Edukacja. An interdisciplinary approach 2017, 5–21
DOI: 10.24131/3724.170501
ISSN: 0239-6858

Labour market perspective on the quality of vocational education in Poland

Maciej Lis, Agata Miazga
Institute for Structural Research*

The aim of this article is to summarise the evolution of the labour market situation of vocational education graduates in the last 20 years in Poland. With the use of statistical analyses of LFS and PIAAC data, we present the main changes in the situation of vocational education graduates in terms of their number, employment status, wages and skills. The number of students has decreased sharply in the last 20 years, in basic vocational schools, but not in vocational upper secondary schools. Our results support the thesis that the main challenges facing vocational education in Poland are not the decline in the number of students, but the strong negative selection mechanisms, low effectiveness of attaining basic skills and the inability of vocational education to quickly adapt to structural changes in the economy. We show why the key success factor of vocational education should be the development of general skills, and why introducing a dual education system is unlikely to solve its most important problems in Poland.

Keywords: economics of education; vocational education; quality of education; labour market situation of graduates.

A comparison of the labour market situation and the skill level among graduates of each type of education in Poland (basic vocational schools, vocational upper secondary schools and post-secondary schools, higher education) indicates that graduates of basic vocational schools face the greatest challenges today. Vocational education and training (VET) is most challenged not by the decline in the number of students, but by the strong mechanisms of negative selection, the low effectiveness in the attainment of basic general skills and its inability to adapt quickly enough to structural changes in the economy. We will substantiate this thesis by starting with a definition of quality in education based on the literature of the economics of education and present both the Polish and international scientific discourse on vocational education.

We used data from the Programme for the International Assessment of Adult Competencies (PIAAC), the *Polish labour force survey* (Polish LFS) and available reports and analyses relating to vocational education in Poland, as well as international research on the determinants of educational results. With the use of comparative statistics, the first part of the paper presents a diagnosis of the problems of vocational school graduates. In the second part, we present the findings for the vocational education system and discuss its most important developments. The main line of the analysis consists of the outcomes of VET students in the context of changes occurring in recent years in

* Address: ul. Rejtana 15/28, 02-516 Warszawa, Poland.
E-mail: maciej.lis@ibs.org.pl

Polish vocational education. The impact of these changes on the fate of graduates is not yet visible. Focusing only on reducing the mismatch of the educational structure to local labour markets is not sufficient. The teaching of basic skills, such as reading and logical reasoning, must also be improved. A premature and narrow specialisation does not provide graduates with the skills needed to undertake lifelong learning, and will also hinder their adaptation to future changes in the labour market. Promoting, in particular, the dual system, like the German one, must involve an improvement of the quality of vocational schools. This will not be possible in regions where there are no companies ready to cooperate with such schools. In the conclusion, we enumerate the major problems of vocational education in Poland and suggest measures to solve them.

Literature review

The human capital formed by the education system is an important driver of economic growth. Both empirical studies on growth theory (Barro and Lee, 1993; 2001; 2013; Mankiw, Romer and Weil, 1990), as well as wage formation (Card, 1999; Mincer, 1974) confirm that better educated populations develop faster and better educated persons are more productive. However, in the case of the Organisation for Economic Cooperation and Development (OECD) member states, largely "saturated" with education, the quality of education, i.e. the level of skills gained at school and their relevance to the structure of the economy, becomes more important than merely the average number of years spent in school (Altinok, 2007; Hanushek and Woessmann, 2007; 2010).

In the analysis presented in this article, the quality of education is defined with two dimensions: students' skill level, measured using tools that enable comparisons to be made between countries (PISA and PIAAC studies) and indicators of employment and the earnings of graduates of given types of schools. This final assessment of the quality of education is objective and differs from the standard concepts of the subjective assessment of quality made by the consumers of the education system who are not an homogeneous group – they include students, parents and teachers (Chua, 2004). In addition, the characteristics of the education process, often identified with its quality, were treated as factors of quality production. These are both the hard to measure characteristics, such as motivation and the approach of teachers to students, institutional elements – scope and coherence of the curricula, as well as easily observable characteristics, such as the number of students in a classroom, the quality of a school's buildings and equipment. But it is the skills that students attain from school and their ability to cope in the labour market in the short and long term that are the final economic measure of the quality of education. This understanding of the quality of education, as opposed to its quantity (in the form of the number of years spent in school), is becoming more and more common in studies on the economics of education (Hanushek and Woessmann, 2007).

The aim of vocational training, as well as each stage of education, is to enable graduates to cope with the labour market. The development of vocational education at the expense of general education has certain risks, especially in the long term. Eric Hanushek, Ludger Woessmann and Lei Zhang (2011) show that an easier transition from school to work through vocational education is often linked to a lower tendency to participate in lifelong learning and a quicker departure from the labour market. Therefore, increasing the role of vocational training at the expense of general education may cause adverse consequences in the long term, despite the short-term benefits in the form of higher employment among young people.

Diagnosing the Polish system of vocational education is the subject of many scientific studies. The problems of the vocational education system in Poland are identified, e.g. the outdated infrastructure and the lack of connecting theory with practice (Kwiatkowski, 2013). Operational solutions, such as training in companies sites that last for a few hours instead of full-time day internships, deemed better by entrepreneurs, are also found to be ineffective (Kukulak-Dolata, 2013). Schools should be more flexibly managed and respond faster to changes in the labour market (Urbanek, 2013). A higher level of educational standardisation, increasing the importance of practical vocational training and the stronger cooperation of schools with companies are identified as key elements needed to improve the system (Lechowicz and Luszczyk, 2012). The shortage of information is also a problem. Employers do not have information on the qualifications of graduates, while schools and students lack information on the expectations of employers. Therefore Urszula Sztanderska and Wiktor Wojciechowski (2008) proposed to improve the flow of information in both directions, among others by tracking graduates, introducing a system of incentives for schools and teachers based on the situation of graduates in the labour market, and intensifying cooperation between schools and businesses.

