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Education as an Investment in Turkey's Human Capital: A Work in Progress

William A. OWINGS*, Leslie S. KAPLAN**, Zafer PIRIM***

Abstract

As a nation, Turkey sees education as an essential component in building its economy to world class levels. Yet school equity and teacher quality issues are preventing Turkey from fully developing its human capital. Authors discuss the concept of education as an investment in human capital, Turkey's human capital challenges, equity practices which undermine the widespread development of Turkey's human capital, how improving teacher quality could help remedy the situation, and recommendations to strengthen Turkey's education as an investment in human capital.

Keywords: Turkey, human capital, teacher quality, equity, teacher education

JEL Code Classification: A13, I21, J24

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1. Introduction

The Wall Street Journal (May 1, 2010) featured an essay headlined, “Education is the Key to a Healthy Economy” (Shultz and Hanushek, 2012). In it, authors, George Schultz, a former U.S. secretary of state and Eric Hanushek, a senior fellow at Stanford University’s Hoover Institute, argued that a nation’s economic future depends, in part, on the human capital which its preschool for 5 year olds through 12th grade (K-12) schools produce. They cited data showing that countries whose students demonstrate higher math and science skills have grown more rapidly than those with lower-skilled populations. Since the quality of a nation’s education impacts its long-term economic growth and income distribution, the authors concluded that a country’s improved education system can lead to an improved future. In contrast, without effective K – 12 schools for all children, a country’s economic growth will stall and its economic inequality will increase.

What is true for the United States is also true for OECD nations. Organisation for Economic Co-operation and Development (OECD) – a forum of 30 countries committed to democracy and free markets – data show that relatively small improvements in the skills of a nation’s labor force – its human capital – can have enormous impacts on its economic development and future well-being. The reasons why certain OECD countries grow to become economic powerhouses while others languish can be largely explained by differences in the student achievement of each country’s youth, and certain skills keep having a substantial effect (Hanushek and Woessmann, 2010).

Because improved schooling gives children high-quality knowledge and skills needed for contemporary labor markets, many countries recognize that today’s strategic investments in child and youth development is tomorrow’s economic development. As a modern nation, Turkey wants to raise its people’s educational qualifications to international norms and to create a workforce with advanced competencies. Turks, themselves, recognize this need: five out of ten say that education is the highest priority for additional government investment, and the Government of Turkey is interested in addressing these issues (World Bank, 2011). Nevertheless, increasing access to education from pre-school through upper secondary school without significant improvement in equity and teacher quality will not accomplish this end. Teachers who can effectively increase every student’s learning and achievement, their availability in sufficient numbers, and their equitable distribution among schools are all essential if Turkey is to meet its human capital goals.

This paper examines how the Republic of Turkey is addressing its human capital needs through expanded educational access and the equity and teacher quality issues which undermine its goals. The paper is organized in the following manner. Section 2 presents a conceptual background for education as an investment in human capital. Section 3 discusses the Republic of Turkey’s human capital potential

and challenges, a brief history of modern education in Turkey, its equity and teacher quality concerns, and ways to improve teachers' human capital. Section 4 offers education and policy recommendations, and Section 5 presents conclusions.

2. Conceptual Background

Traditionally, education has been associated with the process of instructing young people in ways which form the mind and character necessary to become good citizens and employable workers. Today, education has become a life-long process, increasingly connected to schooling, human and economic development, and productivity – with beneficial personal and national outcomes. As a result, during the past 50 years, expansion of education has contributed to a fundamental transformation of OECD countries, including Turkey (OECD, 2011).

2.1. Human Capital and Education

Without mentioning education, Adam Smith contended in the 18th century that one type of human labor added value to the national economy while another type of labor did not (Otteson, 2004). The importance of the labor force in economic growth later led to the idea of human capital theory.

Human capital is the acquisition of knowledge, skills, and other competencies which have economic value, especially in technically-advanced countries. By investing in their people through education and training, countries can enlarge the range of choices available to their citizens, improve their health and economic outcomes, and expand the economic and national well-being. The Lisbon Council observes that near two-thirds of all economic value in modern industrial economics is created through direct investment in the skills and human capital of the active workforce (Ederer, Schuller, and Willms, 2011). As such, a focus on how a nation educates its young people and current workforce speaks to its investment in its own economic future and the realities of achieving its national ambitions.

