

Professional and General Education in Turkish Higher Education

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Abstract

The dramatic higher education expansion in Turkey was largely associated with professionalization of higher education. The process of professionalization started in the 1980s and accelerated after 1990s. In the comprehensive university model, all study fields have been affected by professional education and narrow professional education has become the norm in Turkish higher education. Whether the perspective taken as the requirements of knowledge economy or mission of higher education, curriculum reform should be high agenda of Turkish higher education.

Keywords: *Higher Education, Professional Education, General Education*

JEL Codes: *I24, I26, I28*

Türkiye Yükseköğreniminde Profesyonel ve Genel Eğitim

Türkiye’de yükseköğrenimin kitleselleşmesinin önemli sonuçlarından biri yükseköğrenimde profesyonel-mesleki eğitimin baskın hale gelmesi olmuştur. Bu süreç 1980’li yıllarda başlamış 2000’li yıllarda hız kazanmıştır. Ön lisanstan, doktora tüm dereceleri, tıptan güzel sanatlara tüm bilgi alanlarını barındıran kapsamlı üniversite modelinde profesyonel-mesleki eğitim diğer alanları da etkilemiş, bunun sonucunda profesyonel eğitim norm haline gelmiştir. Bugün her dört öğrenciden üçü bu alanlarda öğrenim görmekte, genel eğitim alanları sürekli olarak daralmaktadır. İster bilgi ekonomisinin ihtiyaç duyduğu yetkinlikler açısından isterse de yükseköğrenimin misyonu açısından bakılsın, Türkiye yükseköğreniminin en önemli gündem maddelerinden biri ders programlarının genel eğitimi içerecek şekilde yeniden yapılandırılmasıdır.

Anahtar Kelimeler: *Yükseköğrenim, Profesyonel Eğitim, Genel Eğitim*

Jel Kodları: *I24, I26, I28*

1. Introduction

The higher education system of Turkey has dramatically changed since the 1980s. Three main features have changed in substantial ways: enrolments, curriculum and governance. This paper emphasis the former two interrelated features: enrollments and curriculum. One of the most important changes in Turkish higher education over the last 30 years has been the gradual expansion of professional-occupational education. Higher education has become increasingly professionalized. This process has three dimensions. Firstly, the number of enrolments in the professional field of studies has risen unprecendently. Today, three out of four students study in professional fields. Secondly, as professional education increasingly dominates higher education, the number of specialized courses in the curriculum has risen, and the number of general education courses, declined. Finally, the Turkish Higher Education system usually views every field of study as a profession, and curriculum of almost all fields of study are becoming more professionalized. Today, narrow professional education has become the norm in Turkish Higher Education.

What factors explain this variation in curricular focus in Turkish Higher Education system? At least four reasons can be identified. The first is expansion and massification of higher education. Over the last three decades, university enrolment in Turkey has risen significantly. Gross enrolment rate exceeded 100% in 2016. As Trow (1973) argues, most problems of higher education today arise from the expansion of higher education, which affects the curricula, structure and modes of instruction change. The second is the lack of a strong general education tradition. A higher education system with a weak general education tradition has a strong tendency to drift towards professional education. Thirdly, the utilitarian philosophy and economic value of higher education is reshaping the mission of higher education (Tomlinson 2012), which now focuses exclusively on equipping graduates with professional knowledge and skills. Finally, early specialization at the undergraduate level reinforces the professionalization process in higher education.

What is difference between general and professional higher education? How was it applied to Turkey? Was the rise of professional higher education in Turkey an isolated event or part of a global trend? Why would one be concerned about the rise of rise of professional

higher education in Turkey? Can we draw broad lessons from the Turkish case? These are some questions that motivated this study. The main purpose of this paper is to provide some information on, and analysis of, professionalization of Turkish Higher Education through enrolments and developments in curriculum. Although, according to Rothblatt (2003), "eventually, all educational issues become curricular issues", very few studies have considered the developments of curriculum in the Turkish higher education system. The following section will briefly review the relevant literature. Section three discusses the factors that might have affected curriculum structure of higher education institutions from a historical perspective. Section four attempts to analyse the expansion and professionalization of Turkish higher education system. The paper concludes with a proposal of curriculum reform for Turkish higher education system.

