

*Projekt finansowany w ramach umowy 857/P–DUN/2016
ze środków Ministra Nauki i Szkolnictwa Wyższego
przeznaczonych na działalność
upowszechniającą naukę.*

Nazwa zadania:
Stworzenie anglojęzycznej wersji publikacji



Ministerstwo Nauki
i Szkolnictwa Wyższego

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2016, t. 71, nr 6

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The Functions of University in a Knowledge-Based Economy and Their Implications for Students

Abstract. *Over the recent years, higher education has experienced a number of changes stemming from the pursuit of neoliberal ideology and the implementation of the Bologna Process. Emphasis placed throughout the European Higher Education Area on the employability of university graduates and their preparation for job market entry upon completion of a first-cycle program, alongside competition among higher education institutions and their embracement of entrepreneurship, are just a few of the changes that were triggered decades ago and are here to stay. It is therefore becoming increasingly important to address such questions as: how these changes have affected the functions of university, what factors determine the trends of change in Polish higher education institutions, and what implications the transformations of universities and their functions have had for students.*

Keywords: *functions of university, Europe of Knowledge, knowledge-based economy, higher education stakeholders*

Introduction

Over the first two decades of the 21st century higher education has been exposed to a number of factors triggering changes to the functions performed by universities. The prevalence of neoliberal ideology, the advancing globalization and multiculturalism, the inception of the European Higher Education Area

coupled with reforms to the higher education sector entailed by the Bologna Process, and the embracement of academic enterprise are [Wiśniewska 2014: 33-49] just some of the factors behind the changes taking place in the European and national frameworks of higher education as well as at the heart of universities.

Economic neoliberalism has made university education more practical and hands-on, concentrated on training for specific professions rather than on students' comprehensive academic development. The way that the Bologna Process has contributed to the evolution of higher learning across Europe is by accelerating university graduates' entry into the job market and expanding opportunities to continue education or to seek employment in countries signatory to the Bologna Accords – hence spurring the growth of multiculturalism all over Europe and beyond.

Given the above, it seems vital to know the direction that the functions of university are evolving toward, to determine the key drivers of changes to the way universities perform their functions, and to see what implications these changes have for students. The paper thus endeavors to identify the reasons for, and the trends of, changes in the functions of university, and to outline the consequences that the changes might bring to university students.

1. Changes in the functions of university

The science and research function has been intrinsic to universities since the Middle Ages. “Considering their staffing (primarily clergy) and the language of instruction (Latin), in the 12-14th century Europe they performed the role of centers of international life. As educational institutions, they had developed their unique instruction and research methodology known as the scholastic method” [Żechowska 1999: 46]. B. Żechowska notes that the belief in the university's leading role in research long persisted in Poland as well as across Europe. It was not undercut until the beginning of the 20th century when “increasing evidence indicated that the research and the educational (i.e. didactic-pedagogical) functions of university should be regarded as equally important” [Żechowska 1999: 48]. T. Lewowicki focuses on the elite-formation functions of higher education institutions, including traditional universities in the first place which he sees as bearing responsibility for “retaining continuity in culture and science, handing down the societal systems of values and behaviors, fostering the intellectual abilities of students, training the privileged classes, i.e. the elite, for their leadership role in economy and in public institutions, and educating experts to back up those in control of the state” [Lewowicki 2012: 14].

As a result of the common adoption of Humboldt's concept, universities have always combined the research and the educational function. The educational function is closely associated with knowledge creation based on research conducted in collaboration with students. T. Lewowicki contends that "institutions of higher education – since they attract top-notch knowledge workers – ought to make a significant contribution to scientific advances, and it should be through the creation of scientific knowledge" [Lewowicki 1995: 20]. This function has always been seen as intrinsic to universities. "Among the functions carried out by contemporary universities priority should be given to the pursuit of science and research [...]. Universities – being populated by scholars specialized in a large variety of disciplines – are uniquely competent to engage in defining paths for future research and in proliferating new disciplines of science at intersections of existing knowledge domains" [Kruszewski 2000: 25-26]. At the same time, however, the author insists that "higher education institutions ought to, in the first place, perform basic research in disciplines where there are strong research teams" [Kruszewski 2000: 26]. At the moment, the research function has gained a commercial aspect visible in an emphasis on translating research outcomes into patents, applications and innovative technologies that feed into the economy. This is because, under the Lisbon Strategy, scientific research is supposed to not only lead to knowledge creation but also play an instrumental role in building an innovative, competitive and knowledge-based economy by partnering with business and industry.