Tomasz Gajderowicz, Gabriela Grotkowska and Leszek Wincenciak (2013) conducted an extensive survey of the competences of vocational school graduates that are most valued by employers. The study was carried out on a sample of 1221 businesses employing more than ten employees in the Pomorskie Voivodeship. Data were collected using telephone surveys (CATI). A cluster analysis and the analysis of variance of the rate of requests for specific personal characteristics, key competences and professional qualifications of potential employees were conducted. The results showed that employers view well-developed personal characteristics (e.g. creativity, autonomy, entrepreneurship) as being of major importance. Vocational schools are often expected to specialise in the training of narrow professional qualifications. However, they encounter difficulties in teaching up-to-date technologies. The problem is becoming even more severe due to rapid technological change. Therefore, they should educate students in key competences (e.g. information technologies, communication in native and foreign languages, interpersonal skills), which will enable graduates to adapt to a changing labour market. The relevance of professional qualifications were rarely indicated – most employers looked at most for a driving licence or other professional certificate that cannot be attained at school.

Although the problems of the vocational education system are rather frequently raised in the Polish literature, the diagnosis of the labour market outcomes of graduates is still missing, as it requires a longer timespan (of several decades) and direct measures of skills. This paper aims to fill this gap.

Methods and data

The study used the techniques of the statistical comparative analysis. To compare the skills of graduates of various types of schools between countries, we used individual data from the PIAAC 2012 study. The results of numeracy and literacy skills measurements in selected OECD countries were used. Then they were compared with the results of the PISA study of fifteen-year-olds. The basis for the analysis of the situation of graduates in the labour market in terms of employment, unemployment and inactivity rates were the results of the Polish LFS study from 1995–2012 and the PIAAC study from 2012, while in terms of wages – *The survey on the structure of earnings* (*Badanie struktury*

wynagrodzeń według zawodów, BSW) from 2012. The reference group for vocational school graduates (upper secondary and basic vocational schools) were graduates of other types of schools (including higher education) and vocational school graduates from other countries. The results obtained related to the fundamental dilemmas of the choice of education policies. A critical evaluation of specific changes of vocational training policies is beyond the scope of this paper.

Changes in the labour market situation of vocational education graduates in Poland

The decrease in the popularity of vocational education

The Polish transformation of the late 1980s / early 1990s also affected the education system, especially vocational education. Opening the economy and changing the structure of production resulted in the bankruptcy of many manufacturing plants, which in turn led to a decreased demand for skilled manual workers. Consequently, existing links between schools and companies were severed. The economic transition caused an increase in the demand for well-educated workers and, consequently, in better wages of higher education graduates. The growing demand for white-collar workers, combined with their limited (although gradually increasing) supply, translated into a low unemployment rate and higher wages of university graduates (World Bank, 2006). As a result of new trends in the labour market, the educational preferences of Poles shifted from vocational education to general education in secondary schools and then at universities (Figure 1).

The growing educational aspirations of Polish society were an additional driver of change. All of these factors led to an education boom in Poland, consisting of the growing popularity of higher education. The increase in tertiary education was accompanied by a decrease in the popularity of basic vocational schools among graduates of primary schools and later lower secondary schools. At the same time, the percentage of graduates of vocational upper secondary schools changed to a small extent: between 1995 and 2013, the share of basic vocational education graduates decreased from over 30% to 15%, whereas the decrease in vocational upper secondary school graduates was from 25% to 21%, respectively (calculations based on Polish LFS data for

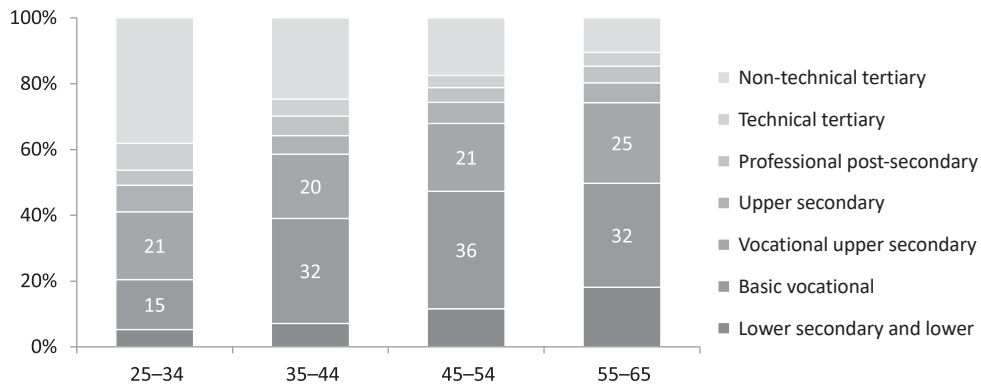

Figure 1. Structure of education by age groups in Poland in 2012 (in %).

Source: IBS and CRZL (2014) and own study based on PIAAC data.

1995–2013). The number of vocational schools decreased as well, from almost 3000 in the 1990/91 school year to less than 1800 in 2012/13 (GUS, 2006; 2013).

