

Bianka Godlewska-Dzioboń *

UNEMPLOYMENT AMONG UNIVERSITY GRADUATES AND THE STRUCTURE OF EDUCATION IN POLAND AT THE TERTIARY LEVEL

Abstract

The purpose of this article is to bring into light the changes in the patterns of unemployment among university graduates in the Malopolska region over the period 2007-2011 against a background of changes in the structure of education in Poland. To perform a comparative analysis of changes in the pattern of unemployment among graduates, the Malopolska region was selected because, according to GUS data, this region is one of the largest academic centers in Poland. This article will at a later time present the main issues relating to tertiary education in light of challenges posed by the Polish labor market. Subsequently the method of analysis will also be discussed as will the dynamics and structure of higher education at levels currently existing in Poland. Following that will be an assessment of changes in the patterns of unemployment among university graduates in the region. The last part of the article presents the main conclusions formulated on the basis of theoretical and empirical analyzes outlined throughout this article.

Key words: tertiary education, fields of study, unemployment, graduates, graduate studies, market needs, Poland.

1. Introduction

Over the last few months, a debate has been raging over the quality of tertiary education in Poland. It is somewhat surprising, taking into account that this topic has been seen as a particularly important point of interest in Poland's transformation as well as an important element to improving its human capital. It is also worth pointing out that the development of tertiary education in Poland has been a kind of insurance policy for growing unemployment in the new economic realities of Poland. From the beginning, a belief has dominated that tertiary education is a safety measure against

* MA, PH.D student of Cracow University of Economics.

professional inactivity and, in fact, may even provide the opportunity to land a good job and thus a relatively higher income and overall intellectual development.

Many skeptics already predicted earlier that a "crisis" in Polish tertiary education is inevitable due to several key factors: an increase in the number of people with degrees, the dissemination of tertiary education – it's no longer simply a privilege reserved for the elite, the deteriorating situation in the Polish labor market and a decreasing ability of the workforce to absorb university graduates, more liberal requirements for admission into many fields of study, and low public funding of higher education.

These factors have meant that now, more twenty years since the introduction of a market economy in Poland, the quality of education at the tertiary level has significantly diminished. In addition, graduates find themselves choosing employment subject to the requirements of the labor market, while the private sector refuses to take up the challenge of building schools of higher learning with curriculums based on the quality of education. Alternatively a widely proposed liberalization of requirements for admission to studies, a broadening in the choice of part-time studies, as well as reduced demands on students by universities has meant that graduates no longer possess qualifications generally demanded by employers. Attempts to translate to the general public that the market will solve all its own problems have been misguided, and today's results are a major concern for policymakers in the current model of tertiary education in Poland.

The purpose of this article is to bring into light the changes in the patterns of unemployment among university graduates in the Malopolska region over the period 2007-2011 against a background of changes in the structure of education in Poland. To perform a comparative analysis of changes in the pattern of unemployment among graduates, the Malopolska region was selected because, according to GUS data, this region is one of the largest academic centers in Poland.

Taking this into account, this article will at a later time present the main issues relating to tertiary education in light of challenges posed by the Polish labor market. Subsequently the method of analysis will also be discussed as will the dynamics and structure of higher education at levels currently existing in Poland. Following that will be an assessment of changes in the patterns of unemployment among university graduates in the region. The last part of the article presents the main conclusions formulated on the basis of theoretical and empirical analyzes outlined throughout this article.

Education at the tertiary level and the challenges of the Polish labor market - a theoretical discourse

Educational policy is today considered one of the most important elements of economic policy in Poland [Musialik 2009, s. 451]. This allows for the realization of many economic goals, in particular the efficient allocation of resources, social justice and the leveling of social inequalities [Levin, Driver 1994; Dąbrowa-Szefler, Jabłecka-Prysłowska 2006 i 2007]. In Poland, both in academic and political circles, there exists an awareness of the interrelationship between education and economic policy [Buchner-Jeziorska 1996]. The development of higher education is a prerequisite leading to the rapid increase in the percentage of highly qualified personnel present in the economy. There is a clear relationship between the number of graduates possessing degrees and the dynamics of economic growth [Romer 1990, 2005, s.251-286; Gyimah-Brempong i in. 2006, s. 509-529]. In addition, consideration should be given to the relationship which exists between a labor force lacking adequate qualifications and structural unemployment. It is worth mentioning also that tertiary education should be tailored to current and future needs of the economy and in particular the labor market. According to experts, the OECD, over the previous two decades in Poland has focused too heavily on the dissemination of higher education, while brushing aside many important issues for future consideration [OECD 2008]. Worth noting from among these are such issues as: maintaining a certain degree of autonomy in an institution, while upholding a rational level of diversification, as well as developing close ties with local labor markets [Diagnoza...2009, s.15].