The traditional educational function of university, closely linked with the research function under the Humboldtian model of higher education, "comprises the formation and education of elite groups – of those who are destined to take over leadership positions in government, economy, and culture" [Kruszewski 2000: 27]. Vested with this function, "university tends to be perceived in its environment as a center of learning that trains highly qualified workforce for the society, economy, and state" [Kobylarek 2005: 33]. The pedagogical-formative function of universities originates in the concept promulgated by the English theologian J.H. Newman but it has not effectively taken root.

Although this is not a complete list of functions performed by universities, A. Kobylarek argues that "all the other functions are intimately linked with these two or are derived from them and could be seen as their extensions." K. Kruszewski maintains that "the most popular attempt to delineate the functions of Poland's higher education sector ends up in isolating these three: instruction, formation, and research" [Kruszewski 2000: 20].

The rapid pace of changes in the surrounding social reality has been fueling an expansion in the functions of university, both internal and external [Jaskot 2002: 4-24]. At the moment, the functions performed by universities are as shown in Fig. 1.

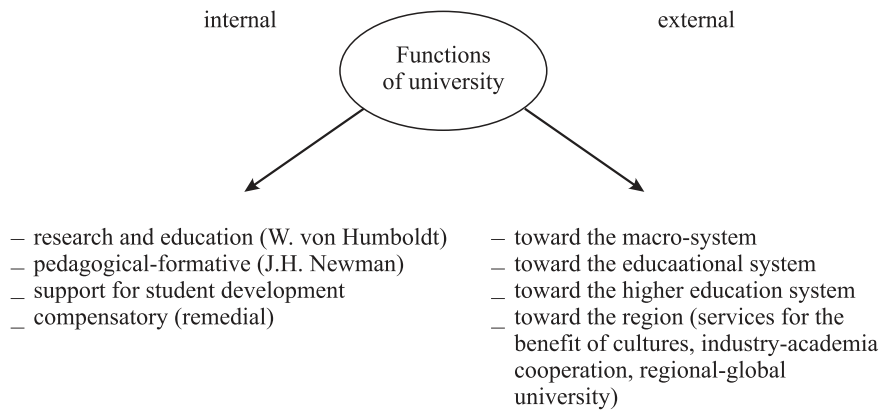


Figure 1. Functions of university

Source: own based on the classification proposed by Jaskot 2002: 4-24.

Concerning the distinction into university's internal and external functions, it should be noted that, arguably, the former are very slow to take effect, being aligned with changes in educational philosophy, whereas the latter are determined by the environment and reflect the need to adjust to changing requirements. The traditionally entrenched functions of universities continue to heat the debate among scholars on whether a higher education institution can and should be run the same way as a business organization would, i.e. whether it should aim at generating profits and financial autonomy, hence raise funds by charging fees for its services when e.g. sharing its expertise and research findings. At the same time, the worsening demographics and the job market dynamics, in conjunction with neoliberal ideology and EU policies, have been pressuring universities to give prominence to employability and concentrate on vocational training at the undergraduate level. Academic education has been, under directives issued by Education Ministers in the European Higher Education Area, shifted to second- (Master's) and third-cycle (Doctoral) programs.

In the 1990s, several seminal publications offered outlooks on the different levels of European education in the 21st century. J. Pólturzycki names three such publications: *Learning: the Treasure Within*, also known as the Delors Report; the European Commission's 1995 *White Paper on Education and Training*; and the 1996 OECD report *Knowledge-based Economy* [Pólturzycki 1999: 16]. The first of the documents highlights the fact that "education is becoming multi-dimensional (with the four pillars indicated by the European Commission), encompassing these four broad strands: learning to know, learning to do, learning to live together and to live with others, and learning to be. All of these strands are

important and necessary, they make up a whole” [Pólturzycki 1999: 18]. Attention is also brought to the importance of lifelong learning. *The White Paper on Education and Training* envisages that “the primary goal of education will be to consistently, albeit quickly, build up the learning society” [Pólturzycki 1999: 23]. Changes in educational systems and approaches will be due to three major factors: the emergence of the information society, the economic globalization process, and the advances in science and technology [Pólturzycki 1999: 23].