2. Review of Relevant Literature

Historically, the goal of higher education has primarily been shaping students' minds and characters, as a preparation for roles in elite through general education (Trow 1973; 2007). Scott (2002) identified that general education has manifested itself in three main historical forms. The first was as liberal education, most pronounced within the Anglo-Saxon countries. The second was as *bildung* (or 'formation') within the continental European university tradition, particularly in Germany, Scandinavia, the Low Countries and parts of Eastern Europe. The third was as general education, as it developed within the American higher education system.

Association of American Colleges and Universities describes general education as an approach that "provides knowledge of human cultures and the physical and natural World through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts; intellectual and practical skills, including inquiry and analysis, critical and creative thinking, written and oral communication, quantitative literacy, information literacy and teamwork and problem solving; personal and social responsibility, including civic knowledge and engagement, intercultural knowledge and competence, ethical reasoning and action, foundations and skills for lifelong learning anchored and integrative and applied learning"

Historically, many professions developed outside the university, but eventually most, if not all became incorporated (Rothblat, 2003). Professional education prepares students for specific jobs, whereas aim of general education, as a education philosophy, is to prepare students for any profession. In the movement of professions into universities, general education and professional education influenced each other. The university liberalized professional schools and came to dominate them within the field of study, and at the same time, the goal of higher education has become more professionalized. Labaree (2006) points out that the aim of higher education has become more professionalized, whereas content has become more liberalized.

Grubb and Lazerson (2005), in analysing how higher education in the US converted to professional education, acknowledges that professionalism, on the one hand, makes higher education more attractive for students and employers and provides social legitimacy, but on the other, has replaced broad general curriculum with narrow professional curriculum, because rewarding jobs have become more important than gaining knowledge. They identified three reasons of rising professional education: mass higher education, increasing adaptability of university curriculum to market needs, and the rise of the second-tier comprehensive university. Brint (2002) shows that in the US, despite the sharp increase in students' enrolments in professional fields, general education still dominates among prestigious universities, and professional education is highly restricted at undergraduate level. Research by Brint et al. (2005) indicates institutional characteristics are most strongly associated with the production of a large number of degrees in occupational-professional fields, as opposed to the arts and sciences. They found that research universities award more arts and sciences degrees than other institutions, while comprehensive universities are strongly associated with professional degrees. Academically weaker institutions should be more market sensitive and more occupationally oriented than other institutions. Their most important finding is the connection between less prestigious institutions and high proportions of occupational-professional degrees. Labaree (2006) shows that in US higher education system, leading universities offer theoretical and liberal education, even in professional fields of study, whereas universities lower in the hierarchy provide more practical vocational education for occupational positions. In between, institutions offer more professional than top leading universities and more liberal from the bottom. Because lower- status institutions imitate high status liberal model offered by the top tier, one can observe changing historical balance between liberal and professional education. According to Camilleri et al. (2014), employability is the main driving factor, the rationale of professional education that academic programs would adopt reluctantly at first, and then enthusiastically in the last decades, which meant that a "vocational drift" became apparent in a large number of research universities. The National Framework of Qualifications (NFQ) that has been developed the past few years have strengthened this process, and even highly academic programmes felt compelled to include practical elements into curricula, and in the formulation of learning outcomes.

Rising of professional education in a higher education system with no general education tradition has created "quasi-professional" education. Castro and Levy (2000) state that the distinction between professional and general education in Latin American higher education has been blurred because rise of hegemony of professional education has influenced almost all study fields, and creates "quasi-professional" education. Curriculum, rhetoric, aim of study, means that even liberal arts look like professional education.

The rise of professional education has stimulated increasing interest in general education globally. General education has emerged in places where it has rarely existed before (Godwin 2015). Altbach (2016) emphasised two reasons of revival idea of general education in global higher education debate: 21st century skills needed by the market and a broad

range of knowledge required by the knowledge economy. Wende (2011) identified four reasons for renewed interest in general education in Europe: first, broader undergraduate programs are considered to overcome disadvantages of early and over-specialization at undergraduate level, and secondly, mass higher education created insufficient diversity and flexibility in institutions and programs. Thirdly, there is a search for elite education in the mass education system, and finally, a broader curriculum enhances learning effectiveness, and produces skills relevant to the knowledge economy.

Huang (2015; 2017) points out that aim of two initiatives in Japan, after Second World War and 1990s, was to fill the gap between senior high school education and professional education in university education, and to prevent an early implemenatation of professional programs in undergraduate education. The rationale behind the general education reforms in China is to transform the higher education system from producing specialized manpower to providing qualified graduates with broad-based knowledge and capacities.