The last issue in particular seems to have brought severe consequences for Poland, having very much begun to reveal itself over recent years when the popularity of possessing a university degree first began to spread. For this reason, experienced managers, university professors and business people began to form rather negative opinions; the general message being that Polish institutes of higher education are simply factories turning out unequipped workers in search of employment. In such a case the fundamental question arises. Is education at the tertiary level in such a bad state in relation to the challenges of the modern labor market in Poland and what changes are taking place in this area?

To begin, it is worth looking at this issue from an international perspective, as the problems that have characterized the Polish system of higher education, are partly related to the diagnosed dangers faced in foreign education systems. D. Antonowicz of the Nicolaus Copernicus University in Torun, notes that the issue of a crisis in tertiary education has appeared many times previously since the beginning of the twentieth century. Generally the pauperisation of tertiary

education (O. Gasset) is an old topic, and even the U.S. education system has been the subject of criticism (Alan Bloom), while universities have been said to be in ruins (Bill Readings). Also, recently many people in the UK have spoken out negatively, claiming that millions of secondary school and college graduates are unqualified to work. According to the UK business environment they are unable to perform even the simplest of tasks, from reading and writing to making presentations or communicating. The problem of overproduction of graduates with degrees has also affected China. Chinese experts estimate that the blame for this problem can be found within the global financial crisis, but also in the multitudes possessing worthless diplomas. In the 90s only one in every twenty Chinese high school graduates continued on to study at college or university. However by the end of the previous decade thousands of new universities had opened and today every fourth high school graduate continues his or her education. When China's growing economy found itself starved of engineers in the early 80s, the height of the baby boom arrived and so these needs were quickly met. Presently the economy cannot absorb the large numbers of fresh graduates entering the job market. Hence rising unemployment among the ranks of Chinese university graduates is visible.

The fact that the situation in Polish universities has also become critical has been the subject of discussion ever since the beginning of the social-political transformation following 1989. In recent months the debate over the future of Polish higher education has gained momentum and sparked a broad debate among universities, businesses and government representatives. For example, PZU President, Andrzej Klesyk, - in the "Gazeta Wyborcza" newspaper - accused Polish universities of producing a generation of unemployed. Subsequently Prof. Jan Stanek of Cracow's Jagiellonian University wrote: "... You have been deceived not only by the teachers, but by the lecturers also. They, or at least many of them, unjustifiably issued you certificates, passed you on examinations and awarded you degrees - sometimes even several. Then, in an effort to please you, the politicians made you and your parents believe, that having a degree was the equivalent of possessing appropriate knowledge and skills". Professor Ewa Nawrocka of the University of Gdansk also addressed this issue fairly critically. She pointed out that the fault lies with the university, faculty, and the students themselves. In her view, there has been a decline in ethics among academics, an overpowering tendency toward conformism, and the pursuit for the acquisition of wealth. Students appear to be arrogant, not interested in studies, intellectually lazy and passive. All these and many other opinions sought to discredit higher education in Poland.