Closer linkage between industry and academia, attuned with robust growth of occupational training, is also highlighted by R. Pachociński: “University authorities are no longer alone in heading their institutions, as an increasingly pivotal role is played by governments, businesses, and trade unions. An important trend initiated in the 1990s was for higher education programs to become less academic and more occupational in nature [...] a university curriculum is supposed to train students for increasingly complex jobs. [...] Both students and employers demand that study programs be tailored to specific workplace requirements. The proliferation of professionally-oriented higher education programs has gone hand in hand with another global trend in higher education – that for tighter coupling between higher education and industry. More and more industrial actors want to see job-specific skills taught at universities. [...] The relationships between industry and higher education are becoming central to the higher education sector and are perceived amongst major challenges it has to face” [Pachociński 2004: 13-14].

As far as internal functions are concerned, the socialization function is one that deserves a more extensive treatment. In D. Hejwosz’s phrasing, there are four levels at which this function is fulfilled:

- democratization – “In this context, university is where *citizens* are *forged* who will advocate democratic values, who will be tolerant, open to change, free from prejudice and resistant to stereotypes that could undermine the existing social order” [Hejwosz 2010: 80],
- preparation for a professional career or social mission – “universities not only prepare individuals to cope in the labor market but also inculcate basic moral and ethical values.” [Hejwosz 2010: 80],
- building a society’s elite – “educates future members of social elite to lead institutions and public opinion, at the same time providing them with requisite skills to adopt the lifestyle of high society” [Hejwosz 2010: 80],
- formation of scholarly men – “university is where researchers – *men of science* – are *forged* to ensure the continuity of our civilization’s culture”, which implies equipping prospective truth seekers with the methodological tools they need [Hejwosz 2010: 80].

Nevertheless, in an environment molded by neoliberal thinking and hence characterized by a growing emphasis on preparation for job market entry, the pedagogical-formative and the socialization functions of universities seem to be on the decline.

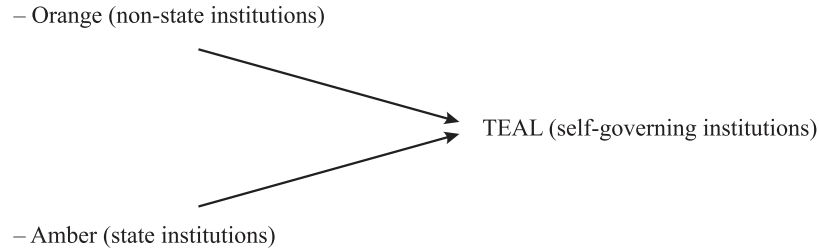


Figure 2. Organizational changes in contemporary higher education institutions

Source: own based on Laloux 2015: 50-51.

F. Laloux perceives contemporary universities as organizations and looks at their functions from the perspective of organizational management. Having investigated the trend of changes in various organizations, he proposed a model that all kinds of modern organizations are, or should be, moving toward. Acknowledging significant differences between state and non-state institutions of higher education, he places state institutions among what he terms as Amber Organizations, while non-state institutions are classified as Orange Organizations. The distinction between Amber and Orange notwithstanding, it is Teal Organizations that Laloux sees as living organisms embodying A. Maslow's needs hierarchy theory – founded on self-management and striving for self-development of individuals supported by coaches [Laloux 2015: 51, 71-174]. Thus the ongoing changes in education, as well as in other sectors, appear to have a similar trajectory, which is illustrated in Fig. 2.

In discussing the current trends in higher education and the functions performed by higher education institutions, it should be pointed out that, over the centuries past, we have seen multiple changes in both the internal and the external functions of university. Although, in K. Jaskot's view, changes in the internal functions take more time to happen and are geared to contribute to students' personal development, the two recent decades have been marked by significant changes in the external functions as well.