Changes in the Polish educational structure were so significant that they stood out internationally. Poland's 25–34-year-olds noted the highest increase in the percentage of persons with an academic degree among all EU countries – from 15% in 2001 to 42% in 2013, with the same ratio in the entire EU27 rising from 24% to 36% (IBS and CRZL, 2014; cf. Figure 2). Older adults also increased their level of education, but not enough to significantly diminish the generation gap. In 2012, only 14% of persons aged 55–65 had a university degree. Simultaneously, only 41% of persons aged 25–34 completed vocational education, compared to 62% in the generation of their parents – persons aged 55–65 (cf. Figure 1, PIAAC data).

Vocational education also changed. Basic vocational schools, which in the centrally planned economy educated the working class, began to give way to schools combining general education with vocational training – vocational upper secondary schools. These processes are reflected by a decrease in the number of graduates of basic vocational schools among younger people. While in 2012 this figure is 33% for people aged 35–64, it is only 15% in the 25–34 age bracket (32% among people aged 35–44, 36% in the group aged 45–54 and 32% in the group aged 55–64). The number of vocational upper secondary school graduates remains unchanged at 20–25%. Moreover, students of basic vocational schools often continue education in supplementary vocational upper secondary schools (Figures 3 and 4).

The decreased significance of basic vocational schools is caused by several factors. First, economic change was associated with a change in wages. Industrial workers, miners and public sector employees lost their position relative to specialists and managers

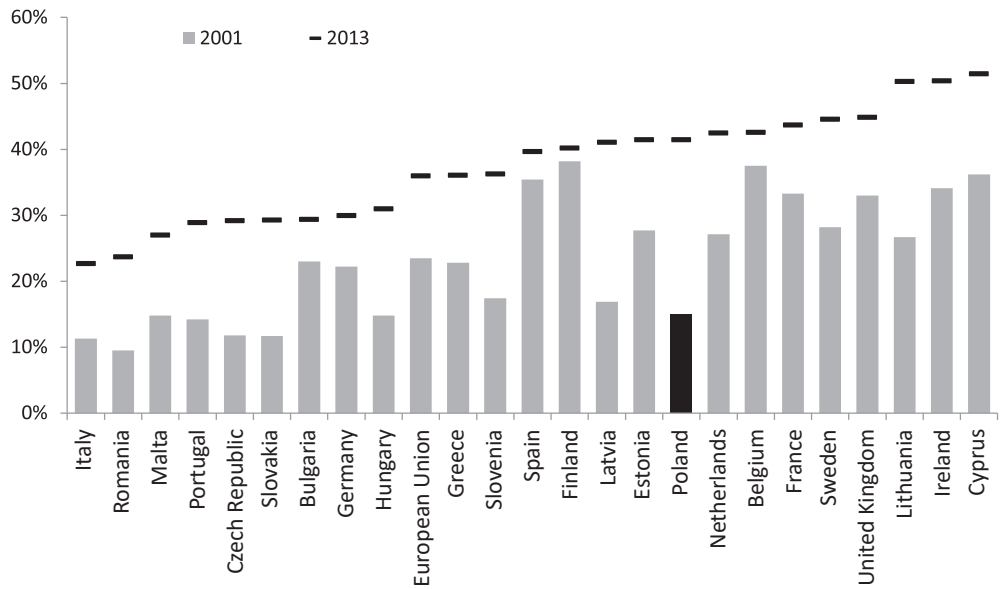

Figure 2. Percentage of persons aged 25–34 with higher education in the EU countries in 2001 and 2013 (in %).

Source: IBS and CRZL (2014) and own study based on PIAAC data.

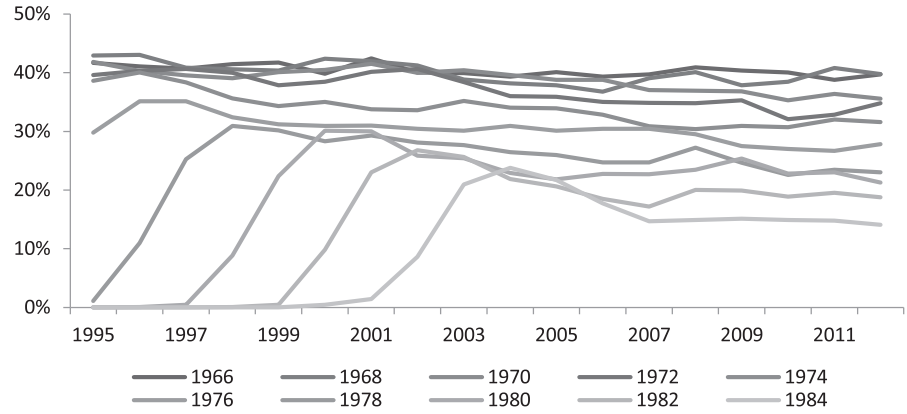

Figure 3. Share of basic vocational school graduates by cohort in Poland.

Source: IBS and CRZL (2014).

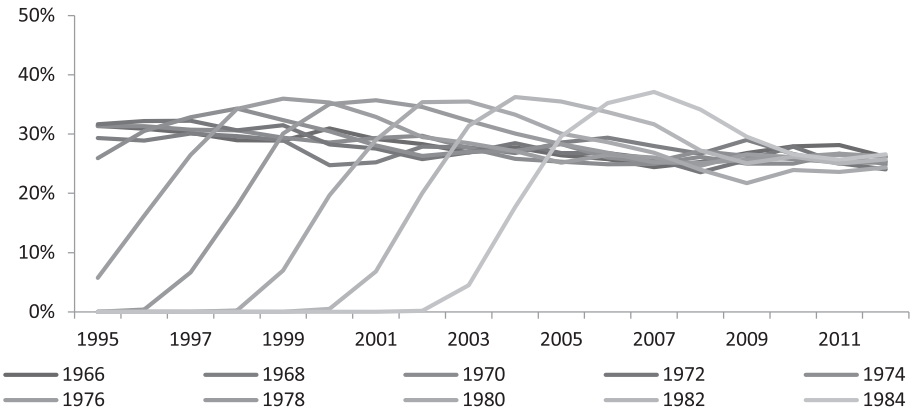

Figure 4. Share of vocational upper secondary school graduates by cohort in Poland.

