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9. LOGISTICS EDUCATION SYSTEM IN POLAND AND RUSSIAN FEDERATION - COMPARATIVE STUDY

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Abstract: The article presents the system of educating logisticians in Poland in comparison with a similar education system in the Russian Federation. The levels of education of specialists in the field of broadly understood logistics have been described. The reflections on the current situation are based on the author's and the Russian experience in this area. The importance of the certificates issued for logisticians, which prove the high competence in this profession, was also emphasised.

Keywords: logistics, education, logistics education system, vocational training, certificates, knowledge, skills, competences

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1. EDUCATION SYSTEMS COMPARISON

The educational system shapes both the competences of future logisticians in general and enables them to obtain specific qualifications, including professional ones, sought by employers.

Logistics is considered to be one of the areas of science which covers a wide range of areas in the field of economics, as well as technical sciences. In the initial phase, its task was to coordinate all flows of goods, as well as the storage of raw materials and stock. However, the traditional understanding of logistics processes was quickly adapted to the ever-changing external environment. Globalisation, the development of transnational corporations, the pursuit of knowledge economy, the increasingly important role of the service sector in shaping of the structure of the economy, Poland's accession to the European Union, the growing competition on the local, regional and national labour market forced changes in the perception of logistics and the roles and tasks of future employees of logistics departments, i.e. their competences, qualifications or professional predispositions. The determinants influencing the perception of logistics and logisticians include:

- increased demand for transport-related services,
- time of flows and rotation of stored materials,
- the establishment and development of large logistics centres,
- improvement of the quality of logistics services provided,
- development of information technology and distribution activities
(B. Słowiński, Koszalin 2008, p. 17).

In Poland, there are over 1000 logistics graduates annually and it appears that this number is insufficient.

Moreover, among the hundreds of Polish universities, both public and private, the vast majority propose a specialisation or a field of study related to logistics. The most important institutions offering studies in logistics include Poznan School of Logistics, the International University of Logistics and Transport in Wroclaw, and Helena Chodkowska University of Technology and Economics in Warsaw¹. It is also possible to acquire logistics knowledge in institutions of higher education offering post-graduate studies or MBA studies. Another form of expanding one's qualifications is a large number of courses and trainings, thanks to which, in addition to additional knowledge, certificates recognised abroad can be obtained.

¹ www.pracujwlogistyce.pl [06.04. 2018]

Logistics belongs to the group of economic sciences, which in recent years have become particularly important in the socio-economic reality. The development of the logistics sector forces the labour market to systematically adapt to the ever-changing situation and to adapt appropriately to the labour market of future employees. Faculties and programmes of logistics studies offered by universities should correspond closely with the expectations of employers. In recent years, the logistics specialist has become one of the most sought after professions, not only in Poland and in Europe, but also in the world. That is why the cooperation of higher education institutions with the business sector is so important. In the Polish educational system, a lot of attention is paid to theoretical issues, pushing the practical part into the background. Among young people, university students, opinions about excessive theoretical knowledge are constantly being expressed. It is therefore important to find a compromise in which practice and theory are intertwined. After all, it is difficult to be a good expert in a given field, not knowing the theoretical basis of one's discipline.

The situation on the educational market is characterised by an excessive supply of services, provided by both public and private universities. This, however, contributes to an increase in the level of information traffic and difficulties in choosing a university which would provide truly comprehensive education in the area of logistics.

Competition on the educational market in the era of demographic decline resulted in too widespread efforts of an increasing number of different educational institutions to implement what pays off - offering logistics studies. As a result, we observe such a phenomenon - many people have a low level of competence to deal with logistics matters, to present them and even less to teach them, but paradoxically they do so because logistics as a subject of education sells well (C. Gradowicz, System edukacji w kształtowaniu kreatywności pracowników dla potrzeb logistyki [w] *Acta Universitatis Lodzianensis, Folia Oeconomica R. Łódź* 2011, p. 251).

The present times were a period of great transformations, which did not, of course, omit such an important area as logistics. The development of the market of logistics services, logistics companies, globalisation of products and trade initially resulted in a small increase in the number of universities educating in the field of logistics, and with time an unprecedented increase in their number. Observing the changes and trends in the market of educational services in logistics, it can be said that initially it was a response to a fashionable word.

The ever-increasing demands of the educational services market, increasing competition and growing awareness of quality make it difficult for universities to secure their competitive advantage and thus to be successful. In such circumstances, universities are becoming increasingly similar to typical business entities competing with each other on the basis of a product or service. A market of this kind requires a constant enrichment of the range of services in order to be one step ahead of the competition.