2. The rationale for changes in the functions of university

In a knowledge-based economy, training an individual for a professional career involves education for entrepreneurship, the use of modern technology (the Lisbon Agenda, Knowledge-based Economy, R&D), and the development

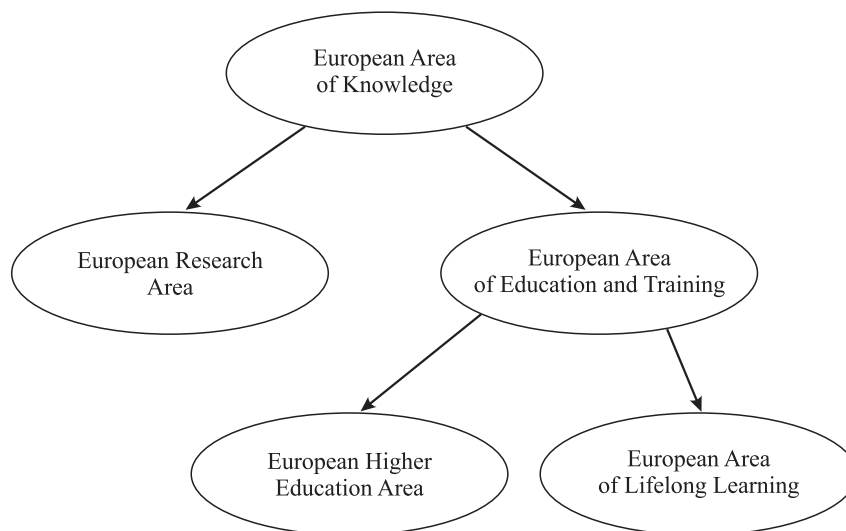


Figure 3. Policy objectives under the Lisbon Strategy

Source: Mazińska 2004: 12.

of skills sought by employers in the EU job market. At the same time, A. Stecyk highlights the role of knowledge in the information society: “The 21st century is the age of information that has been recognized as a key factor of social and economic growth and that, alongside classical factors of production such as land, capital and labor, has become the driver of civilization advances” [Stecyk 2013: 15] Both knowledge and information therefore emerge as essential to building Europe’s competitive edge. “EU membership calls for a broader and more active participation of Poland’s education sector in common European policy initiatives for transforming the existing education and training systems toward a common European area of knowledge [...]” [Mazińska 2004: 12] that will be made up of four components (Fig. 3).

In the wake of the Lisbon Agenda was developed – and adopted on June 14, 2002 – a joint work program on the follow-up of the objectives of education and training systems in Europe, detailing the activities focused on accomplishing the following general and specific strategic goals:

“Strategic objective 1: **Improving the quality and effectiveness of education and training systems in the EU** in order to cater to the needs of the knowledge society and accommodate the evolving content and methods of teaching and learning:

Objective 1.1 – Improving education and training for teachers and trainers

Objective 1.2 – Developing skills for the knowledge society

Objective 1.3 – Ensuring access to ICT for everyone

Objective 1.4 – Increasing recruitment to scientific and technical studies

Objective 1.5 – Making the best use of resources

Strategic objective 2: **Facilitating the access of all to education and training systems** in line with the idea of lifelong learning and in an effort to boost the chances of finding permanent employment, to increase professional development opportunities, and to promote active citizenship, equal opportunities and social cohesion:

Objective 2.1 – Open learning environment

Objective 2.2 – Making learning more attractive

Objective 2.3 – Supporting active citizenship, equal opportunities and social cohesion

Strategic objective 3: **Opening up education and training systems to the wider world** in light of the necessity to better adapt education to the requirements of today's workplace and the needs of society at large as well as to meet the challenges of globalization:

Objective 3.1 – Strengthening the links with working life and research, and society at large

Objective 3.2 – Developing the spirit of enterprise

Objective 3.3 – Improving foreign language learning

Objective 3.4 – Increasing mobility and exchange

Objective 3.5 – Strengthening European co-operation" [Bednarczyk, Gawlik, Kupidura 2005: 60].

