Myth/Courses.html).



**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 парафраза 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

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Bragg, S. M. (2010). *Wiley revenue recognition: Rules and scenarios* (2nd ed.). Hoboken, NJ: Wiley.

Тymoshuk, M. V. (2004). *Vydavnycha sprava ta redahuvannia*. Kyiv: In Yure.

Hubbard, R. G., Koehn, M. F., Omstein, S. I., Audenrode, M. V., & Royer, J. (2010). *The mutual fund industry: Competition and investor welfare*. New York, NY: Columbia University Press.

#### 2. Книга: 8 і більше авторів

Прізвище<sup>1</sup>, Ініціали<sup>1</sup>, Прізвище<sup>2</sup>, Ініціали<sup>2</sup>, Прізвище<sup>3</sup>, Ініціали<sup>3</sup>, Прізвище<sup>4</sup>, Ініціали<sup>4</sup>, Прізвище<sup>5</sup>, Ініціали<sup>5</sup>, Прізвище<sup>6</sup>, Ініціали<sup>6</sup> ... Прізвище останнього автора, Ініціали. (Рік). *Назва книги: Підназва* (номер видання). Місце видання: Видавництво.

Zinn, H., Koporacki, M., Buhle, P., Watkins, J. E., Mills, S., Mullins, J. W. ... Komisar, R. (2008). *A people's history of American empire: A graphic adaptation*. New York, NY: Metropolitan Books.

Prusova, V. H., Prykhach, O. S., Dovhan, K. L., Ostapenko, H. H., Boiko, S. O., Polishchuk, O. O. ... Bondar, H. R. (2004). *Matematyka*. Kyiv: Osvita.

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Прізвище редактора, Ініціали. (Ред.). (Рік). *Назва книги: Підназва* (номер видання). Місце видання: Видавництво.

McNamara, R. H. (Ed.). (2008). *Homelessness in America*. Westport, CT: Praeger Publishers.

Ophir, A., Givoni, M., & Hanafi, S. (Eds.). (2009). *The power of inclusive exclusion*. New York, NY: Zone.

Fihol, N. (Red.). (2009). *Ukrainska mova*. Kyiv: NTUU "KPI".

Prusova, V. H., Prykhach, O. S., Dovhan, K. L., Ostapenko, H. H., Boiko, S. O., Polishchuk, O. O. ... Bondar, H. R. (Red.). (2004). *Matematyka*. Kyiv: Osvita.

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Назва організації. (Рік). *Назва книги: Підназва* (номер видання). (Номер звіту (якщо це доречно)). Місце видання: Видавництво.

Peace Corps. (2006). *A life inspired*. Washington, DC: Author.

Institut svitovoi ekonomiky ta mizhnarodnykh vidnosyn. (2012). *Derzhava v ekonomitsi Yaponii*. Kyiv: Nauka.





### 5. Книга без автора

*Назва книги: Підназва.* (Рік). (номер видання). Місце видання: Видавництво.

*Twenty-four hours a day.* (2010). Miami, FL: BN Publishing.

*Ukrainska mova.* (2009). Kyiv: NTUU “KPI”.

### 6. Частина книги

Прізвище автора глави, Ініціали. (Рік). Назва глави: Підназва. В Ініціали Прізвище редактора або укладача (відповідальність скорочено), *Назва книги: Підназва* (номер видання). (сторінковий інтервал). Місце видання: Видавництво.

Grosman, D. (2009). Writing in the dark. In T. Morrison (Ed.), *Burn this book* (pp. 22–32). New York, NY: HarperCollins Publishers.

Farrell, S. E. (2009). Art. In D. Simmons (Ed.), *New critical essays on Kurt Vonnegut* (p. 91). New York, NY: Palgrave Macmillan.

Balashova, Ye. (2014). Stratehichni doslidzhennia. V A. Sukhorukov (Red.), *Priorytety investytsiinoho zabezpechennia* (2-he vyd.). (S. 5–9). Kyiv: Naukova dumka.

### 7. Багатотомні видання

Прізвище автора багатотомної праці, Ініціали, & Прізвище редактора, Ініціали (Ред.). (Рік). *Назва багатотомної праці: Підназва* (номер видання). (Діапазон томів). Місце видання: Видавництво.

Milton, J. (1847). *The prose works of John Milton* (Vol. 1–2). Philadelphia, PA: John W. Moore.

Oliinyk, B., & Shevchuk, S. (Red.). (2006). *Vybrani tvory* (T. 1–2). Kyiv: Ukrainska entsyklopediia.

### 8. Багатотомне видання (окремий том)

Прізвище автора тому, Ініціали. (Рік). Назва тому: Підназва. В Ініціали Прізвище редактора (Ред.), *Назва багатотомної праці: Підназва* (номер видання). (Номер тому, сторінковий інтервал). Місце видання: Видавництво.

Niehuis, S. (2008). Dating. In J. T. Sears (Ed.), *The Greenwood encyclopedia of love* (Vol. 6, pp. 57–60). Westport, CT: Greenwood.