In light of these negative views many voices were heard in defense of the current state, alleging such pessimistic assessments were unreliable and claiming that all these extreme and adverse consequences have been offset by

those favorable to the situation in the Polish economy. However, it seems that the truth is somewhere in between. It must be remembered that according to basic economic laws, the emergence of an increasing number of private universities offering the same courses as at other universities, often with different profiles, will result in a diminishing in value of any degree obtained as it becomes virtually available to any person undertaking studies. Furthermore, possession of such a diploma is no longer a rarity nor a sign of elitism. Additionally puzzling in all this is the fact that in large part certain "independents" from an academic sense have begun to speak out; that is, people who are of retirement age with professorial titles. Apparently there is a lack of self-assessment from the likes of rectors, vice-rectors, deans and clinical directors, institutes and other departments constituting much of the academic environment, and who clearly do not share these negative views at all. It can be assumed that most people working at the higher education level are stuck in the current system and do not want to speak out in case they might be misunderstood by the academic community. On top of this, academic staff's salaries are often made mention of, although no one pays attention to the fact that wages are more often in the lower range rather than in the higher. According to the Ernst & Young Report the major barrier to the proper development of academics in Poland is the pay system based on the low-end wage scale, and whose rate for younger staff members fails to guarantee an acceptable standard of living [Diagnoza..., s.7]. Another obstacle is that the teaching staff is paid according to the number of diplomas awarded, and not the quality of knowledge taught or the number of research projects completed. One example of an effort to improve a similar situation was an attempt to eliminate corruption and other pathologies among court judges by increasing their wages, so that they would be motivated and guided strictly by ethics to perform their duties in accordance with the law. Also the level of funding for tertiary education and academic research clearly deviates unfavorably from funding models in other countries, which have a better standard and higher efficiency rate in their educational systems.

We must also remember that in any organization and community there will always be extreme cases that may obscure the very real picture. One cannot help but say that the dynamically changing world also drives higher education to alter and adapt to a changing society and economy, economic liberalization, and to adapt to advancements in modern information and communication technologies. Tertiary education should no longer be a "temple of the theory," but more a center of knowledge creation sensitive to the needs of the economy. Therefore, it is necessary to change the role of both teacher and students. Today's world is no place for intellectual and casual deliberation at universities. Students must afford the desire to acquire the knowledge and skills that will enable them to find fulfilling employment in the future.

From among all the accusations, most puzzling is the fact that Polish universities do not prepare students for the challenges ahead that they will have to face with future employers. It is therefore worth conducting a multilateral discussion on this subject with the aim of developing models to improve this aspect of tertiary education. One has to accept the fact that in today's economy the determining factors to a large extent, when it comes to the attractiveness of graduates in the labor market, are their so-called social competence and moral standards, such as the ability to work independently and cope with stress or conflict, the willingness to continue the learning process, flexibility in thinking, the ability to communicate, self-presentation and assertiveness. Institutes of higher education still contribute minimally in the development of critically vital skills for independent thinking, teamwork, decision making or filing of information, not to mention practical and social skills. There is still too large a gap between higher learning and the wider scope of the business world. The chances of graduates landing decent jobs would increase substantially as a result of closer collaboration between schools and businesses. In practice, this requires the involvement of industry representatives in the classroom and under their direction the formulation of topics for writing their thesis. Furthermore it requires the development of co-op work programs or internships, and even the implementation of joint research projects. The key element in all this seems to be establishing a model for checking the quality of education with regard to incorporated practical elements as well as a more stringent approach in granting degrees that will ultimately be the culmination of studies even in the absence of practical skills.

The opinion that not everyone is suited for college or university is also one that cannot be dismissed. Such an approach would lead to the selection of the most appropriate candidates in any given field of study. On the one hand this process would be characterized by students possessing the ability for a rapid assimilation of theoretical and practical knowledge, and thus would be more easily absorbed into the market. An example of this occurs in medical studies, where the selection process is the important initial phase in a student's education. Alumni generally do not face any obstacles in finding job placements, and often do their internships at universities, where graduates in other fields of study - often recruited beyond the realm of any inhibiting selection process - have difficulty finding employment. Quite often mention is made of elite studies at Harvard and Oxford Universities. However one must remember that authorities at these universities place the utmost priority on obtaining students achieving the highest grades in their secondary education.

It is certainly no secret that the market economy of higher education - especially that at a relatively low level - has become a very profitable venture. Unfortunately, this line of thought favors the recent reforms of the so-called

“Matura” final examinations, which have neither increased the number of outstanding candidates for further studies, nor have they proved an effective criterion for selecting the best candidates. Certainly universities with more demanding requirements would function better if they found themselves in a small and elite community. Yet such a way of thinking in the modern era of mass education is not acceptable in the current marketplace.