Neoliberal ideology compels higher education institutions to equip their students with prerequisites for specific jobs, to adjust to employers' expectations, and to develop their students' confidence in their utility as workforce based on their expertise, skills and, last but not least, social competences – formerly known as soft skills and defined as "skills, abilities, personality traits, attitudes and behaviors rather than formal or technical proficiency" [Woźniak 2009: 45]. An inability to upgrade one's competences through lifelong learning either gives the employer grounds for dismissal or (at best) may lead to an employee's resignation. From a neoliberal perspective, it is highly desirable that employees be able to realize their uselessness for the company and hand in their notice of their own accord.

Another determinant of change in higher education institutions is the accelerating progress in ICTs and other modern technologies. Today university students, being university's major stakeholders, are people who live and work tied to their laptops, tablets, e-books, smartphones, etc., and stay connected all the time. Clearly, the instructional process must take account of the needs and expectations of educational service customers of all ages and nationalities (programs such as Erasmus plus, Mundus, Tempus, etc.). University facilities need to change, too.

There are more and more classrooms furnished with multimedia and interactive whiteboards that not only make the study experience more attractive but also have a positive effect on integration among student groups and on interaction between the teacher and the students.

An even more important driver of change in universities is the postmodern era characterized by variability, fluctuation and volatility. “we are all transiting into a world that is, in a sense, *prefabricated*; a world where some things are essential while other things are less so or do not matter at all; a world where the existing measures for value and urgency make some things stand out and come into our view while other things are moved out of sight and out of mind; more than anything else, however, it is a world where a vast multitude of facts and objects are obvious enough to wholly escape our attention – we do not even need to call these facts or objects by the name to make sure that they are present and that they continue, as they have done ever before, to bestow upon this world this type of firmness and solidity that we have learned to call reality” [Bauman 2000: 19]. In a world where change is the only thing that can be considered permanent, university degree holders should be aware of the impermanence of their knowledge as well as of all sorts of skills and competences. Employees, on the other hand, should be committed to different forms of lifelong learning. They must be also ready to retrain or relocate if necessary, and perceive any out-of-work periods not as unemployment but as being “between jobs” – looking for another job or occupation or contemplating a business start-up. It is increasingly common among young people to choose to take a gap year, i.e. discontinue education or professional activity in order to take a break and think things over, and then restart with a new outlook on their careers or educational paths, possibly modifying their original choices [Sobczak 2014: 30].

3. Student-centered implications of changes in the functions of university

Changes in the functions of university have a substantial impact on the benefits delivered to students as well as on the difficulties encountered by learners. Concerning the internal functions, the benefits for educational services customers include the following:

- training for professions that are in demand in the job market and the economy
- implementations in industry and the latest technologies,
- acquisition of hands-on and research skills,
- developing entrepreneurial attitudes and competencies,

– making up for educational deficiencies (in knowledge, skills and social competences) carried over from earlier stages of schooling.

The first-cycle (Bachelor's) degree is supposed to enable an individual to enter the job market and seek employment (or choose to be self-employed). Hence education for entrepreneurship becomes a must, and students need to be provided with both hard (technical, job- or area-specific) skills and soft skills, the latter being perceived as increasingly important by employers themselves. The 2011 amendment to the Law on Higher Education¹ imposed an obligation on higher education institutions to include a work placement as part of every curriculum that is designated as practical-profile. At the same time, the Ministry of Science and Higher Education launched the *Study Hands-on*² program that mandates higher education institutions to team up with employers in creating opportunities for students to acquire hands-on skills and experience, alongside social competencies that are relevant to specific jobs, as part of their university education in all practical-profile programs. Research competencies, on the other hand, associated with second-cycle (Master's) degree programs and the Humboldtian model of university, allow graduates to seek employment in institutions of higher learning, research institutes, industry, and in the ever growing technology sector. It should be noted at the same time that the number of second-cycle degree holders continues to increase. An example of successful industry-academia cooperation in curriculum design can be found in the experiences of the University of Wrocław [Uniwersytet Wrocławski] that has been pursuing, since 2014, a joint project aiming at "institutional alignment of the University's curriculum to the needs and expectations of the job market and the establishment of lasting links with employers" [Strategic Project Charter 2014].