The competitiveness of higher education institutions in the field of logistics imposes the need to seek solutions that lead to attractiveness and increase of the quality of education, and the role of leader in this area can and should be taken over by the institution of unquestionable authority, which can impose specific

modes of action, norms or standards, as well as set directions for action. With full responsibility we can say and point out that such a university is the Poznan School of Logistics, the unquestionable leader on the market of education in the area of broadly understood logistics (R. Świekatowski, System kształcenia logistycznego – inżynier czy ekonomista – dylematy edukacji [w] Profesjonalizm w logistyce. Kształcenie logistyków – doświadczenia i wnioski, University of Social Sciences, Lodz 2014, p. 35 – 36).

The entire logistics education system in Poland begins at the secondary level. The beginnings should be ascribed to the launch of two core curricula for the professions of "logistics technician" and "forwarding technician". These two professions have led to the need of introducing further vocations of "road transport technician", "rail transport technician" and "port and terminal operating technician". It is highly probable that this was due to the demand of the market for human resources in these fields. Until recently, logistics education was carried out in college and post-secondary schools, but for some time now this level has been slowly declining. It is to be expected that this education will disappear from the educational map.

Another level of logistics education is that of higher education, both in public and private universities. A certain trend is noticeable here. It is true that the number of higher education institutions providing education within the faculty of "logistics" has increased, however, logistics is launched as a specialisation within various fields of study. It is often dictated by counteracting the effects of demographic decline and encouraging potential candidates to take up education in specialties of logistics origin (I. Fechner, K. Kołakowska, Edukacja logistyczna [w] Logistyka w Polsce – Raport 2015, Biblioteka Logistyka, Poznan 2015, p. 147 - 150).

Of course, it is necessary to emphasize the importance of providing post-graduate and MBA studies in the field of logistics in the broadest sense of the word. In the perspective of improving qualifications and competences, as well as the increasing demands of employers, their role is indisputable. Logistical trainings play a similar role as they allow for the swift acquisition of new competences and are supported by companies (I. Fechner, K. Kołakowska, Edukacja logistyczna [w] Logistyka w Polsce – Raport 2015, Biblioteka Logistyka, Poznan 2015, p. 147 - 152).

The diagram below presents the current logistics educational system in Poland.

1. **specialised secondary schools**, attended by young people aged 16-19; schools providing general vocational education, the completion of which enabled them to obtain the secondary school leaving certificate after passing the Matura exam
2. **technical secondary schools** for young people aged 16-20; completion of which enables them to obtain a diploma confirming their professional qualifications after passing the final exam, as well as a secondary school leaving certificate after passing the Matura exam.
3. **post-secondary schools** with a schooling period not exceeding 2.5 years, which, when completed, enable holders of secondary education to obtain a diploma confirming their professional qualifications after passing an exam.

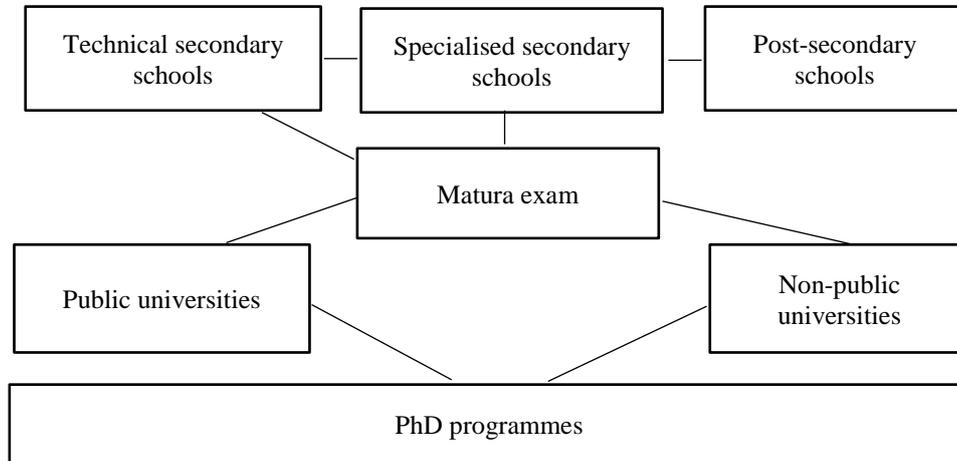


Fig. 9.1. Current logistics training system
Source: Own elaboration

In accordance with the Education Law Act and the Act Regulations implementing the Education Law, the target structure of schools will change, middle schools will be gradually discontinued and the education in general secondary schools and technical secondary schools will be extended. The changes will also apply to vocational education and the organisation and functioning of schools and educational institutions².