Oliinyk, B. (2006). *Pereklady. Publitsystyka*. V. D. Pavlychko (Red.), *Vybrani tvory* (T. 2, S. 60–61). Kyiv: Ukrainska entsyklopediia.

### 9. Автореферат або дисертація

Прізвище, Ініціали. (Рік). *Назва роботи: Підназва.* (Тип роботи з вказівкою наукового ступеня автора). Університет, у якому захищено дисертацію, Місто.

Mylott, E. (2009). *To flatten her sphere to a circle, mount it and take to the road: The bicycle.* (Master’s thesis). University at Albany, State University of New York, Albany.

Salenko, O. (2001). *Naukovi osnovy vysokoefektyvnoho hidro rizannia.* (Dys. kand. tekhn. nauk). Natsionalnyi tekhnichniy universytet Ukrainy “Kyivskyi Politekhichniy Instytut”, Kyiv.

Zaitseva, I. (2001). *Rozvytok estetychnoi kultury maibutnikh uchyteliv zasobamy teatralnoho mystetstva.* (Avtoref. dys. kand. ped. nauk). Tsentralnyi instytut pislidiplomnoi pedahohichnoi osvity APN Ukrainy. Kyiv.



#### 10. Матеріали конференцій

Прізвище, Ініціали. (Рік). *Назва виступу*, Відомості про конференцію. Місце видання: Видавництво.

Josang, A., Maseng, T., & Knapskog, S. J. (Eds.). (2009). *Identity and privacy in the Internet age, 14th Nordic conference on secure IT systems, NordSec 2009*. Heidelberg, Germany: Springer Berlin.

Polishchuk, O. (Red.). (2008). *Inzheneriia prohramnoho zabezpechennia, Materialy konferentsii molodykh vchenykh*. Kyiv: Nauka.

#### 11. Закони, статuti, накази

Назва закону, статуту або наказу. Номер закону § Номер розділу номер статті. (Рік затвердження).

Serve America Act. 42 U.S.C. § 12501et seq. (2009).

Pro Natsionalnu politsiu. № 580-VIII § rozd. II st. 6. (2015).

#### 12. Урядові публікації

Назва офіційного органу. (Рік). Назва урядового документа: Підзаголовок. Місце публікації: Видавець.

U.S. Department of Justice, Federal Bureau of Investigation. (2009). *The FBI story*. Washington, DC: GPO.

#### 13. Патент

Прізвище винахідника, Ініціали. (Рік публікації). Номер патенту (вказати країну). Місце видання: Патентне відомство.

Le Van Meautte, V. (2003). U.S. Patent No 6,601,955. Washington, DC: U.S. Patent and Trademark Office.

Matsko, H. (1999). Patent Ukrainy 26933. Kyiv: Derzhavne patentne vidomstvo Ukrainy.

#### 14. Стаття з журналу

Прізвище, Ініціали. (Рік). Назва статті: Підназва. *Назва журналу*, Номер журналу, Сторінковий інтервал.

Rowe, I.L., & Carson, N.E. (1981). *Medical manpower in Victoria* (4). East Bentleigh (AU): Monash University, Department of Community Practice.

Roik, M. (2014). Suchasnyi stan reiestratsii predstavnykiv rodu Salix. *Bioenerhetyka*, 1 (5), 21–23.

#### 15. Стаття з газети

Прізвище, Ініціали. (Дата випуску). Назва статті: Підназва. *Назва газети*, сторінковий інтервал.

Itzkoff, D. (2010, March 31). A touch for funny bones and earlobes. *New York Times*, p. C1.

Ali, A. H. (2010, April 27). “South Park” and the informal Fatwa. *Wall Street Journal*, p. A17.

Lykhovyd, I. (2016, Sichen 15). Medychnyi proryv. Den, s. 2.



## 16. Електронні ресурси

БО документа\*. Взято з [http:](http://) або DOI:

\*за прикладами, наведеними вище (книги, журналу, газети і т.д., але без відомостей про місце видання і видавництво)

Ingwersen, P. (1992). *Information retrieval interaction*. Retrieved from <http://www.db.dk/pi/iri>.

Musés, C. A. (Ed.). (1961). *Esoteric teachings of the Tibetan Tantra*. Retrieved from <http://www.sacred-texts.com>.

Hsueh, C. (2010). Weblog-based electronic portfolios. *Educational Technology Research*, 58(2), 11-27. doi:10.1007/s11423-008-9098-1.

Itzkoff, D. (2010, March 31). A touch for funny bones and earlobes. *New York Times*, p. C1. Retrieved from [www.nytimes.com](http://www.nytimes.com).

Dakhno, I. (2014). *Pravo intelektualnoi vlasnosti*. Kyiv: TsUL. Vziato z [http://culonline.com.ua/full/959-pravo-intelect-vlasn\\_dahnopdf.html](http://culonline.com.ua/full/959-pravo-intelect-vlasn_dahnopdf.html).

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