Hong Kong has implemented a new approach to higher education is "general education," in which all students, regardless of academic specialization or intended career, acquire a "broad, general education," involving history and culture, as well as science and mathematics (Gaff, 2013). The most important features of Hong Kong general education reform are breadth and multidisiplinarity of curriculum, and inclusion of courses outside traditional general education (Jaffe 2013). Godwin (2013) argues that over the last two decades, on beside of US, liberal education philosophy has emerged around the World, and identified 183 liberal education programs in Europe, Middle East, Asia, Latin America, Africa and Ocenia.

3. Historical Background

3.1. Developments Before 1981

In relation to the origins of higher education, the formation of modern Turkey's higher education in the late nineteenth century was primarily impacted by the German model (Tekeli 2007). Professional education (medicine, engineering and trade schools etc.) developed outside of university, but most fields were incorporated into the university under the Ottomans. The new Republic inherited from Ottomans one university with five faculties (Medicine, Theology, Law, Letters, Sciences) and three military academies, one of which had been expanded into an engieneering school and higher schools of commerce (Barblan et al., 2008).

In 1923, with the foundation of Turkish Republic, a process of rapid reform began in all fields, including the higher education system. Turkey's university system was deeply influenced by German university tradition, and the Humboldtian model of university. Two developments in curricula issues were important. The government invited Professor Albert Malche of the University of Geneva to make an evaluation and prepare a report on the Darulfünun (later Istanbul University) and an overall proposal for higher education

system reform. Malche's report reflected Humboldtian education ideal, with the integration of arts and sciences, and emphasizing research to achieve both comprehensive general learning and cultural knowledge (Rothblat 2003). He indicated that the existing curriculum was sufficient for graduating medical doctors, lawyers and teachers, but not sufficient for training future academicians (Malche 1939). Malche's recommendations make a clear distinction between professional and general education. He proposed that a common curriculum for various disciplines should consist of core courses, specialized courses and seminars. Core courses provided general understanding of the content, analytical process, great transformations and great books and the big ideas of disciplines. They provided the content as a overview rather than in detail. Specialized courses, on the other hand, refers to professional courses. Seminar courses for third and fourth year students integrate the different types of knowledge of the study field. The curriculum of İstanbul University and newly founded Ankara University were reorganized along these lines. The second important development was the dismissal of Jewish, and politically suspect professors from German universities. As a government policy, Turkey invited and provided safe haven to over 190 intellectuals and professionals fleeing Austria, Germany, Czechoslovakia, and France (Reisman 2007). The proportion of refugee professors in faculty of İstanbul University reached 44 percent in 1936-37 academic year (Dölen 2007), making İstanbul University "the best German University in the World" (Reisman 2007).

The German model continued to influence the curriculum of universities up to the 1980s. For example, the Faculty of Political Sciences of Ankara University embraced a core curriculum, taking up most of the first two years of study. Students were enrolled in the Faculty for the first two years to attend a university course programme offering an inter-disciplinary curriculum. At the beginning of the third year, they select the diploma programme in which to specialise. The number of courses was 52 (Cadircı and Suslu 1982). Traces of general education could be found in the professional education. In the curriculum of professional education such as law, there were core courses, specialized courses and seminars. The total number of courses was 48, far fewer than today's curriculum of Faculty of Law (Cadircı and Suslu 1982).

The American model inspired Turkish higher education system since 1950s, with the newly founded universities and had two main influences. First, the departmental model of university organization in Turkey is largely adapted from the American university pattern, which, historically, represents a rejection of the traditional conception of knowledge embodied in the faculty model. The second is through the curriculum. Newly founded universities adopted American college model, in which the conventional college semester courses generally carry three units of credit, and students take five such courses (Muscatine 2009). The new universities adopted elective courses, but did not follow the general education component of the American model (Ersoy 2007). Due largely to the influence of German and American educational thought at different periods, the Turkish university system was one of the few to contain variety of models within its system of higher education in the 1970s: The German model, American model and mixed forms (Tinto 1974). Prior to 1981,

there were four types of higher education institutions: universities, academies, vocational schools and teacher training institutes. Universities had institutional autonomy but were financially state governed, while the academies, vocational schools and teacher training institutions were, in all respects, under direct state control (Tekeli 2007)