In light of evidence that education in Poland varies considerably, it would be worth pondering the idea of introducing central theoretical and practical final examinations. These would become the ultimate rung in the selection and verification process for ensuring that a graduate in any particular field possesses the theoretical knowledge, practical skills and moral attitudes anticipated by his program of study. Along this line of thinking we should not overlook the vital role that industry representatives must play in taking responsibility for the stringent examination of students and their mastery of practical skills in their particular field of study, enabling only those persons who have properly mastered the practical program of study to receive a Bachelor or Masters Degree. It is worth emphasizing that the State Accreditation Commission should take greater responsibility in this matter. The process of student evaluation should not occur on the basis of friendly relations, but should focus on eliminating those who simply go through the motions of learning. Graduates who only pretend to learn do not finished studies properly prepared for the requirements of the labor market and prospective employers.

Generally one should take notice particularly in tertiary education that after years of benefiting from an educational boom which has popularized higher education and has reduced the backlog in programs for Polish citizens in comparison with OECD countries, it is time to evaluate not only higher education, but the whole model of education in Poland. Poland has the highest percentage in Europe of youths who, after graduating from secondary school continue their education. The large scale of this phenomenon, however, means that graduates complete their education at varying potential levels, and that tertiary education is no longer a privilege reserved solely for the elite. Higher education alone is not enough to ensure success in the labor market. As suggested by the European Commission, there exists a need to create a new model of higher education, whereas universities themselves should take a more active part in the whole process than up to now, supporting changes towards better leadership, management and entrepreneurship, rather than just academic freedom and internal democracy. Universities should have autonomy, while at the same time being liable to greater accountability to stakeholders [Diagnoza..., s. 17]. However, one must keep in mind that the chances of finding work for graduates is a combination of several factors, and certainly can't be reduced solely to the model of higher education. These factors include: the level

of education, the field of study, the quality of education, the quality and way an internship is served, the state of the local labor market, an individual graduate's potential in terms of intellectual, communicative and personality traits.

2. Method of research

This article makes reference to data concerning the number of graduates between the years 2000-2011 in Poland covering 22 fields of study: Teaching, Humanities, Social Science, Arts, Journalism and Information Technology, Physics, Mathematics and Statistics, Computing, Engineering and Technology, Architecture and Construction, Economics and Administration, Human Services, Public Transport, Security, Law, Medicine, Biology, Agriculture, Forestry and Fisheries, Veterinary Medicine, Environmental Protection, Production and Processing. These fields have been divided into six groups:

- a) Group I - Humanities (Teaching, Humanities, Social Services);
- b) Group II – the Arts (Arts, Journalism and Information Technology);
- c) Group III - Sciences (Physics, Mathematics and Statistics, Computing, Engineering and Technology, Architecture and Construction);
- d) Group IV - Economics and Law (Economics and Administration, Human Services, Public Transport, Environmental Protection and Security, Law);
- e) Group V - Medicine (medicine, biology);
- f) Group VI - Agriculture (Agriculture, Forestry and Fisheries, Veterinary Medicine, Environmental Protection, Production and Processing).

Data used relating to numbers of graduates in these fields of study have been taken from the Statistical Logbooks of GUS.

In addition, reference has been made to information obtained from the Regional Labour Office in Cracow concerning numbers of unemployed university graduates completing various fields of study between the years 2007-2011 and currently employed.

Data concerning both enrollment numbers at higher education institutes in Poland and unemployment figures among university graduates in the Malopolska region has enabled an accurate calculation of the coefficients for respective patterns, and the structure of education in Poland according to fields of study in each year from 2000 to 2011 allowing for variations in patterns of unemployment among university graduates in their particular fields of study between the years 2007-2011. Also estimated have been the highest rate of increase in enrollment numbers in the particular fields of study and in which the figure was relatively stable. Similarly, efforts have been made to analyze the dynamics of changes in patterns of unemployment. Comparisons were made for the years 2007-2011, because data for this period were readily available for the Malopolska region.

The structure of education has been analyzed starting from the year 2000 as this allowed us to show trends in these patterns in Poland.