The education reform is of an evolving nature. The changes will begin in the school year 2017/2018 and will be completed in the school year 2022/2023. On the other hand, changes in general secondary schools and technical secondary schools are to be initiated from the school year 2019/2020, and will be completed by the school year 2023/2024.

The new system will include: a 5-year technical secondary school, a 3-year first-level industry school, a 3-year special school designed to adapt to work, a 2-year second-level industry school and post-secondary school.

The target structure of education, proposed in the Act - Education Law, will include:

- 1) 5-year technical secondary school,
- 2) 3-year first-level industry school

² <https://men.gov.pl/pl/reforma-prawo-oswiatowe> [22. 04. 2018]

- 3) 3-year special school designed to adapt to work,
- 4) 2-year second-level industry school
- 5) post-secondary school

There will certainly be plenty of room for logistics education in the new school structure.

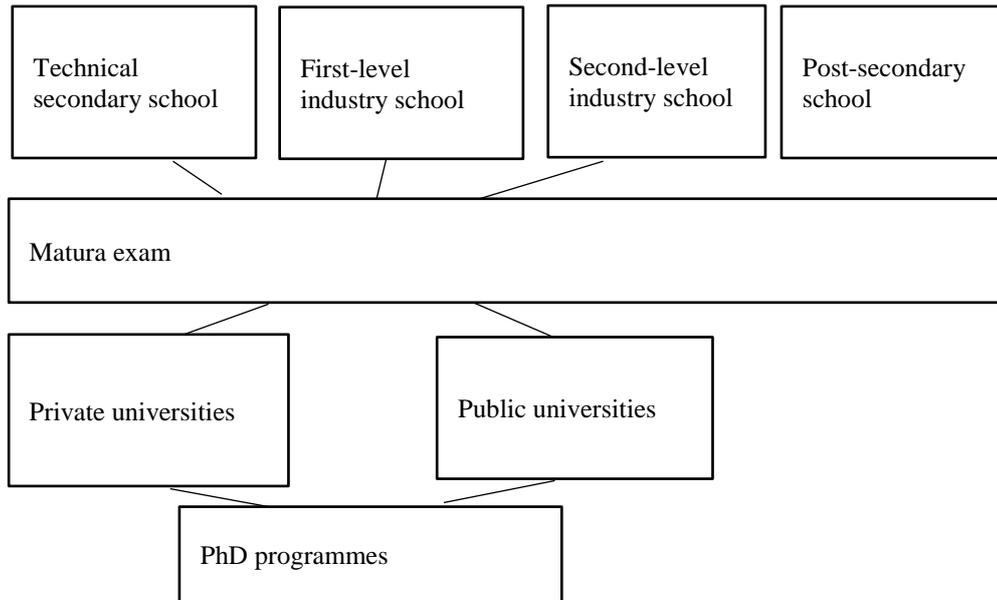


Fig. 9.2. Logistics education in the new educational system

Source: Own elaboration

An authoritative example of the implementation of a logistics educational system is certainly the Poznan School of Logistics, the first logistics university in Poland to provide comprehensive education in the field of logistics, as well as optimal education conditions, which supports talented and ambitious young logisticians. Poznan School of Logistics is listed among the universities whose graduates are most frequently sought after by employers, and the consequence of this is an increase in production, globalisation, development of communications and the strategic location of Poland. All this makes a good logistics specialist and thus a graduate of this university is sought after among employers³.

The above mentioned university provides logistics education at first cycle studies - Bachelor's level, first cycle studies – engineer level, second cycle studies - Master's level,

³ Resources from Poznan School of Logistics

as well as what is a phenomenon on a national scale at the first cycle dual studies. In a short time, following the award of a grant, it will launch second cycle dual studies.

First cycle studies are offered in the fields of logistics and management in the following specialities: transport and shipping, trade and distribution logistics, international logistics (specialty fully realised in English), e - commerce and mobile technologies in logistics, logistics systems engineering, occupational health and safety management, sales management, purchasing management and procurement, management of transport and shipping, and logistics management in small and medium-sized enterprises.

The second cycle studies propose the following specialities to potential candidates: logistics process planning, logistics manager, finance and accounting of logistics companies, transport and shipping company management, enterprises logistics and sales management.