3.2. Transformation to Professional Higher Education

In 1981, the Turkish higher education system was radically reorganized, in terms of both its governance pattern and its academic organisation, imposing centralised structure, with all higher education institutions tied to the Council of Higher Education (CoHE) (Mizikaci 2006). The diversified higher education system ended, and the all higher institutions, academies, conservatoires and all trade and teacher training schools were upgraded to universities. This step led to a comprehensive university model. Institutions provide education in a broad range of sciences, social sciences, the humanities, and professional subjects such as engineering, medicine and business, ranging from two-year vocational programs to doctorate level. Within the the university academic organization, the German chair system was abolished in favour of the departmental system.

Regarding curriculum, there were three developments with new higher education law. First, three courses become compulsory for all universities: Atatürk's Principles and the History of the Turkish Reforms, the Turkish language, and a foreign language. In addition, a noncompulsory course in physical education or in one of the fine arts should be included in the curriculum. All of these courses were to be planned and implemented for a minimum of two semesters. Secondly, CoHE enforced standart university curriculum prepared by the CoHE. However, this project was short-lived and CoHE allowed universities to undertake curriculum design. Thirdly, the CoHE founded new departments such as Econometrics, Public Finance and Labor Economics and Industrial Relations, which to date had been courses within the curriculum of economics department.

3.3. The Rise of Professional Education

Since the early 1990s, numerous factors have influenced Turkey's higher education. Key drivers comprise: expansion of higher education, a shift from an elite to a mass higher education, vertical differentiation of universities with their growing numbers, increasing concerns about the employability of graduates and growing pressures from employers. The issue of employability of graduates, and the skills required has become priority since the 1990s. Concern was first expressed over the lack of higher education-industry cooperation in the policy documents, which called for greater collobaration (5th and 6th Five Year Development Plan). The aim was to create a more profession-oriented curriculum, with a focus on functional knowledge.

While professional education has gained dominance over general education, and narrow professional education has become the norm in Turkish Higher Education, several reports critized the narrow and rigid nature of most university curricula. The rationale behind these criticisms can be classified into two groups. One is directly related to the knowledge economy discourse, and to employability and labor market needs, the other

directly concerns the mission of higher education. A highly influential report released by Turkish Industry and Business Association in 1994 is a good example of the former group. With a view to enhancing the employability of university graduates, the Report proposes a stronger focus on more generic skills, flexibility, and interdisciplinarity (Gürüz at all. 1994). These skills should be provided by flexible curricula, strongly linked to labor market requirements. The CoHE released yearly reports entitled "Present Situation of Turkish Higher Education", discussing recent trends in developed countries, i.e. higher education institutions are to equip students with the capacity for interdisciplinary work, analitical and critical thinking, effective communication in own language, and at least one foreign language and computer literacy and deep knowledge in the specialized field of study. These skills are provided via an interdisciplinary curriculum and course content.

Barblan et all. (2008) also emphasize that the relevance of undergraduate Turkish higher education programmes to the labor market, pointing to the current weakness of the link. There are an excessive number of programmes, and their curricula are overcompartmentalized. The author's recommendation is to phase out a significant number of programmes at the undergraduate level, to increase the liberal arts content in the earlier semesters, and to delay specialisation as long as possible. There are two ways to achieve this: the first consists in organising the bachelor-level programmes in non-regulated professional areas around a common liberal arts curriculum before the students select at least one major and one minor field of study. The second approach consists of deferring professional specialisation to the master level, whenever appropriate.

A Strategy Report issued by the CoHE in 2007 emphasised general education in the context of the education vision of higher education:

"Higher education should achieve the nature of being a mass education means and within general education vision first it should follow flexible and open programs that can adapt to the changing conditions in the world and in later stages it should target advanced specialization and be transformed into a structure that is open to lifelong learning and compevatible with world standards in terms of quality"

The Strategic Plan underlined two skills that universities should equip students with: at least one foreign language, and development of the capacity of student learning to learn.

This general education vision has never been implemented; on the contrary professionalization of higher education has accelerated. The responses of universities to these critiques have been increased professionalization. The repeal of the law which made it mandatory for universities to have at least two faculties, including Arts and Sciences, removed the last obstacle to professionalization of higher education.