Education increases human capital in academic, political, and economic ways. Academically, education provides training in functional skills (such as reading, arithmetic, and writing), higher-level cognitive skills (including abstract reasoning, problem solving, and creative thinking), and knowledge of topics necessary to living competently in the modern world. Politically, education socializes a society's members to develop strong allegiance to a common national identity rather than tie their loyalties more narrowly to local or religious groups. Economically, education widens people's knowledge, skills, and awareness of ideas and practices outside their immediate experiences. In this way, learning makes individuals receptive to fresh information, creating a "modern person" who acquires the aspirations and attitudes which welcome new technologies and make them easier to master (Inkeles, 1973; and Inkeles and Smith, 1974). And the more schooling, the greater its effects (Inkeles and Smith, 1974).

Importantly, human capital is developed not only through formal education. About two to three times as much human capital is created at the workplace as in formal learning institutions such as schools or universities (Ederer, Schuller, and Willms, 2011). Skills learned in the workplace include communication skills, team behavior, problem solving, and leadership as well as functional work knowledge and capacities needed in a particular business or industry setting. The more complex and demanding the jobs, such as engineers, lawyers, and operational managers, the more opportunities for learning. Increased learning means increased employability and product value. At the same time, jobs which require continual learning tend to have positive externalities, that is, they create work for a number of other new or related jobs.

2.2. Research on Education and Human Capital

Education in developing countries can be understood as both a factor in its economic development and as a human right. Economists have analyzed education's role in economic growth in a variety of ways such as growth accounting without human capital (Solow, 1956), endogenous growth theory that includes human capital (Lucas, 1988; Mankiw, Romer, and Weil, 1992), and Total Factor Productivity which empirically considers education's role on economic growth (Denison, 1962; Krugman, 1994). Education's role in economic growth has also been analyzed at the micro level (Schultz, 1963; Becker, 1964; Mincer, 1974, Rees, 1979; Psacharopoulos, 1988, 1994, 2006).

Whatever model economists use, strong evidence exists that higher educational inputs increase productivity and result in higher levels of national growth (Wilson and Briscoe, 2004). Some economists conclude that advances in knowledge contributed 23 % of the growth in the U.S. between 1950 and 1962 (Denison, 1967). Qualifying this view, Pritchett (2001) maintained that education may be a necessary but not a sufficient condition for economic growth. Factors including institutional and governance conditions, an expanding supply of educational capital with no increase in demand, and low educational quality which produces little to no human capital all contribute to education's impact on a nation's economic growth (Pritchett, 2001).

Nonetheless, education and economic growth modeling has become increasingly fine scale. Over the past decade, empirical growth research has demonstrated that workforce quality – as measured by cognitive skills assessed on international achievement instruments – is significantly and positively related to a nation's economic growth. Findings affirm that the workforce's cognitive skills are more important than the mean years of schooling in producing economic growth. What is more, relatively small improvements in the labor force's skills can have very large impacts on a nation's future well-being. Economies with higher human capital (as measured by workers' cognitive skills) innovate at higher rates than those with less human capital (Hanushek and Kimko, 2000; Hanushek and Woessmann, 2008). This

suggests that nations whose workers have greater human capital will see more gains in productivity into the future.

For example, in "The High Cost of Low Educational Performance" (Hanushek and Woessmann, 2010), OECD described how increasing students' cognitive knowledge and skills means increased money in workers' pockets and a larger national economy. Using economic modeling to relate cognitive skills – as assessed by the Programme for International Student Assessment (PISA) – a common test developed by OECD members to assess youth outcomes in reading, mathematics, and science literacy beyond the school-based curriculum – and other international measures – to economic growth, OECD projected that the "modest goal" of having all OECD countries increase their average PISA scores by 25 points over the next 20 years (which is less than Poland achieved between 2000 and 2006), would amount to an aggregate gain in Gross Domestic Product (GDP) for OECD countries in the amount of \$115 trillion U.S. dollars (USD) over the lifetime of the generation born in 2010. Increasing all students' achievement to a level of minimal proficiency for OECD nations (400 points on the PISA scale) could result in a total OECD GDP increases of nearly US \$200 trillion as measured by historical growth relationships (Hanushek and Woessmann, 2010). Given this reasoning, if Turkish schools could bring all its students to an average 25-point increase in PISA scores (or a .25 standard deviation), the value of education reform would be worth US \$3,416 billion. Bringing all Turkish students to minimal proficiency would mean a value of US \$15,000 billion or 116 % of their current GDP.