The decision to compare changes in unemployment trends of graduates in the Malopolska region against the background of national transformations within the various fields of study has been intentional as the Malopolska region, following Warsaw, is one of the largest academic centers in Poland. With its 23 universities enrollment figures in Malopolska reach over 200,000 - with nearly 50,000 graduating each year - giving it second place in all of Poland (after Warsaw). The time frame for analysis was selected due to the availability of statistical data used, while making possible the presentation of changes of unemployment trends among graduates in the labor market over a period, when an overall deterioration in the labor market existed as a result of the crisis in world financial markets.

3. Dynamics and structure of tertiary education in Poland

In 2009 in Poland 461 institutes of higher learning were functioning (including schools connected with the Ministry of Defense, Internal Affairs and Administration). A total of 1,266,900 students (66.7% of all students) were attending 131 public schools, including 324,000 in their first year of study. Compared with 2008 enrollment numbers at these schools decreased by 0.1%. A large part of tertiary education comes from the private sector, which has been developing since 1991. In 2009, there were 330 such schools with an enrollment of 633,100 students (or 33.3% of all students), including 163,700 in their first year of study. Compared with 2008, a 1.5% increase of non-public institutes followed, while enrollment at such schools fell by 4.0%. In 2009, a total of approximately 1.9 million people were enrolled in Poland; an increase of about 0.3 million compared with the year 2000, and a decrease of approximately 0.05 million compared to 2005. At the same time the number of graduates has been increasing systematically. In 2009 there were 0.44 million graduates; an increase of approximately 140,000 compared to the year 2000 and about 50,000 compared to the year 2005 (Table 1).

Table 1. Data concerning higher education in Poland during 2000-2009

Specifications	Dates		
	2000	2005	2009
Number of tertiary education institutes in Poland	310	445	461
Enrollment figures in Poland (millions)	1,58	1,95	1,90
Number of graduates in Poland (thousand)	304	391	440

Source: independent study based on Notatka na temat szkół wyższych w Polsce, GUS, Warsaw 2010, October 26, p.1

The proportion of highly educated people in Poland increased from approximately 10% in 1997 to about 20% in 2010. At the same time, the number of students completing tertiary education in OECD countries increased from about 20% to about 27%. As a result, the difference separating Poland from OECD countries, in terms of the percentage of people completing degrees, has declined from more than 10% to around 8%. Thus, the process of promoting higher education is not only a characteristic of Poland alone, but also applies to all highly developed countries. Despite such a significant increase in the number of graduates possessing degrees in Poland, it is still a few percentage points behind in terms of schooling compared with the average level for all OECD countries.

In recent years, schools have been plagued by a declining interest in Humanistic, Economic, Social Services and Information Technology studies, while fields such as National Defense and Security and health related studies such as Social Services as well as Architecture and Construction have become more popular. Despite this, the dominant group still remains the group consisting of Teaching, Humanities and Social Services (37.6% in 2010), followed by the group consisting of Economic, Administrative, Law and Security studies (32.3% in 2010). Much less popular are the Sciences (12.9% in 2010) (Table 2).

Table 2. The proportion of graduates from various fields of study in Polish universities divided into six groups during the period 2000-2010 (%)

Group	Fields of Study	Date		
		2000	2005	2010
I – Humanities	Teaching, Humanities, Social Services			
II – the Arts	Arts, Journalism, Information Technology	39,2	37,4	37,6
III – Sciences	Physics, Mathematics and Statistics, Computing, Engineering, Architecture and Construction	1,3	1,7	2,4
IV – Economics and Law	Economics and Administration, Human Services, Public Transport Services, Law and Security	12,0	13,6	12,9
V – Medicine	Medicine, Biology	37,7	37,5	32,3
VI – Agriculture	Agriculture, Forestry and Fisheries, Veterinary Medicine, Environmental Protection, Production and Processing	6,1	4,0	5,6

Source: independent study based on data from Central Statistical Office in Warsaw.