Source: IBS and CRZL (2014).

from the private sector. Professions that gained more significance required skills that could not be attained in vocational schools, e.g. foreign language skills (Szafraniec, 2011). Second, a pronounced change in the structure of production led to the weakening or collapse of companies which had the greatest demand for vocational school graduates. The mismatch between graduates and the demand for labour was further reinforced by changes in the spatial dimension. As a result of deagrarisation and the natural tendency to concentrate capital in places other than the flagship investments projects from the period of the centrally planned economy, jobs were created more frequently in large agglomerations, which made it difficult for graduates of vocational schools from small towns to find work. At the same time, jobs were lost mainly in villages and smaller towns, located

far away from large cities. This is where the unemployment rate increased most significantly (IBS and Ministry of Labour and Social Policy, 2007).

These phenomena were accompanied by a strong increase in the educational aspirations of the entire society and education policies were focused on increasing general competences and enhancing general education rather than vocational training. The model of professional life also changed. As a result of extending the duration of professional activity, employees had to change not only their employer, but also the scope of the tasks performed and their profession. Therefore, graduates in subsequent years needed skills that would enable them to attain new qualifications, not necessarily in the narrow field mastered in vocational school.

The level of general skills of vocational school graduates

Attaining needed professional skills should enable a smooth transition from school to work. On the other hand, a higher level of general skills increases a person's flexibility in searching for a job and the possibility of changing professions. The ability to retrain is particularly important, as the evolution of the demographic structure in Poland and globalisation will generate transformations in the labour market. While the results of demographic processes and population ageing can be predicted to a certain extent (e.g. increase in demand for carers of elderly people), it is much more difficult to precisely define the impact of new technologies on the occupational structure. It is difficult to predict which professions may become redundant due to new technologies and which may experience increased demand, or which new professions may appear in a few years, a dozen, or in several decades (Bauer and Bender, 2004; Eichhorst, 2015; Galor and Tsiddon, 1997; Merritt, 2014). As a result, it is becoming increasingly important for labour market participants to attain basic general skills, such as reading with comprehension and logical reasoning. These are the predictors for the ability to adapt to the evolving expectations of the labour market.

The level of basic general skills varies depending on the level of education. In Poland, graduates of basic vocational schools have the same general level of skills as graduates of lower secondary school or primary school. In the PIAAC 2012 survey, half of graduates of basic vocational schools aged 25–34 received no more than 242 points for the task involving reading comprehension, compared to 232 points obtained by lower secondary school graduates. In the same test, half of vocational upper secondary school graduates received at least 268 points and higher education graduates – 300 points. Vocational upper secondary school graduates had higher skills in both mathematical reasoning and in reading and writing.

The poorer results of basic vocational school graduates can be explained by the lower quality of education in comparison to vocational upper secondary schools or that persons enrolled in vocational schools start out with lower skills (the so-called negative selection). This occurs at two stages of education: when basic vocational school is selected after completing lower secondary school (often by persons with poorer results in education) and as a result of ending education at this stage and failing to continue education at a supplementary general or vocational upper secondary school, ending with the *matura* and/or occupational exam. A lower quality education may finally result from differences in curricula and the number of hours taken of general subjects. It is worth emphasising that the results of general skills of basic vocational school graduates, which are just slightly higher than of persons who ended their education at lower secondary school, are proof of the failure of vocational schools.

It is also disturbing to see the number of basic vocational school graduates aged 25–34 who could complete only the simplest tasks in literacy (understanding short texts, finding single items of information without the ability to link them) – 34%, numeracy (simple algebraic operations, difficulties with computing percentages and fractions and with more advanced operations) – 38% and problem solving (inability to connect information from websites, draw conclusions on their basis or assess their credibility and relevance; cf. Rynko, 2013) – 12% (Figure 5). Among vocational upper secondary school graduates, such a low skill level is exhibited by one in seven persons aged 25–34 (18% – numeracy, 14% – problem solving, 14% – literacy). It is therefore clear that basic vocational schools do not add any special value in relation to lower secondary schools as far as general competences are concerned.

The shortcomings in general skills prevent basic vocational schools graduates from gaining additional qualifications later in life. Only about 20% of vocational school graduates (vocational upper secondary schools and basic vocational schools) aged 35–54 participated in professional training, with the number at only 13% in the case of basic vocational schools. In the case of upper secondary school graduates, the proportion was 2–3 times higher. The greatest difference between Poland and other EU countries in participation in lifelong learning is among the graduates of basic vocational school and lower secondary school (Figure 6).