Although these projections are uncertain – as are all estimates – the implications for improved cognitive skills and human capital remain sizable, and the resulting value of successful school reform, authors assert, is still far greater than the costs of improvement (Hanushek and Woessmann, 2010).

3. Human Capital in Turkey

Turkey has both high human capital potential and many human capital challenges. If education is to fully develop young people to take their place in a thriving 21st century global economy, issues in the education system and specifically, teachers' own human capital and factors in their preparation programs will need to be addressed.

3.1. Turkey's Human Capital Potential

From a variety of perspectives, Turkey has high human capital potential and is worthy of significant financial investments. The World Bank (2011) considers Turkey as a high middle income country with Gross National Income (GNI) per capita of US \$667. About 18.1 % of Turks live in poverty (World Bank, 2011). Likewise, the United Nations Development Report 2009 observed that Turkey's human development index (HDI) increased between 1980 and 2007 by 0.93 % annually, ranking Turkey as 79 out of 182 nations (UNDP, 2009).

Similarly, in 2007, the Lisbon Council ranked Turkey second (after Slovenia) among Central and Eastern European countries in its ability to develop and nurture its human capital (although without this demographic dimension, Turkey would rank ninth) (Ederer, Schuller, and Willms, 2011). The reasons for Turkey's very positive outlook: a high birth rate, an increasing working-age population, and no large-scale "brain drain" or exodus of young and skilled workers to more attractive work opportunities in Europe or beyond. Turkey can depend on a youthful working-age cohort. In 2050, the Lisbon Council predicts, Turkey's working-age population will be almost as large as all other Mediterranean countries taken together; and Turkey will likely have 19 % of Europe's eligible workers – up from 13 % in 2007 – just as other European regions will lose demographic importance (Ederer, Schuller, and Willms, 2011).

Given its positive potential, Turkey is one of the World Bank's largest borrowers in the European and Central Asia region (World Bank, 2011). External donors have helped finance a large part of Turkey's education policy. Since 2000, the World Bank has funded approximately US \$900 million worth of education projects – especially to improve students' learning conditions in secondary education and improve educational quality among low-income children in the sub-provinces where enrollment rates were low (Eginli, 2010).

While today's human capital must compete globally, a nation's capacity to develop high quality human capital resides locally. A country's cities and regions have the responsibility to effectively enact the national policy. The clarity, scope, and coherence of the national policy coupled with the regional and local success in acting upon it largely determines how much human capital results, how effectively it is deployed, and how much value it will be able to create.

3.2. Turkey's Human Capital Challenges

Despite its high human capital potential, Turkey is experiencing serious difficulties making this a reality. These factors include low graduation rates and a large unskilled workforce with high youth unemployment, school-industry knowledge and skills mismatch, as well as cultural influences and social background inequities which impact children's educational quality and outcomes. Schooling plays a role in each factor. In this section, we will consider Turkey's human capital challenges and in the next section, we will explore the equity and teacher quality factors which contribute to these challenges.

First, Turkey has a low graduation rate, a large unskilled workforce, and high youth unemployment. In 2009, Turkey's upper secondary graduation rate was 55 %, tied with Mexico as the lowest of OECD countries (OECD, 2011). Turkey's low graduation rates contribute to a relatively large, unskilled workforce and high youth unemployment. During the recent global economic downturn (2007-2012), Turkish youth unemployment rose from around 10 % to about 18 % (Scarpetta and Sonnet, 2011). Likewise, the Organization of Islamic Cooperation (OIC) reports that

the Republic of Turkey (as well as the other OIC countries) has recorded higher average youth unemployment rates compared to the world average and the averages of other developing countries (SESRIC, 2012).