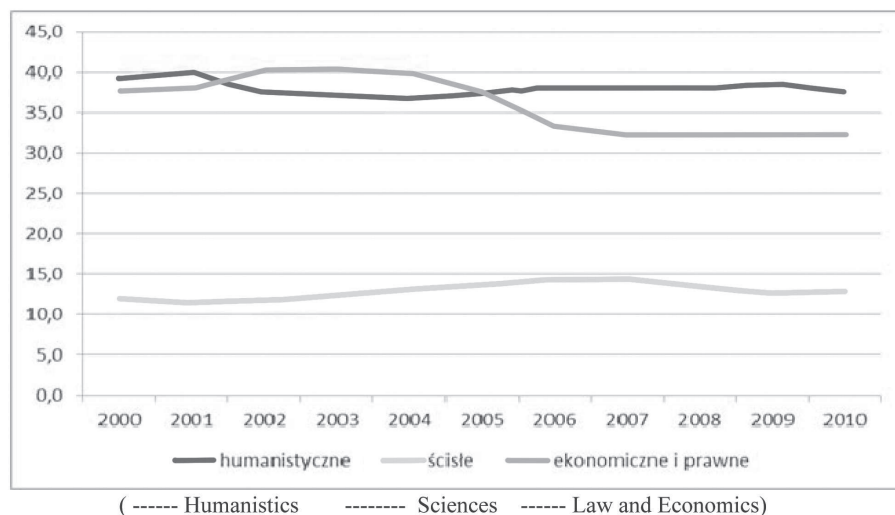


Figure 1. The proportion of university graduates divided into three groups: Humanities, Sciences, Law and Economics in Poland during 2000-2010 (%) [Source: independent study based on data from Central Statistical Office in Warsaw].

As shown in Figure 1 the proportion of graduates completing Humanistic studies now dominates, while in the period 2000-2010 this number varied between 35-40%. In turn, the number enrolled in Economic studies can be seen to peak during 2002-2004 (about 40%), followed by a marked reduction in the number of graduates by a few percentage points (Figure 1). A decline in the proportion of graduates in Economics from 40% (2004) to around 32% (2010) may be a response to increasing difficulties in finding jobs for graduates in these fields. Striking, however, is the continuing large proportion of graduates in Teaching, Humanities and Social Services despite obvious difficulties in the labor market. This trend is undoubtedly due to the relatively ease of courses implemented into these programs of study which, however more descriptive, are less formal in nature.

4. The pattern of unemployment among university graduates - an example: the Malopolska region

Utilizing data related to unemployment figures registered by the Regional Labour Office in Cracow, Tables 3-5 provide a summary of comparative information on unemployment figures among university graduates and their pattern according to fields of study during 2007-2011.

Table 3. Unemployment figures among university graduates in the Malopolska region during the period 2007-2011

Groups fields of Study	Fields of Study	Date				
		2007	2008	2009	2010	2011
GROUP I	Teaching, Humanities, Social Services	2477	2577	3472	4273	4625
GROUP II	Arts, Journalism, Information Technology	211	198	233	346	331
GROUP III	Physics, Mathematics and Statistics, Computing, Engineering Architecture and Construction	1153	1172	1900	3235	1995
GROUP IV	Economics and Administration, Human Services, Public Transport Services, Law and Security	3239	3457	4753	4393	5780
GROUP V	Medicine, Biology	900	922	1116	1275	1330
GROUP VI	<i>Agriculture, Forestry and Fisheries, Veterinary Medicine, Environmental Protection, Production and Process http://www.jallc.nato.int/activities/jpa.asp (date of access: 09 June 2012). izng</i>	837	889	1162	1261	1198
TOTALS		8817	9215	12636	14783	15259

Source: independent study based on data from the Regional Labour Office in Cracow.

Table 3 shows unemployment figure among university graduates in the Malopolska region during the years 2007-2011. These data suggest that during 2007-2011 the total figure in the Malopolska region increased from nearly 9000 to over 15,000. This represents an increase of more than 70% over four years (Table 4). Thus, this result should be regarded as a negative phenomenon and disturbing at the same time, even taking into account that the Malopolska region is the second largest academic center in Poland.