3.4. Bologna Process

One of the most important development regarding curriculum in 2000s is the implementation of the Bologna process. An important dimension of this Process is the substantial curricula adjustments within the European Higher Education Area, the suggested steps for designing and/or revising curricula in line with Bologna goals are as follows:

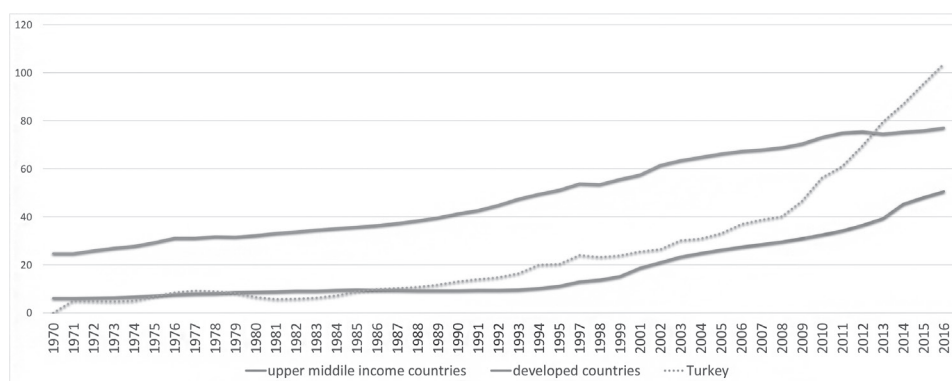
identifying program objectives, determining program qualifications to achieve objectives and defining learning outcomes and student workloads for each course in the program (Esen et al, 2012). In 2011, the law of higher education was amended so that course credits were linked to student workload, and all universities were obliged to take necessary steps to adopt the NFQ. Universities were asked to provide greater flexibility in curricula through an emphasis on electives courses. The CoHE determined that the number of elective courses should make up 25 percent of the total courses. Many voices from universities were raised against the CoHE regarding the ratio of elective courses in curriculum, that elective courses impeded adaption of programs to the NFQ. The CoHE stated that universities should give the priority requirements to the NFQ; therefore, universities resolved the issue by providing these elective courses as fundamental programs for specialized programs, or part of professional programs. As Wende (2011) points out the Bologna process held very few substantial messages regarding widening scope of curriculum, due to the general concern with flexibility. In sum, impact of Bologna Process can be summarized as follows: a dramatic decline number of courses in the curricula, flexibility and transparency.

4. Expansion And Professionalization

4.1. Increased Access To Higher Education

In 1971 almost 170 thousand students were enrolled in higher education. After a short decline in the enrolments at the end of 1970s, higher education system began to expand, increasingly from 1990s onwards. Trow's mass phase of higher education, the level of 15 percent, was achieved at the beginning of 1990. Turkey exceeded the 15 percent threshold in 1992. The enrolment rate exceeded the universal rate by 50 percent in 2010. Numbers increased from 3.5 million in 2010 to 7.6 million 2017, with 104 percent enrolment rate.

Figure 1 Enrolment rate in Turkey, upper middle-income countries and developed countries



Source: UNESCO

Turkey has succeeded in greatly expanding participation in education in the last two decades. The Turkish enrolment rate has continuously surpassed that of upper middle-income countries since 2008, and reached developed countries' enrollment ratio in 2013.

Four strategies to expand capacity of higher education were implemented after 1981 (Dundar and Lewis 1999). The first has been the expansion of open and distance education programs, which currently constitute about 48 percent of total enrolments. The second strategy has been increasing the capacities of existing universities through introduction and expansion of evening programs and two-year vocational programs. The percentage of evening program enrolments has increased from 2.3 percent in 1992 to 10 percent in 2017. The share of two year vocational programs is currently 15 percent. The third strategy has been the introduction and expansion private universities, first permitted in 1981. Private universities account for about 8 percent of total enrolments, and 15 percent of face-to-face enrollments. The final strategy has been the establishment of new public universities, whose numbers increased from 27 in 1981 to 130 in 2017 (Özoğlu et al. 2015).

Professional education has been another driving factor of rapid expansion. New public and private universities were sharply oriented towards professional education from the beginning. In the comprehensive university model, all study fields have been affected by professional education, resulting general education field of study becoming more oriented towards professional education in all areas from curriculum to mission of education. As Bok (2009) states, higher education, to a greater degree, has become merely a training camp for career.