Entrepreneurial competences, associated with the development of key competencies at each stage of education (competencies critical to lifelong learning), are particularly relevant in the higher education context. Job market entry involves the knowledge and understanding of business as much as an entrepreneurial attitude. In university settings, emphasis placed by an enterprise-oriented institution of higher education on developing entrepreneurial competences may be beneficial to employers as well as to alumni.

With the long-predicted demographic low [Kwiek 2016: 110] just round the bend, the compensatory function of university can be expected to expand gradually. As candidates increasingly differ in that they come from largely different

¹ Ustawa z dnia 18 marca 2011 r. o zmianie ustawy – Prawo o szkolnictwie wyższym, ustawy o stopniach naukowych i tytule naukowym oraz o stopniach i tytule w zakresie sztuki, Dz.U. nr 84, poz. 455 [Amendment Act of March 18, 2011 to the Law on Higher Education, and to Act on the Academic Title and Academic Degrees. Journal of Laws 2011 No. 84, item 455].

² www.nauka.gov.pl/praktyki/ [accessed 27.08.2015].

learning environments, bringing with them not only very different learning habits but also very different levels of knowledge, skills and competencies, teachers will face more challenges in assessing their progress and will need to put more effort in fostering their further development and compensating for deficiencies that hamper the pursuit of course learning outcomes.

It should be pointed out that the educational function and the developmental support function can be deployed by furthering the activity of student societies, academic career centers and business incubators, as well as through the availability of a rich variety of elective courses at the university department level. These enable students to develop just the competencies that they truly wish to work on.

As far as the external functions are concerned, the following student benefits for students will play an increasingly important role:

- expanding employment opportunities for graduates seeking jobs in the region or in the European Higher Education Area,
- more focus on developing language skills and soft skills.

Higher education institutions and employers will thus work closely together in designing practical-profile curricula focused on developing specific professional skills and qualifications and aiming to form a graduate who will be capable of making the most of the opportunity to find employment as a result of a work placement. The question that remains unanswered is that of developing such skills as critical thinking, making inferences or formulating independent opinions – precisely those competences on which universities have anchored their reputation and that have traditionally been inscribed in their mission. We should therefore address the doubts raised by some about whether employability can really be seen as the blueprint for the design of first-cycle degree programs while all the other competences will only be taught in second-cycle programs. “There is one more good reason to fear the perils inherent in the belief that that education, particularly in academic settings, should be adapted to the requirements of the job market. The word *adapt* itself denotes a departure from the conception of university as the cornerstone of critical thinking. If we, instead, start thinking in terms of adaptation, university is represented as an institution that merely produces (insufficiently qualified or unqualified) workforce – the kind of individuals who are referred to by some as cognitarians – and appears to be not much more than an in-house training center offering education in narrow areas of specialization wanted by employers; who are all the same unsatisfied with the qualifications of applicants” [Czerepniak-Walczak 2013: 38]. With tough competition in the labor market, employers themselves begin to realize – which is reflected in studies conducted under the *Tuning Educational Structures in Europe* project [Fundacja Rozwoju Systemu Edukacji 2008] – that more value should be placed on the so called universal skills that enable employees to quickly re-train for other jobs. Hence, it makes just as much sense now as ever before to ask

whether higher education institutions ought to merely train professionals employable in the EU job market or, rather, strive to shape reflective, critical and independent thinkers spawning new insights into their fields of expertise.

Beyond any doubt, Poland's EU accession and its involvement in the implementation of the Bologna Process has led to a stronger emphasis on developing the language skills of higher education students. Ample opportunities to go through part of the education process outside the home country account for increased exposure to other cultures, customs and traditions that makes it a lot easier to appreciate "otherness" and quickly build up relevant social competencies [Wiśniewska 2013: 163-171]. Studying with and among people of other nationalities allows students to develop an ability to work in a multi-cultural team and overcome stereotypes resulting in prejudice toward "the Other". For a higher education institution, on the other hand, this stands for access to generous funding for their English Divisions, student or alumni mobility programs, and staff exchange schemes.

By way of summary, it should be accentuated that higher education institutions operating in the European Higher Education Area do attempt to pursue visions and missions involving a variety of external and internal functions that obviously benefit their students and other stakeholders. It is not so clear, however, how to address some of the difficulties that have been identified among the implications arising from EU membership for higher education degree holders.