The labour market outcomes of vocational school graduates

Vocational schools facilitate starting a job – about 70% of their graduates aged 25–34 are employed (Figure 7). This is slightly more compared to working graduates of general upper secondary schools who have not completed higher education and therefore do not have formal professional qualifications (68%). At the same time, vocational upper secondary school graduates aged 25–34 are the ones that most often have a job (76%), as they have both professional and general competences, although they have not completed higher education. Therefore, vocational skills do not provide a clear advantage over general

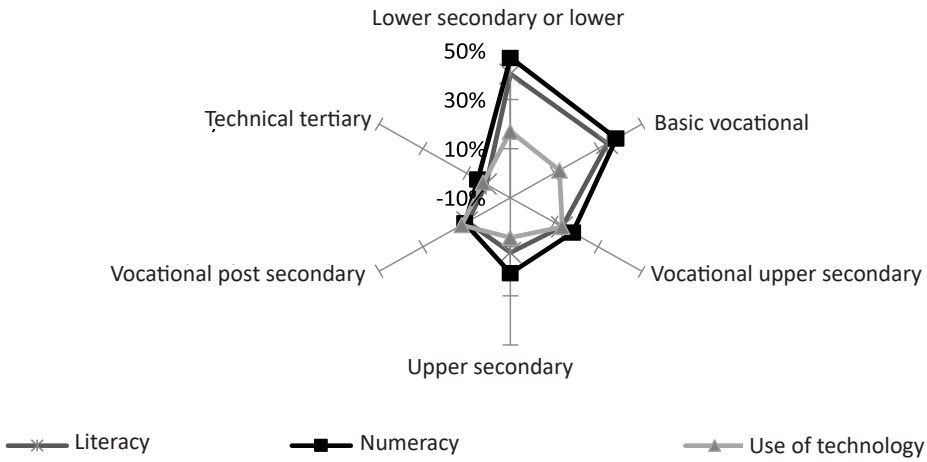

Figure 5. Share of persons aged 25–34 at the lowest skill level by level of education.

Source: own study based on PIAAC data.

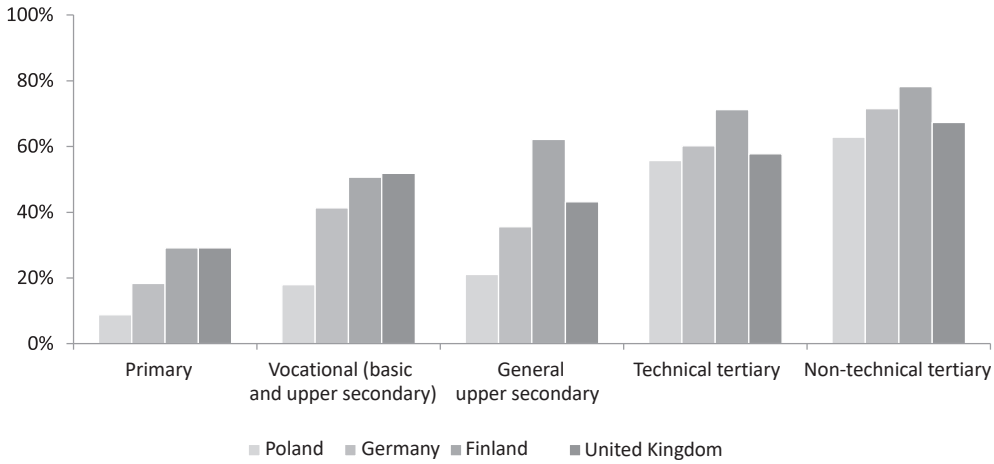

Figure 6. Percentage of persons participating in non-formal education in the last 12 months in the 35–54 age group in selected countries.

Source: own study based on PIAAC data.

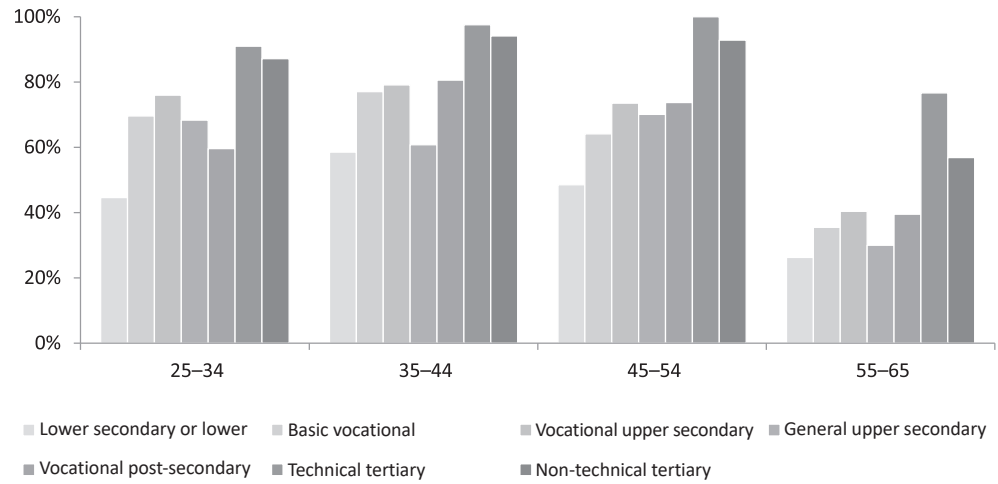

Figure 7. Employment rate by age groups and level of education in Poland in 2012 (average).

Source: own study based on the *Survey on the structure of earnings* data (earnings) and PIAAC (employment).

skills. It is worth stressing that the gap in the employment rate between Poland and other EU states is to a large extent the result of the low employment rates of vocational school graduates. In Poland, graduates of vocational schools aged 25–34 are employed less frequently than those of a corresponding level of education in Germany (88% are employed), the UK (80%) or Finland (80%).