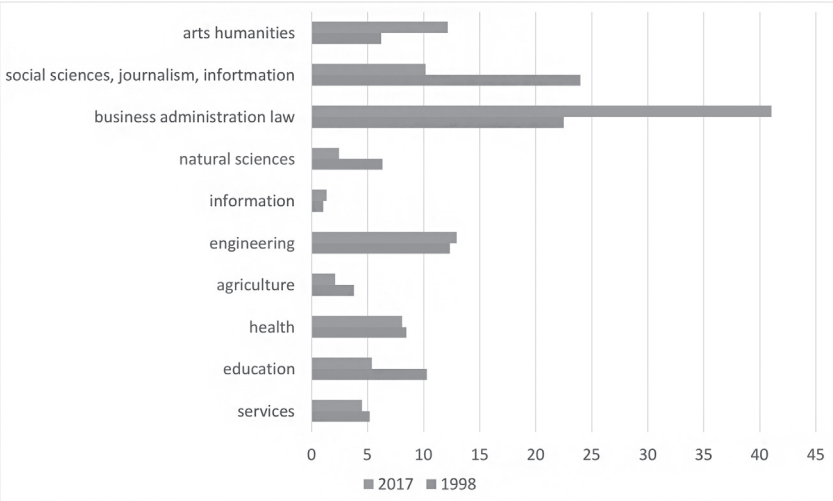
There are two main features of this expansion. First, the expansion was neither foreseen nor planned (Özoğlu et al. 2015). Strategic Plan of CoHE in 2007 targeted "65 percent" in 2025 for gross enrolment rate, but the World Bank a less ambitious recommended 50-55 percent (World Bank 2007). Turkey's enrolment rate had already exceeded this target by 2012.

Secondly, rapid expansion with newly founded public and private universities takes three-fold forms. Older, established elite universities constitute the top of the hierarchy, newly founded at the bottom, and universities lacking of status and resources, but inspired with elite universities, in the middle (Marginson 2016). As the higher education system expands, the proportion of places in elite, established universities has declined from 43 percent in 1998 to 16 percent in 2017.

4.2. Distribution of Enrollments By Study Field

General education study fields are basic fields of science, such as natural sciences, arts and humanities and social sciences and, programs in professional areas such as engineering, health and welfare, education and business and law. In the academic year 1998 general education fields accounted for 36 percent of total enrolments. Over the next twenty years, professional fields gained significantly as compared to liberal fields accounting for nearly three-fourth of students by 2017. The academic year 2011 was the low point for general education enrolments, coinciding with sharp increase in enrolments in new public and private universities.

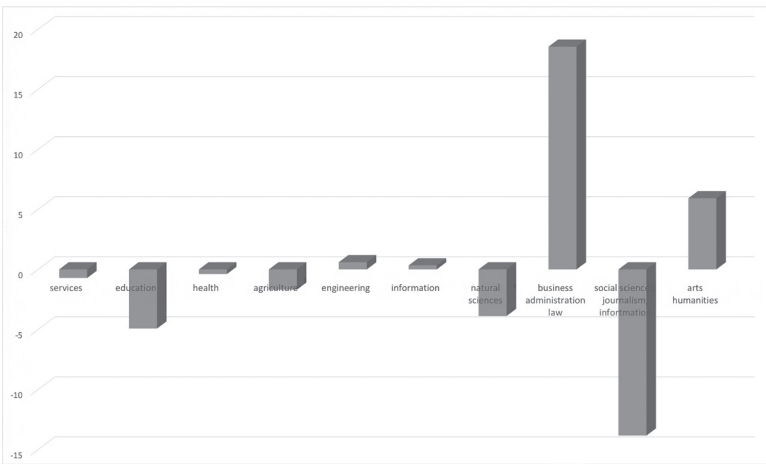
Figure 2 Changes in enrolment in fields of study, 1998-2017



Source: UNESCO

As Figure 2 indicates, natural sciences and social sciences have declined in general education over the last two decades. Natural Sciences decreased from 6.3 percent in 1998 to 2.4 in 2017. The share of Social Sciences fell more than half from 24 percent to 10.2 percent in the same period. Arts and Humanities is only the non-profession growing fields, increased from 6.2 percent to 12.1. As far as professional education is concerned, the share has declined by almost half. Health and welfare, and engineering remained generally stable, while the field of agriculture and services have both seen a decline. The fast-growing fields are business, administration and law (Figure 3).