Under more scrupulous consideration it becomes evident that most of the unemployed officially registered have completed their education in fields in group IV; a group which includes Economics and Law. During

the years 2007-2011, unemployment figures increased from about 3,200 to nearly 5,800, or in other words by nearly 80%. These data indicate that in the Malopolska region up to the present there has been a surplus of students enrolled in these particular fields of study. In terms of unemployment numbers among university graduates, those having completed degrees in the fields of Teaching, Humanities and Social Services make up second highest. Over the period 2007-2011 there was an increase of nearly 2,500 to more than 4,500 giving a growth rate during this period of nearly 90%. It may be said that currently fields of study in this group are characterized by a low absorption rate into the labor market even though there is a clear surplus of jobs available in this field. These data, therefore, suggest that the growth rate of unemployment in the field of Humanities is even higher than in the area of Economics and Law.

Table 4. Dynamics of changes in unemployment trends among university graduates in the Malopolska region during 2007-2011 (%)

Groups fields of Study	Fields of Study	Changes during 2007-2011
GROUP I	Teaching, Humanities, Social Services	86,7
GROUP II	Arts, Journalism, Information Technology	56,9
GROUP III	Physics, Mathematics and Statistics, Computing, Engineering, Architecture and Construction	73,0
GROUP IV	Economics and Administration, Human Services, Public Transport Services, Law and Security	78,5
GROUP V	Medicine, Biology	47,8
GROUP VI	Agriculture, Forestry and Fisheries, Veterinary Medicine Environmental Protection, Production and Processing,	43,1
TOTALS		73,1

Source: independent study based on data from the Regional Labour Office in Cracow.

Table 5. The pattern of unemployment in various fields of study in the Malopolska region during the period 2007-2011

Groups fields of Study	Fields of Study	Date				
		2007	2008	2009	2010	2011
GROUP I	Teaching, Humanities, Social Services	28,1	28,0	27,5	28,9	30,3

Groups fields of Study	Fields of Study	Date				
		2007	2008	2009	2010	2011
GROUP II	Arts, Journalism, Information Technology	2,4	2,1	1,8	2,3	2,2
GROUP III	Physics, Mathematics and Statistics, Computing, Engineering, Architecture and Construction	13,1	12,7	15,	21,9	13,1
GROUP IV	Economics and Administration, Human Services, Public Transport Services, Law and Security	36,7	37,5	37,6	29,7	37,9
GROUP V	Medicine, Biology	10,2	10,0	8,8	8,6	8,7
GROUP VI	Agriculture, Forestry and Fisheries, Veterinary Medicine, Environmental Protection, Production and Processing	9,5	9,6	9,2	8,5	7,9

Source: independent study based on data from the Regional Labour Office in Cracow.

Relatively speaking the most stable unemployment figures belonged to group VI (Agriculture) and group V (Medicine), which amounted to 1198 and 1330 individuals in 2011 respectively (Table 3). The increase in unemployment in terms of percentage in these groups during the years 2007 - 2011 was 43% and 48% respectively (Table 4).

Looking in turn at the pattern of unemployment among graduates, the larger portion consists of those completing Economic or Law studies (almost 38% in 2011) as well as those with degrees in Teaching, Humanities and Social Services (over 30% in 2011). In the case of graduates from both these groups together, there is a disturbing trend towards the greater portion of unemployed graduates within the total pattern coming from just these groups. On the other hand, in the period 2007-2011 a decreasing portion of unemployed graduates came from the groups consisting of Agriculture and Medicine. This decline amounted to anywhere from 9.5% to 7.9% and from 10.2% to 8.7% (Table 5).

Conclusions

A theoretical and empirical analysis brings our attention to several key issues.

1. Improving education at the level of graduate studies is certainly a process requiring several years and demands systematic change. The main aim of these changes should be to reduce the mismatch of curriculums to the needs of the economy. In this case, this means to bringing the business world and higher education closer together, thus producing a system of tertiary education tailor made to satisfy labor market requirements.