On the other hand, the dual studies, which the Poznan School of Logistics has implemented into its curriculum, are an innovative system of studying, based on the simultaneous acquisition of academic knowledge and practical experience. The programme of this educational system in the field of logistics covers the necessary theoretical knowledge acquired during lectures, classes and laboratories/workshops, intertwined with periods of working in partner companies.

There is one more important element that distinguishes logistics education at the Poznan School of Logistics from similar education at other universities. All specialties implemented as part of the education programme have patrons in the form of recognised enterprises operating in the area of broadly understood logistics.

Not without significance is the proposal of the university addressed to students in the form of opportunities to obtain important certificates, which enrich the acquired skills. These certificates are: the international Candidate European Senior Logistician certificate awarded by the European Logistics Association - 1st cycle studies and the Master Level - MBA studies, GS1 Barcode Certificate, the possibility of exemption from the written part of the exam for the Certificate of Professional Competence of the Road Haulier of Goods, the Certificate of knowledge of simulation software iGrafx or the Certificate of knowledge of advanced spreadsheets ECDL ADVANCED A2 and several certificates related to quality management - Internal auditor's certificate and a proxy according to ISO 9001 standards and the Certificate of a proxy for the occupational health and safety management system.

All these initiatives put the Poznan School of Logistics at the forefront of logistics education and at the same time set it as a model to follow.

The figure below shows a model example of an education system in the field of logistics implemented at the Poznań School of Logistics.

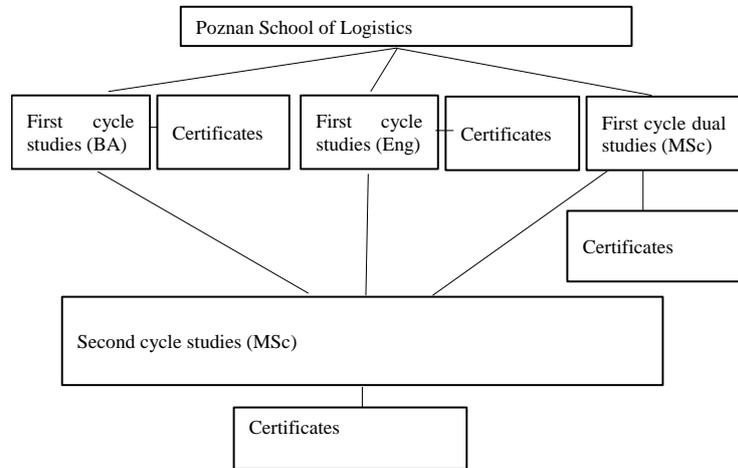


Fig. 9.3. Logistics educational system of the Poznan School of Logistics
Source: Own study based on data from the Poznań School of Logistics.

In the Russian Federation, the system of logistics education is quite different from the Polish one, although some similarities can be observed.

The document defining the basic conditions of the education system and the implementation of professional secondary and higher education programmes is the All-Russian Classification of Teaching Specialities⁴.

In this document, logistics does not function in the chapters on higher education, both at the Bachelor and Master levels, and it is not separated as a fully-fledged field of study. It is part of the faculty of management. This way, the All-Russian Classification of Teaching Specialities determines the position of logistics in the following areas⁵:

1. speciality in secondary education - operational activities in logistics,
2. management faculty (Bachelor level),
3. management faculty (Master level).

The teaching standards of the Russian Federation show the requirements that should be met as a result of mastering the basic curriculum (secondary school) and

⁴ ОК 009-2016. Общероссийский классификатор специальностей по образованию: Приказ Росстандарта от 08.12.2016 № 2007.

⁵ Ibid.

curriculum at the bachelor and master levels. Cultural competences are of a general nature. The list of professional competences of the secondary level operational logistician is presented below:

1. Taking part in the development of strategic and operational logistics plans at the branch level of the logistics system, taking into account the objectives and tasks of the organisation, and organising the work of individual elements of the logistics system.
2. Planning and organizing document circulation within the logistics system elements, i.e. receiving, completing and compiling the necessary documentation on one's own.
3. Selection of suppliers, carriers, determination of the type of intermediaries and distribution channels.
4. Possessing the ability to apply methodology of design, organisation and analysis at the branch level of logistics system of inventory management and distribution channels.
5. Having basic operational planning skills and the ability to organise material flows within production.
6. Management of logistics processes taking place in the area of purchasing, production and distribution.
7. Participating in the development of processes and infrastructure for the procurement organisation process and the organisation of the procurement management structure at branch level of the logistics system, taking into account the objectives and tasks of the organisation.
8. Adaptation of the methodology used to design logistics systems.
9. Use of different models and methods of stock management.
10. Execution of order, stock, transport, storage, packaging and service management.
11. Optimisation of resources within the organisation related to the management of tangible and intangible streams.
12. Using the methodology of evaluating the effectiveness of the logistics system elements.
13. Preparation of the programme and implementation of monitoring of work indicators at the level of branches of the logistics system (suppliers, intermediaries, carriers, effectiveness of warehouse management and distribution channels).
14. Calculation and analysis of logistics costs.
15. Using modern logistics concepts and principles for optimising logistics costs.
16. Assessing the efficiency of logistics systems and monitoring of logistics operations.
17. Conducting performance and orders monitoring.
18. Organising cargo receptions and inspections.
19. Selecting and analysing basic criteria for assessing the profitability of storage and transport systems.

20. Determination of the criteria for optimisation of the operation of the branches of the logistics system, taking into account the objectives and tasks of the organization

Higher education institutions in the Russian Federation (Bachelor's and Master's level) in the Faculty of Management have the right to define their own educational profile. For cycle I (bachelor's degree) - logistics. For cycle II (master's studies), on the other hand, there are many variants. At the Saint Petersburg State University of Economics, for example, this includes logistics and supply chain management.

The figure below shows an algorithm concerning the procedure in the area of requirements and implementation of basic professional educational programmes related to logistics and supply chain management.

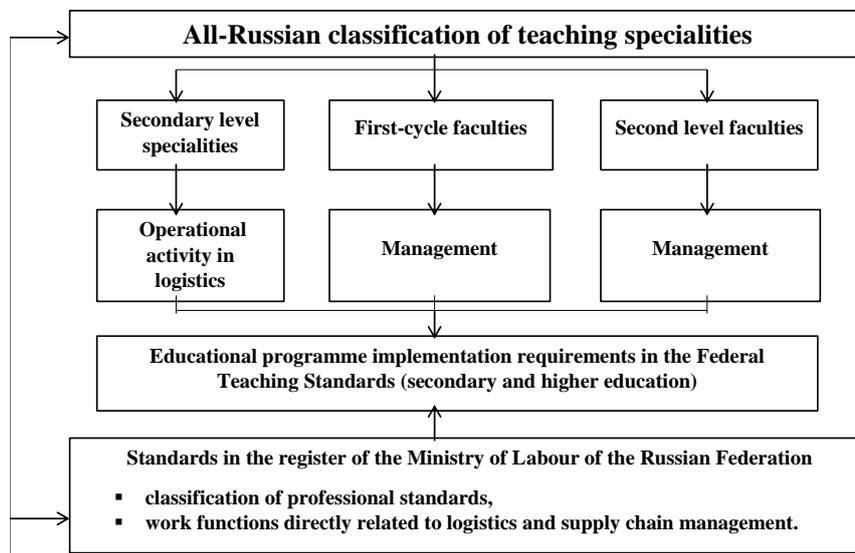


Fig. 9.4. Algorithm of curriculum implementation in the field of logistics
Source: <http://classinform.ru/profstandarty.html> [07.05.2018].

The Russian Federation lists a number of standards related to logistics and supply chain management, which can be associated with educational specialities and thus opportunities to acquire specific skills to undertake work. They are:

- specialist in the field of pharmaceutical activity management,
- controller/dispatcher, e.g. logistics at sports facilities,
- specialist in chemical processing (technology) of oil and gas,
- specialist in technical maintenance and repair in the metallurgical industry,
- specialist in the analysis and improvement of tube industry technology,
- specialist in mechanical engineering,
- mechanical engineering logistician,
- air transport management logistician,

- specialist in strategic and tactical production planning,
- specialist in transport logistics,
- specialist in the organisation of supply networks,
- specialist in transport, storage and storing of biochemical products,
- waste-disposal specialist.

To sum up, it can be said that logistics education can be regarded as a reference in Poland. The role of the Poznan School of Logistics, which provides education in practically all areas of logistics, is particularly worth emphasising here. Of course, if we look at Europe, each country has its own characteristics not only in terms of the level of the economy, but also in terms of the educational system, and the Russian Federation cited in this article is catching up with those countries which have already established their position in the area of logistics training increasingly fast.

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