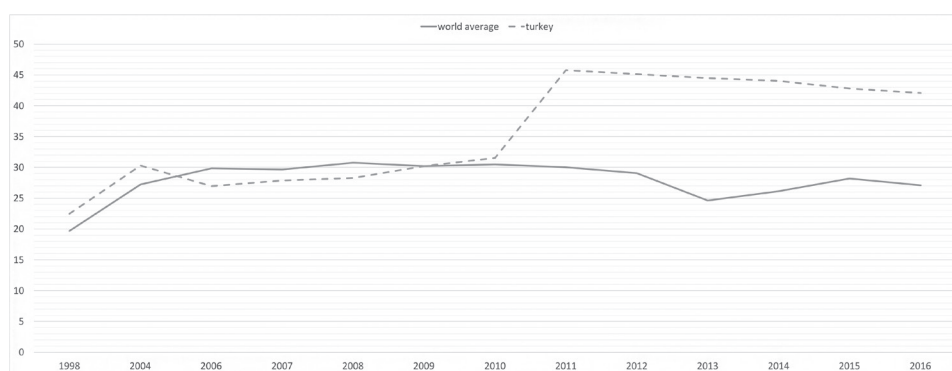
Figure 3 Differences in enrolments between 1998 and 2017



Source: UNESCO

The share of enrolments in these study fields doubled between 1998 and 2017, and this growth needs more detailed investigation (Figure 3). Nearly half of university students in Turkey study in these fields, and business study field dominates Turkish higher education. In order to be able to judge the acceptability of this distribution, it is necessary to make international comparisons. The Figure 4 makes a comparison between share of business, administration and law in total enrollment in Turkey and the World average using UNESCO education data. Share of this study field is in line with World average up to 2010, after which it exceeds the World average.

Figure 4 Share of business, administration and law: Turkey and World average



Source: UNESCO

4.3. More Professional Less University Education

To evaluate curriculum of general education and professional education, seven programs were selected from 35 public and private universities. The selected programs constitute three general education fields (economics, political science and international relations) and four professional study fields (business, civil, mechanical, electrics and electronics and industrial engineering). The ECTS catalogue was used to analyse curriculum, as this provides the most extensive information about degree requirements and course offerings.

Table 1 shows the curriculum structure of all programs selected. The average number of compulsory courses in all programs is 43.8. The average number of elective courses is 13.4. This seemingly high number but it may be misleading because most electives are departmental courses, and called "compulsory electives" in Turkish universities. Free electives considered as general education are only 1.7. The number of electives in general education study fields is higher than in professional study fields. Curriculum structure of general education fields show how general education study fields transformed into semi-professional fields, providing more specialized courses. In sum, undergraduates were enrolled by speciality, and they allocated the vast majority of time to study in relation to their speciality. They were not encouraged to take courses not directly to their subjects.

Table 1 Curriculum structure of general education and professional education

	Number of total courses	Number of compulsory	Number of electives	General education
All	54.9	43.8	11.5	1.7
General education	54.8	43.1	12.3	1.6
Professional education	55.0	44.5	10.7	1.8

Notes: General education consists of economics, political science, international relations; professional education are bussiness, electrical and electronics, mechanecial, industrial and civil engineering.

Source: Author's calculations

Table 2 shows the curriculum structure of universities, classified in terms of selectivity and reputation. In the first-tier university curriculum, the total number of courses and number of compulsory courses are lower than second-tier and third-tier universities, whereas the number of general education courses is doubled that of second-tier universities.

Table 2 Curriculum structure of first-tier, second-tier and third-tier universities

	Number of total courses	Number of compulsory	Number of electives	General education
First tier-universities	45.1	32.9	12.1	4.6
Second tier universities	53.7	44.3	10.5	1.6
Third tier-universities	56.8	45.1	11.4	1.0

Source: Author's calculation

Turkish higher education requires students to choose a specialized area of study too early, resulting in little flexibility at undergraduate level (Hatakenaka, 2006). There has been a rise in very narrowly focused undergraduate programs over recent years: the number of undergraduate programs listed by the CoHE increased from 228 in 1998 to 408 in 2018, i.e.180 new study fields have been created. Table 3 and Table 4 show how overspecialization increased due to the professionalization of higher education in Turkey. There were five study fields in agriculture provided by Faculty of Agriculture in Turkish universities in 1998, after which time, 11 new programs were created. Table 5 deals with business and administration study fields, in which the number of study fields increased from 7 in 1998 to 24 in 2018. Most of these nearly compete with two-year vocational school programs in terms subject of study field, curriculum and mission of the programs. Contrary to theoretical expectations (Hashem, 2002) business-oriented study fields have been created mainly by private universities, and engineering programs, by public universities.