With similar employment rates, professional skills are a greater facilitator in finding a job than the knowledge acquired in general education schools. The unemployment rate in these groups among persons aged 25–34 was 9% and 14% respectively. Vocational upper secondary school graduates, combining general knowledge with professional skills, have virtually no difficulty finding a job – the unemployment rate in this group was 4% (Rynko, 2013, on the basis of PIAAC 2012 survey). The results of the 2014 Polish LFS survey confirmed this trend, although the differences were not so extreme. In the 25–34 age group, the unemployment rate was lowest among vocational upper secondary school graduates who passed the *matura* exam (9.5%), slightly higher among general upper secondary school students who passed the *matura* exam (11.1%), similar between vocational upper secondary school graduates who did not pass the *matura* and graduates of basic vocational schools (13.1% and 13.8%, respectively), and clearly the highest among graduates of general upper secondary schools who did not pass the *matura* exam (19.6%). In this age group, the employment rate was higher among vocational upper secondary school graduates (76%) than among graduates of general upper secondary schools (68%) and basic vocational schools (70%).

However, a high employment rate among persons with vocational training does not mean full success in the labour market. Basic vocational school graduates earn less than graduates of vocational upper secondary school and general upper secondary school (Figure 8). The lack of appropriate general skills does not allow them to secure better paid jobs. The premium in remuneration relating to graduation from higher education has been dropping in Poland in recent years, but even among 25–34-year-olds, it exceeds 30%. This is also the consequence of the over-representation of farmers among people who graduate from vocational schools. Nearly 15% of them start work in low-production farming, while in other groups of education, this career path is followed

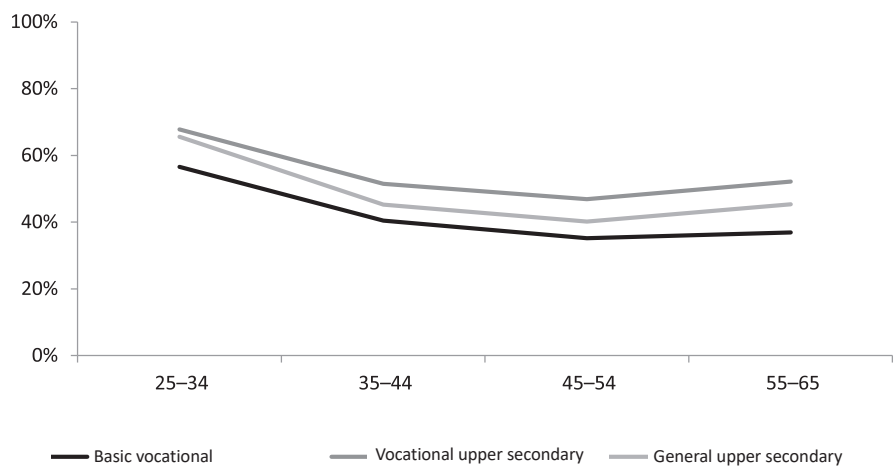

Figure 8. Remuneration in relation to the wages of university graduates by age groups and level of education in Poland in 2012 (median).

Source: own study based on the *Survey on the structure of earnings* data (earnings) and PIAAC (employment).

by no more than 5% of persons (based on PIAAC data, group aged 25–34 years). Despite the significant criticism of the quality of general education, even general upper secondary school graduates who have not completed higher education are working almost as often as vocational schools graduates and earn more. Compared to secondary school graduates, the situation of university graduates in the labour market is in all respects better, despite the general opinion that the level of university education is deteriorating.

Causes of the crisis in the quality of vocational education

Due to the educational boom, vocational education has been affected by many negative phenomena. First, persons who score better on exams more often chose general or vocational upper secondary schools. Second, students and graduates of vocational schools were also – often unfairly – perceived as less educated. This type of school has become stigmatised, leading to a negative feedback loop. The identity of students from basic vocational schools was anchored to the negative image of a manual worker, and not a professional (Szafraniec, 2011). Finally, high unemployment rates and low employment rates among basic vocational school graduates were the result of the mismatch between the types of vocations taught and the needs of local labour markets.

This last problem in vocational training is due to the fact that the offer of these schools is based on their available resources, including the staff they have at their disposal. A career path in vocational education is not an attractive one, especially for teachers of professions which are in demand on the market. For this reason, vocational education is missing staff, especially teachers of professions sought in the labour market. Those who actually work in vocational education are often older than teachers of general subjects. The existing staff is very committed to working with youth and is highly qualified, but finding new teachers is a growing problem – 67% of counties in Poland have trouble finding teachers for vocational schools (Goźlińska and Kruszewski, 2013). Teachers are ageing and those retiring are replaced by teachers with lower competences. School directors indicate that it is difficult to attract better qualified persons due to low salaries (Goźlińska and Kruszewski, 2013).

However, statistical data do not confirm significant differences in wages between industry and education. In 2012, the average gross salary of vocational education teachers was about 4000 PLN and, for instance, telecommunications technicians earned almost 4800 PLN (GUS, 2014)[1]. Of course it should be remembered that the differences may be higher for persons who are just starting their careers. Despite being highly motivated to work with youth, teachers rarely improve their qualifications – a significant proportion of them have not attained a minimum level of knowledge and skills relating to new technologies (Goźlińska and Kruszewski, 2013).

Another factor that hampers the provision of a high level of vocational training is the insufficient equipment of schools. No mechanisms exist encouraging employers to transfer modern technologies to schools. In 2010, only every fifth school in Poland cooperated with employers in order to improve the relevance of the skills taught (Goźlińska and Kruszewski, 2013). Even more worrying is the fact that entrepreneurs assess the skills of graduates as too

[1] The average salary for professional groups is provided. Note that IT technicians are clearly younger than vocational education teachers (respectively 36 and 44 years of age), and consequently have, on average, five years' less professional experience. However, the difference between the average earnings in these groups is similar, about 500--600 PLN, both among younger workers (< 35 years) as well as in the older group (> 35 years).

theoretical, detached from practical applications and new technologies. Only 2/3 of schools declare to have classrooms where practical training can be conducted, and over 1/4 of students believe that the quality of equipment in school workshops is low (Goźlińska and Kruszewski, 2013). Additionally, the labour market changes faster than the educational offer and the available equipment: it takes a minimum of two years to introduce a new profession to the curriculum if there are no difficulties in recruiting staff and obtaining the relevant infrastructure (Szafraniec, 2011).