Changes in the functions of university occurring in the contemporary education context are attributable to the impact of diverse factors. One of these is definitely the transition from the Humboldtian toward the entrepreneurial model of university. Those graduating from the latter are expected to be, in the first place, effective and independent learners. Further, research skills have been deemphasized in favor of technical and social competences relevant to specific professions. Is this trend going to continue under the amended Law on Higher Education? This is soon to be ascertained.

As a result of the higher education reforms implementing the Lisbon Strategy and the Bologna Process, a university graduate has become eligible for continued education throughout Europe and can move freely between countries owing to the adoption of the European Credit Transfer System as a common standard for comparing and recognizing their previous study attainment and performance. It comes as no surprise then that more and more students declare an intent to seek employment outside their home country. At the same time, we have seen a marked increase in the number of students taking out higher education programs in Poland. In contemplating follow-up changes in legislation, priority should be given to enhancing employability and creating job openings for prospective university alumni. The success stories of industry-academia cooperation in curriculum design have definitely increased opportunities, yet the questions arises whether this actually should be the primary mechanism in place

to facilitate university graduates' access to the rapidly evolving job market. The unfavorable demographic forecasts for Poland [Kwiek 2016: 110] might in fact force universities to focus on their science and research rather than educational and pedagogical-formative functions, thus reverting to the traditional W. Humboldt idea of university.

The supremacy of the educational and pedagogical-formative functions has effectively led higher education institutions to center the education process on student and employer expectations vis-à-vis learning outcomes, i.e. their knowledge, skills, and social competences. The entrepreneurial model sensitizes universities to the needs of their internal and external stakeholders, compelling them to respond to market requirements both in terms of teaching and research priorities. In effect, universities tend to abandon their pedagogical-formative function, instead concentrating on other internal functions. However, to be able to develop and fully realize their potentials, students need to be competent socially as much as professionally. Being deficient in social skills, many graduates feel inadequate in the labor market, seeing an increasing number of employers look for interpersonal skills in job applicants. Hence, there is still a lot to be done regarding the way this function is performed by higher education establishments.

Conclusion

The dynamic changes in the socio-economic environment associated with the 21st century civilization advances and the accelerating globalization have caused all higher education institutions – whether a full-fledged or a vocational university, public or private – to evolve toward the ideal of entrepreneurial university. Efforts directed at building the Europe of Knowledge and the knowledge-based economy involve human and intellectual capital to create the most competitive European Higher Education Area where cooperation between academic institutions and industrial enterprises or the SME sector would come as a matter of course.

Poland's EU accession and the ensuing embracement of the Bologna Process have resulted in the harmonization of educational structures and enhanced development opportunities for university stakeholders: students, graduates, research staff, and administrative staff. Importantly enough, the tuning took place simultaneously at the higher education level and at other levels of formal education. Increased autonomy of faculties and departments, on the other hand, has made it easier for universities to raise funds through cooperation with different industries and sectors of the economy. What seems to be crucial in the context of this discussion is, however, that most benefits are reaped by higher education students and alumni.

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Funkcje szkoły wyższej w gospodarce opartej na wiedzy i ich konsekwencje dla studiujących

Streszczenie. *Edukacja na uczelniach pod wpływem działania ideologii neoliberalnej oraz realizacji Procesu Bolońskiego podlega nieustannym zmianom. Nacisk na zatrudnialność absolwentów w Europejskim Obszarze Szkolnictwa Wyższego, przygotowanie do wejścia na rynek pracy już po ukończeniu studiów pierwszego stopnia, konkurencyjność uczelni i ich przedsiębiorczość to tylko niektóre z przemian edukacji w szkolnictwie wyższym w Polsce towarzyszące nam od dziesięcioleci. Dlatego też coraz bardziej istotne wydają się odpowiedzi na pytania: jak zmieniają się funkcje szkoły wyższej? Jakie czynniki determinują zmiany w uczelniach w Polsce? Jakie konsekwencje dla studentów wynikają ze zmieniających się funkcji szkoły wyższej?*

Słowa kluczowe: *funkcje szkoły wyższej, Europa wiedzy, gospodarka oparta na wiedzy, interesariusze uczelni*