Table 3 New programs in agriculture study field

1998	2018-new
Faculty of agriculture	
	Agricultural economics
	Agricultural machinery and Technologies engineering
	Agricultural structures and irrigation
Agricultural technologies	Animal science
Landscape architecture	Dairy Technologies
Food engineering	Field
Animal production	Fisheries and aquaculture
Plant production	Horticulture
	Landscape architecture
	Soil science and plant nutrition
	Plant protection

Source: Council of Higher Education

Table 4 New programs in business field

1998	2017-New
	International trade and finance
	Logistic management
	Economics and finance
	Aviation management
Business administration	Human resource management
Public administration	Entrepreneurship
Tourism management	Actuary and risk management
Banking	Energy management
Insurance	Islamic economics and finance
International trade	Local administration
Hospital management	Insurance and social security
	E-commerce and technology management
	Custom Operations
	Capital Market
	Real Estate
	International Management
	Information Management

Source: Council of Higher Education

4.4. Why Does The Turkish Higher Education System Need More General Education?

Despite universal access to education in Turkey through very sophisticated specialization, university-educated adults in Turkey have low literacy, numeracy skills, and problem solving ability in technology-rich environments. The OECD Survey of Adult Skills (PIAAC) measures proficiency in literacy, numeracy and problem solving technology-rich environments which are a foundation for developing higher-order cognitive skills, and are essential for understanding field of study knowledge.

The literacy proficiency scale is divided into six levels of proficiency: Levels 1 through 5, and below Level 1. At Level 1 in literacy, adults can read brief texts on familiar topics and locate a single piece of specific information identical in form to information in the question or directive. Sum of below level 1, level 1 and level 2 which is defined low proficiency level constitute 67.8 percent of university-educated adults (Table 5). Only 2.7 percent of adults reach high level proficiency (level 4&5).

In numeracy, university educated adults at level 1 can perform basic mathematical processes in simple, familiar contexts, for example, one-step or simple processes involving counting, sorting, basic arithmetic operations and understanding simple percentages. The proportion of university-educated adults at low proficiency level is 56.4 percent. Only 7.4 percent of adults can reach level 4&5.

At Level 1, adults can use only widely available and familiar technology applications, such as e-mail software or a web browser, to solve problems involving few steps, simple reasoning and little or no navigation across applications. In problem solving technology rich environments, 7.3 percent of university-educated adults are at below level 1. Some 11.2 percent of adults in Turkey indicated that they had no prior experience with computers, or lacked basic computer skills. Only 4.8 percent adults can reach a high level proficiency.

Another important result of the Survey shows that the difference in literacy skills between university-educated adults and adults with lower than upper secondary education is lowest in OECD countries. Educational attainment in Turkey has not translated into improved skills.

Table 5 Percentage of university-educated at each proficiency level in literacy, numeracy and problem solving in technology-rich environment

	Below level 1	level 1	level 2	level 3	level4&5
literacy	2.0	16.3	49.5	29.6	2.7
OECD average	1.3	5.9	25.2	46.9	20.9
numeracy	3.0	14.1	39.3	36.2	7.4
OECD average	1.7	6.7	25.5	43.4	23.0
Problem solving in technology-rich environments	7.3	17.4	34.1	21.3	4.8
OECD average	4.4	10.1	31.2	37.8	9.9

Source: OECD, 2016

Conclusions

The process of professionalization of higher education started in the 1980s and accelerated after 1990s. Narrow professional education has become a norm in Turkish higher education system, with a few exceptions: Sabancı, Koc and Bilkent Universities (Godwin, 2013), and a few other public and private universities.

The Turkish higher education system today is at a crossroads. Whether the perspective taken as the requirements of knowledge economy or mission of higher education, curriculum reform should be high on the agenda of Turkish higher education. As Peterson (2011) states, curricular reform that includes general education will provide broad intellectual skills needed for life in general, and transferable analytical skills for the workplace.

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