Discussion

Increase in general skills among vocational schools students

The current main challenge of Polish education is to provide all students with the minimum foundation skills that are the starting point for developing other competences (Boroch et al., 2007). This task is at least as important as the better adaptation of vocational training to the structure of the labour market. The improving position of Poland in studies of the skills of fifteen-year-olds carried out in OECD countries (PISA) shows that such effects have been achieved at the level of primary and lower secondary schools (OECD, 2013). On the other hand, the difficulties in coping with the labour market indicate that problems exist at the level of secondary schools, vocational schools and higher education. It is worth emphasising again that the problem is not the decreasing number of students of vocational schools, but the low quality of the education in schools, both in terms of vocational training and general education.

A strong argument for focusing on improving the quality of training in general skills is the need to attain and supplement qualifications in later stages of working life. Without an appropriate level of key competences and the habit of lifelong learning, adapting to changes will be impossible. The ability to retrain is particularly important in view of the changes in Poland's demographic structure, globalisation and the presence of information and communication technologies. These phenomena will lead to changes in the structure of the demand for work in terms of the professions, skills and working methods.

The results of the PIAAC survey indicate that vocational and general upper secondary schools are performing significantly better than the basic vocational schools in delivering general skills, and at least as well with the professional activation of students. In addition, vocational upper secondary schools have a greater potential for students to mutually motivate each other. Therefore, returning to having a greater proportion of basic vocational schools in the education system is not justified, especially at the expense of vocational upper secondary schools. A better idea would be to develop vocational upper secondary schools, which exhibit considerable potential. On the other hand, basic vocational schools require changes that will increase the quality of vocational training. Possible solutions in this area will be presented on the following pages.

Development of vocational internships

The problem of Polish vocational schools lies in their poor adaptation to the situation in the labour market. The educational offer is determined mainly by practical and organisational aspects, such as the availability of technical equipment, qualified teachers and the costs of preparing workshops. For this reason, most students of basic vocational schools graduate from food service and mechanical engineering schools, and the least number of graduates are from chemical, ceramic, glassworking and mining vocational schools. The supply of graduates of the most popular vocational schools exceeds

the demand, therefore the graduates from the most popular fields face the risk of high unemployment (Goźlińska and Kruszewski, 2013). Even more, internships in businesses are most often available to students of tourism and accommodation services, transport and warehousing, as well as farming and animal breeding. On the other hand, students of industrial professions, such as construction, road building or mechanics, most often conduct their practical training at school (Goźlińska and Kruszewski, 2013).

There are two possible solutions to the problems of the lack of personnel and infrastructure. First, with secured funding, it is possible to increase expenditures for infrastructure and the employment of teachers of professional subjects by trying to compete with the private market for employees, as well as for the equipment used in manufacturing plants. Alternatively, cooperation could be developed by schools with companies and the teaching of occupations could be moved to businesses. Although the second solution seems to be more effective and allows for a smooth transition from internships and traineeships to employment, deficits on the side of businesses may be a barrier to overcome. Very few of them today exhibit a readiness to open their doors more widely to training employees, and there are no large companies that could hire new graduates on a regular basis. Furthermore, employers have not shown any tendency to commit to vocational training to date, also for financial reasons.

Limitations of the dual system

Transferring the practical training of a profession from vocational education schools to companies is part of the dual system. In the public debate, the introduction and popularisation of the dual system of vocational training modelled after the German system is often postulated as a way to improve the match between the skills of graduates of this type of school to the needs of the labour market. The dual system has several components, here we focus on its impact on shaping foundation skills.

The German dual system differs significantly from the solutions adopted by most EU countries. Due to the fact that it is very effective in the labour market, it is proposed as an antidote to the post-crisis increase of unemployment rates, particularly among young people in various European countries. This is confirmed by the fact that in 2012, the unemployment rate among young (25–34 years) graduates of vocational training in Germany was only 6%, but one has to remember that the unemployment rate of this age group in Germany was already low (5.5%). The effectiveness of the dual system is also reflected by its popularity among young Germans: in 2012, 47% of 25–34-year-olds had completed vocational secondary education, while 41% completed higher education (PIAAC).

Students in the German system choose between vocational training and general education a year earlier than in Poland – at the age of 15[2]. Persons deciding on vocational training have two tracks to choose from – secondary vocational school or the dual system. The first option is similar in profile to Poland's vocational upper secondary schools or basic vocational schools. While studying at a school from the age of 15/16 to the age of 18, students attain both theoretical knowledge and practical skills. In the dual system, theory is taught at school for approximately one-third of the time and students spend the rest of the week learning practical skills in

[2] In brief, the German education system consists of the following stages: primary school (6–10 years), 1st level secondary school (10–15/16 years; analogous to the Polish lower secondary school), vocational school (15–18/19 years; dual system or profiled secondary school), 2nd level secondary school (15–19 years; Polish upper secondary school). It is then possible to continue education at a higher level (Kwiatkiewicz, 2006).

enterprises. Apprentices receive a salary for their work and they become part of the employee structure of the companies. They can choose training in more than 300 professions and after obtaining a vocational secondary education, they can continue their education at a higher level (Kwiatkiewicz, 2006; Szafraniec, 2011).