Second, Turkey has experienced a serious school-industry mismatch in the knowledge and skills its students are learning. For the most part, schools are not preparing students with the complex competencies and achievement they need to be competitive in the high-knowledge, high-tech Turkish economy. This is especially true in the manufacturing sector and for both secondary school and university graduates. Many tertiary graduates remain out of the job market, waiting until they can find work that aligns with their knowledge and skill sets or accept employment in fields unrelated to what they studied, over-educated and underutilized. This mismatch is evident in the European Labor Force Survey data which shows that Turkey is one of six OECD countries (the others are Chile, Greece, Italy, Mexico and Portugal) where tertiary graduates have a higher risk of unemployment than low-skilled youth (Scarpetta and Sonnett, 2011).

Third, cultural influences compromise Turkey's ability to fully develop all its human capital. Inequalities in Turkish education appear to be based in disparities of gender, region, and family wealth (Eginli, 2010).

Gender and regional inequities prevent some Turkish children from ever enrolling in school. For example, 7 out of 10 out-of-school Turkish children are unlikely to ever enroll in school; approximately 60 % of out-of-school primary school age children are girls (UNESCO, 2010a). Between ages 8 and 12, seven percent of girls never enroll in school compared with two percent for boys; and by age 15, young women's enrollment is almost 20 percentage points below male enrollment (Eginli, 2010). Although intensive efforts since 2003 have prompted a significant decrease in gender disparities in some provinces (Büyüköztürk, 2005), reducing the gender gap in schools from 7 to 5 percent (McLoughney, Fornara, Zavarko, and Neal, 2007), it remains a sizeable problem (McLoughney, Fornara, Zavarko, and Neal, 2007).

Many factors influence Turkish families to discourage young women from completing their education. Notably, traditional gender bias favoring men's and boys' needs over those of women and girls plays an essential role, with Turkish girls and young women typically remaining at home to enact their responsibilities for care giving and domestic work (World Bank, 2009; McLoughney, Fornara, Zavarko, and Neal, 2007; UNICEF, 2003). Likewise, many Turkish families value early marriage for young women over education (McLoughney, Fornara, Zavarko, and Neal, 2007). In addition, some families with serious economic needs engage their daughters in low-skill, income-producing child labor while their brothers receive an education (Duman, 2009, 2010). Practical and safety concerns influence some Turkish parents to keep their daughters at home rather than send them to schools which are far from home and which may have poor facilities without toilets or

running water (McLoughney, Fornara, Zavarko, and Neal, 2007; UNICEF, 2003). Some parents are reluctant to send their girls to coed schools, citing perceived safety reasons (World Bank, 2005). Meanwhile, many families in developing countries who educate their daughters influence them towards “female” careers such as Child Development and Education or desk jobs (World Bank, 2009), and school instructors can channel students into educational branches (tracks) according to gender, and employers tend to recruit workers according to gender preferences of the corresponding sector rather than according to employees’ professional skills and qualifications (Killcalp, 2011).

Parental socio-economic factors keenly affect their daughters’ education. More educated parents value education and are more willing to send their daughters to school. This is especially true if mothers are well educated, since they see the benefits of strengthening their daughters’ human capital. Family size is also a factor, with girls in larger families less likely to receive an education. In addition, since education and family income are highly correlated, educated and financially secure families are more likely to ensure that their daughters receive a good education (Duman, 2009).

Regional attributes also contribute to educational disparities across regions, provinces, sub-provinces, and individual schools (World Bank, 2005). Educational marginalization in the country’s eastern regions (where 21 % of the population has less than four years of education as compared with 2 % to 7 % in other regions), is particularly high among the Kurds who tend to be poor and speak Kurdish rather than Turkish as their primary language. Pre-primary enrollments are highest in the Black Sea Region (86.6 % for 4-5 year olds and 59.2 % for 3-5 year olds) while the figures are 18.5% and 12.9 %, respectively in Eastern Anatolia (Ministry of National Education, 2011).