2. Monitoring market needs and enrollment numbers is a key element, as well as placing a greater emphasis on the selection process of candidates. In this regard, it seems advisable to implement measures for reducing enrollment in particular fields, including in those where there is an overproduction of graduates causing an increase in unemployment figures. This can be done, for example, by partially cutting excess funding certain courses both in public and private sectors.
3. After several years of relative calmness in higher education, the labor market has not met expectations and is unable to force universities into improving the quality and adapting their curriculums. In a certain sense, it seems that policy changes at the ministerial level would more likely bring about changes in the structure of higher education, and, thus, one more tailored to the needs of the labor market.
4. It seems necessary to refine the implementation of mandatory practical activities, which would be included in students' courses of study, particularly in their final year, and should be more rigorously tested primarily by teachers and employer representatives.
5. The probability of securing employment by graduates is a result of several factors, (it not only depends on higher education alone), which include: the level of education, field of study, the quality of education, the quality and method applied during an internship, the state the local labor market, intellectual potential, communicative skills and other personality traits of individual graduates.
6. The pattern of unemployment in the Malopolska region indicates there is a surplus of university graduates in the fields of Teaching, Humanities, Social Services and Economics and that figure is growing at an alarming rate. In 2011 they accounted for more than two thirds of the estimated 15 000 university graduates registered who remained unemployed. It seems that the situation in Malopolska is a response by regional labor markets to the situation which has developed in all fields of education in Poland. Graduates of these courses through the years 2000-2010 accounted for more than 70% of graduates from all fields concerned. It seems that growing unemployment in this group is an inevitable result of an overproduction of graduates. Yet, on the other hand, one can notice that student are beginning to react by less frequently enrolling in these courses of study, even though they still remain dominant. The fact remains that a decline occurred in the proportion of university students graduating from Economics in Poland during 2000-2010 from about 5-8% to around 32%. At the same time it is still very puzzling how the number of graduates in Humanities in Poland remains at a relatively high level of about 38 % of all graduates.

References

1. Buchner-Jeziorska A., *System edukacji a potencjał modernizacyjny społeczeństwa*, „Nauka i szkolnictwo wyższe”, 1996, nr 7.
2. *Dane dotyczące liczby bezrobotnych wśród osób z wyższym wykształceniem w Małopolsce w latach 2007–2011*, Wojewódzki Urząd Pracy w Krakowie, Kraków 2012.
3. Dąbrowa-Szeffler M., Jabłecka J., *Szkolnictwo wyższe w Polsce*, MNiSW, Warszawa 2007.
4. *Diagnoza stanu szkolnictwa wyższego w Polsce*, Raport Ernst & Young Business Advisory i Instytut Badań nad Gospodarką Rynkową, Warszawa 2009, Listopad.
5. Gyimah-Brempong K., Paddison O., Mitiku W., *Higher Education and Economic Growth in Africa*, “Journal of Development Studies” 2006, Vol. 42, No. 3, s. 509–529.
6. Kozak K., UK: *Absolwenci szkół nic nie umieją*, MojaWyspa.co.uk, 2012.
7. Kruczkowska M., *W Chinach miliony absolwentów wyższych uczelni są bez pracy*, 2009.
8. Levin H.M., Driver C.E., 1994, *Estimating the Costs of an Educational Voucher System* [in:] *Selected Papers in School Finance*, Stanford University, 1994.
9. Mazur W., *Rząd zaniedbał szkolnictwo niższe i wyższe*, „Nasza Polska” 2012, Nr 18 (861), 2 maja.
10. Musialik R., *Instytucje polskiego szkolnictwa wyższego*, Uniwersytet Rzeszowski, Zeszyt nr 14, Rzeszów 2009.
11. OECD, *Education at a Glance*, OECD 2008.
12. OECD, *Higher Education to 2030*, OECD 2008.
13. OECD, *Tertiary Education Reviews: Poland*, OECD 2007.
14. *Rocznik Statystyczny za lata 2002–2011. Dane dotyczące absolwentów szkół wyższych w Polsce w latach 2000 – 2010 według kierunków kształcenia*, Główny Urząd Statystyczny w Warszawie, Warszawa 2002–2011.
15. Romer P., *Human capital and growth: theory and evidence*, “Carnegie-Rochester Conference Series on Public Policy” 1990, Vol. 32, 251–286.
16. Sendrowicz B., Piątkowska M., *Studenci dla „Gazety”: o nauce praktycznych umiejętności na uczelniach nie ma mowy*, „Gazeta” 2012, 23 kwietnia.
17. *The Role of Higher Education in Economic Development*, Northern Illinois University, 2005, May.
18. Zadroga A., *Dobra uczelnia = dobra praca*, „Gazeta Wyborcza” 2011, 17 października.