In Poland, the introduction of a dual system of vocational training similar to the German model would be difficult and would not necessarily result in a drop in the unemployment rate among young people to the levels presently in the German economy. First, the employment structure in Poland is very different than that in Germany. Young people in Germany who have completed vocational education most often (50%) work in non-public services (middle-level health staff, secretarial staff, administrative staff). In Poland, a similar percentage (53%) of persons with such an educational background work in industry (construction workers, vehicle operators, industry workers). The different structure of employment by size of enterprises could also be a problem. In Poland, people having completed vocational education who work in industry are most often employed in small (11–50 employees; 33%) or medium-sized businesses (51–250 employees; 25%) and in Germany – in medium-sized (31%) and large companies (above 250 employees; 31%; PIAAC data). The dual system requires the existence of companies with an appropriate structure, above all, the presence of large companies (in which the integration of the time spent with apprentices having work responsibilities is easier organisationally than in a small business) and a sufficiently high level of cooperation between the companies themselves, schools and representatives of employees. Due to these features, the dual system is difficult to implement in other communities, particularly in Poland, where small businesses are more important to industry and the model of labour relations and collective bargaining is less cooperative and coordinated (cf. ICTWSS data).

In addition, the dual system is criticised for hindering the ability of students to change their educational decisions, narrow specialisations and failing to provide a sufficient level of general skills. In view of the rapidly changing demand for work and the need to retrain several times during working life, adopting the German model may lead to only a temporary reduction of unemployment, while in the perspective of 10–30 years, it may result in problems for a large part of graduates in their attempts to cope with the labour market. The development of the vocational education system requires that the problems described above within vocational schools be solved first.

In Poland, it is already possible to have internships in companies, but students rarely succeed in finding a placement in industrial facilities; this task is easier in the case of farms. What is more, a large part of traineeship costs in Germany are borne by the companies, whereas in Poland, it will be difficult to convince businesses to accept this type of solution.

Introducing elements of the dual system in Poland could improve the quality of vocational education, however it will not be able to include too many students. What is important, such a solution will not be possible due to the fact that the business sector is not ready for it, and it will not be attractive due to the premature and excessive specialisation of workers. Even in Germany, students are having difficulties in finding attractive traineeships in companies. Therefore, in Poland, with the absence of appropriate incentives for companies, attempts to introduce the German system would certainly fail. At the same time, implementing elements of such a system will require a focus on the general quality of education in schools.

Increase financial expenditures for vocational training

Two of the most important conclusions from research on education systems (regardless of the level) require a high level of prudence in formulating expectations about the possibilities of rapidly reforming vocational training. First, there is no simple translation of financial expenditures to results. According to some researchers, financial expenditures are not relevant to education (Coleman and others 1966; Hanushek, 1986). According to other studies, they are not considered to be the most crucial factor in increasing the quality of education (Baker, 2012; Beese and Liang, 2010; OECD, 2013). The mere improvement of the infrastructure or increasing the salaries of teachers will not affect the quality of teaching. Financial resources are needed to carry out well-designed changes to the system, but increasing expenditures in isolation from a precise action plan will not produce the desired effects. Financial expenditures should therefore be treated as a means to make changes, and not as a miraculous tool that will automatically help resolve problems.

Second, the quality and motivation of teachers and peer pressure are key factors for student results at school (Hanushek, Cain, Markman and Rivkin, 2003; Hanushek, Rivkin and Cain, 2005; Zimmermann, 2003). Due the strong mechanism of negative selection, efforts to bring weaker students up to the level of better students in basic vocational schools is less effective than doing so in vocational upper secondary schools. The efforts of both teachers and headmasters in this respect can produce positive results. Attracting young teachers of professions from developing sectors requires financial expenditures and organisational changes, as well as incentive schemes in schools. Without these components, it will be difficult to better adapt the competences of graduates to the needs of the national and local labour markets.

Summary

In the last twenty years, vocational education in Poland has undergone significant changes. The greatest developments affected basic vocational schools, the popularity of which declined almost threefold. At the same time, vocational upper secondary schools have maintained their popularity. This coincided with the escalation of internal problems in the vocational education system relating to the negative selection of weaker students, the stigmatisation of students and graduates of vocational schools, and the much slower technological development of these schools in relation to the private sector. These negative phenomena affected vocational upper secondary schools and basic vocational schools located in large urban centres to a lesser extent. The strong focus of a substantial number of vocational schools on farming raises concerns. The consequence of such profiling of vocational education (especially basic vocational training) is the low level of general skills of graduates compared to graduates of other types of schools, graduates of vocational schools from other countries, and an unsatisfactory level of their employment rates.

Changes in vocational education must take into account the improvement of the quality of foundation skills training. Improvement of the quality of only occupational skills will not facilitate the ability of graduates to adapt to a changing labour market, either now or in the future. An increase in spending provides resources to modernise the technology used in teaching in vocational schools and adapt to the reality of the labour market. In parallel, a greater opening of the private sector to investing in young employees, also by offering traineeships, will allow funds to be better allocated. Ensuring the generational replacement of vocational school teachers requires, on one hand, increasing the financial attractiveness of this

career path, and on the other hand, removing formal obstacles and adopting a more flexible approach to facilitate the involvement of company employees in conducting practical classes in vocational schools.

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This article has been written within the project "Jobs and development network" implemented by the Institute for Structural Research and co-financed by the World Bank. A preliminary version of this article was published in Polish in *Edukacja*, *136*(1), 2016.