Similarly, wide variations in equity among Turkish schools contribute to disparate outcomes. A UNESCO report (2010a) concluded that school differences account for 53 % to 70 % of the variations that contribute to the achievement gap. As in other OECD countries, Turkish students in urban schools tend to perform better than their peers in rural schools – more than 45 points after considering their SES background (OECD, 2010c). And regardless of their own SES upbringing, students attending schools with an economically advantaged peer group (among the top 16 % in the country) tend to perform better than those attending schools with more disadvantaged peers – equal to more than 50 score points, on average, or more than a year’s worth of education (OECD, 2010c). Students in southeastern Turkey have the fewest resources – human and material (World Bank, 2005).

Next, family social background inequities undermine the opportunities for all children to have a high-quality education. Turkey is an ethnically diverse society. To give children equitable learning opportunities, educators try to reduce the influence of a student’s socioeconomic background on their school performance. Although every country has performance differences related to students’ family

circumstances, certain countries accomplish this intervention more effectively than others. Despite the past decade's series of projects to improve equity and equality, Turkey's disadvantaged students are still less successful in making the learning gains needed to move beyond their background's limitations as compared with peers in other European nations (Eginli, 2010).

Likewise, throughout the school levels, family background creates or limits opportunities for educational quality and advancement (World Bank, 2011). Pre-primary education (ages 3 to 6 years), when children's brains are rapidly developing, is not compulsory; only 30 % of eligible children participate, and they are more likely to come from wealthier families (World Bank, 2011). In a similar vein, about two-thirds of students in science high schools (public or state boarding high schools with a curriculum focusing on natural sciences and mathematics which admit students based on competitive entrance exam scores) and half the students in Anatolian high schools (public or state high schools that admit students based on their high scores on a national high school entrance exam administered at the end of grade 5) – both of which teach many courses in German, English, or French to prepare students for university entrance – belong to Turkey's richest 20 % of families where at least one 15-year old resides (Uysal and Dinçer, 2009).

The lack of equitable learning opportunities affects how well and how much students learn. The 2009 PISA showed that Turkish students' socioeconomic and cultural backgrounds greatly affect their academic (reading) performance (OECD, 2010b). At the same time, in other OECD nations, such as Canada, Finland, Japan, Korea, United Kingdom, Austria, and Hungary, the impact of students' background and culture on their academic proficiency is less apparent – and these countries have relatively few students at the lower proficiency levels than Turkey does, despite the school they attend or their family backgrounds (OECD, 2010b).

3.3. Brief History of Modern Turkish Education

In 1923, Mustafa Kemal established the Turkish Republic and enacted a series of reforms which prioritized education as a way to leverage the nation's traditional social structure in a more contemporary direction and to build citizenship and national identity among varied subgroups. In 1924, Turkey began its contemporary education system by centralizing education under the Ministry of Education, closing religious schools, and opening new secular schools. At the same time, the legal system provided civil rights and equal rights for women. In the Republic's early years, Turkey's literacy rate was less than 10 % (Republic of Turkey Ministry of National Education, 2011). By 2010, Turkish adult literacy rate had increased to 89 % (96 % among men and 81 % among women) (UNESCO, 2010a). In 1952, Turkey became a full member of NATO and joined the Organization for European Economic Cooperation (OEEC) and the Council of Europe.

The Turkish educational system has both formal and informal parts. The formal education system includes the regular education provided to individuals in certain

age groups in schools designed with specific programs for children in those age groups in pre-primary, primary, secondary, and higher education institutions. Non-formal education has developed to assist the formal institutions and offer life-long learning for children and adults (Duman, 2009). At the present time, primary through secondary education is compulsory and free.

Education governance and funding in Turkey remains highly centralized (Tarman, 2010). The Ministry of National Education (MONE) is responsible for infusing contemporary models of education training for all its citizens with primary and secondary education and other institutes. It appoints teachers and administrators, selects textbooks and curriculum subjects.

In 1997, the Turkish Ministry of National Education extended compulsory basic education from five to eight years (Basic Education Law, No. 4306) and co-education became the norm (Koca, 2009). With its start of European Union membership in October, 2005, Turkey began a series of economic and social reforms (Eginli, 2010). In 2012, compulsory education was extended to 12 years (Law No. 6287) (Kasicki, 2012). In addition, MONE promoted lifelong education as a key to help individuals throughout the society adapt themselves to a changing world and rapidly changing professions (Republic of Turkish Ministry of National Education, 2005).

