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SPECIFICITY OF STUDENTS' TECHNOLOGICAL TRAINING IN FINLAND AND GREAT BRITAIN

ABSTRACT

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

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

INTRODUCTION

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

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

THE AIM OF THE STUDY

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

THEORETICAL FRAMEWORK AND RESEARCH METHODS

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

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

RESULTS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CONCLUSIONS

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

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

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