Increasing its children's access to education has been a Turkish success story. As of 2010-2011, Turkey had a student population of more than 12 million children. Approximately 11 million were enrolled in primary education and a little more than 1 million were in pre-primary education. In fact, pre-primary education enrollments doubled from 1999 to 2007 (UNESCO, 2010a). From 1971 to 2008, lower and upper secondary enrollments increased from 1.3 million students to 6.7 million students as the nation expanded compulsory education from five to eight years (UNESCO, 2011). According to the World Bank, 74 % of Turkey's adolescents were enrolled in secondary education in 2010 (World Bank, 2011). In 2009, tertiary enrollments in Turkey were 46 % of the total population in the five-year age group following graduation from secondary school, up from 38 % in 2007 (World Bank, 2011). Further, a government initiative with UNICEF in 2004 led to a significant reduction in gender disparity in some provinces (Büyüköztürk, 2005).

3.4. Equity Issues in Turkey's Education

Nevertheless, Turkey's high dropout rate and low employment rate reflect an education system which is not working well for many students. Although Turkey's best primary and secondary schools are among the world's finest, as PISA and other international assessments affirm (World Bank, 2005; OECD, 2010b), academic achievement of among the majority of Turkish students is moving more slowly. The overall quality of Turkish education is low.

International assessment results show that most Turkish students are not developing the basic language, math, science, and problem-solving skills during their first eight years of schooling (World Bank, 2005). A 2009 international assessment of learning among 15-year olds who were still enrolled in school showed the average 15-year-old in Turkey was performing one school year behind their average OECD peers in reading, math, and science skills, and about half of the Turkish 15-year-olds were at or below the lowest proficiency level as compared with roughly 20% average in other OECD nations (OECD, 2010b).

In addition to the inequalities in gender, region, family wealth, and variations in educational quality among schools, class sizes and student/teacher ratios in primary education and the practices for assigning students to academic programs and schools also contribute to low overall achievement and high dropout rates (UNESCO, 2010b).

First, class size and student/teacher ratios in primary grades limit student learning. For instance, in primary education, the student/teacher ratio in 2009 was at least 25:1 (OECD, 2011). In contrast, primary school student/teacher ratios in other OECD nations, such as Hungary, Italy, Norway and Poland average fewer than 11:1 (OECD 2010a). It is important to recognize that the 25:1 ratio represents an improvement, as the average class size in Turkish primary education dropped from 30 students per teacher in 2000 to 25 students per teacher in 2009 (OECD, 2011). By comparison, Turkey's student/teacher ratio in private primary schools in 2009 was about 18 to one (OECD, 2010c).

The research on class size and student achievement helps explain why the student/teacher ratio in the early grades matters. Improved student achievement in reading and math in grades preprimary through grade 3 (K – 3) tends to occur in smaller class sizes, 15 to 18 students, especially for minority and low-income students (Mitchell and Mitchell, 2009; Molnar, Smith, Zahorik, Palmer, Halbach, and Ehrle, 1999; Ehrenberg, Brewer, Gamoran, and Willms, 2001). Investigators speculate that this achievement increase may be the result of smaller classes giving teachers more instructional options and increased individual attention to students (Ehrenberg, Brewer, Gamoran, and Willms, 2001). The benefits of small classes in primary grades appear to be long lasting, making small class size for primary students an even better investment (Nye, Hedges, and Konstantopoulos, 2001, 2004). Some scholars suggest that the academic advantages evident in studies of small classes in primary grades can help students close the achievement gap between affluent and low-income students (Nye, Hedges, and Konstantopoulos, 2004; Molnar, et al, 1999).

Funding inequities comprise one reason for the large class sizes in early grades, despite the research that argues against it. Turkey tends to not invest resources – personnel and material – into schools with high-needs students. It is one of the few OECD nations (along with the United States) where socioeconomically

disadvantaged schools tend to have larger student-staff ratios and fewer basic resources (OECD, 2010b). Overall, Turkey invests a low share (around 4 % of GNP in 2004) of its national income into education (UNESCO, 2010a). By contrast, nations whose students' achievement scores cannot be predicted by their family income tend to place equal – if not more – numbers of highly effective teachers into socio-economically disadvantaged schools. Although attracting the highest quality teachers to disadvantaged schools is difficult, Turkey shows no significant difference between the schools' socioeconomic status and the percent of teachers with university degrees (OECD, 2010b). Paper credentials, however, are not a proxy for professional effectiveness on the job. It appears that Turkey lacks high numbers of effective teachers to meet all students' learning needs.

Next, the Turkish practices of channeling young students into academic programs based on their prior achievement and requiring them to pass high-stakes exams after primary school for acceptance into a high-quality academic high school (such as Anatolian High Schools, Science High Schools, or private schools) and from upper secondary school to an elite university set early limits on the types and quality of education available to Turkish students. These competitive exams separate children by prior achievement and enroll them in schools of varying academic quality that further widen achievement differences. By contrast, students who do not pass these competitive exams usually attend general public secondary schools or lower-prestige vocational schools with many fewer opportunities to continue their education and develop their human capital. Unsurprisingly, those students who begin school with the most fortunate family backgrounds and resources tend to achieve well early, score highly on exams, and advance successfully through the system.

Families with ample resources can afford the expensive private tutoring needed to help their children successfully compete for a place in a top-tier secondary school or prestigious university (Dinçer & Uysal, 2010). A large-scale, profit-oriented private tutoring industry helps prepare students to score highly on these competitive exams, available only to students whose families have the means to pay for such academic support (Tansel and Bircan, 2004; Tansel and Bircan, 2006; Tarman, 2010). Private tutoring centers are expensive and usually cost more than the average Turkish household could afford. Tansel and Bircan (2004, 2006) noted that Turkey's per-capita income in 2002 was US \$2,500 while the average private tutoring center's fee for preparing to take the university entrance examination was approximately US \$1,300. It would appear, therefore, that the quality and length of Turkish education depends largely on family resources – rather than effective teaching, relevant curriculum, and targeted academic interventions – to propel a diversity of students from primary school through university.

The connections between the high student/teacher ratios in primary classrooms which reduce the opportunities for many children to develop foundational reading and mathematics literacy, the early academic placement decisions based on

students' prior achievement, the high-stakes gatekeeper exams to qualify for high-quality secondary and university educations whose extracurricular tutoring only the well-to-do can afford, and Turkey's high dropout, high unemployment rates are clear. Since children who fail to make academic progress in school are at high risk for dropping out and entering the workforce without marketable skills and behaviors, overcoming socioeconomic barriers to achievement – and fully developing Turkey's human capital potential – is possible only with the right policies, practices, and sufficient and appropriately targeted resources.

3.5. Teacher Quality Issues in Turkish Education

Turkey's teacher workforce is under stress. The nation has a large youth population. Since the 2000-2001 school year, more than 137,000 new children have entered the school system annually at different levels of education, reflecting Turkey's efforts to ensure universal access to primary education (World Bank, 2011). In response, Turkey's teaching workforce in basic education has grown by approximately 50 % (550,000 teachers) over the past 20 years alone, and the World Bank estimates that the country needs to add at least 19,000 teachers each year to keep up with increasing enrollments (World Bank, 2011). The 2012 expansion of compulsory attendance to upper secondary schools only heightens this pressure.

Unfortunately, the urgent need to hire many teachers quickly tends to result in a lower average quality of the incoming teachers. In Turkey, rapidly increasing access to education often means overcrowded classes, teacher shortages, inadequate resource allocations, and some schools without enough teachers to teach different subjects (Tarman, 2010). Student-teacher ratios vary widely across the nation (World Bank, 2011).

Making the situation more difficult, the quality of Turkish teachers is low by international standards (World Bank, 2011). According to the World Bank (2011), the average Turkish teachers tend to be much younger (50 % are less than 30 years old while only 15 % of OECD teachers are under 30), with much less teaching experience, and a much lower quality as measured by educational background (88 % of Turkish teachers hold a Bachelor's degree and only 5.7 % have a Masters or Doctoral degree) than the average OECD teacher (31.6 % who have Masters or Doctoral degrees). Although advanced education degrees may not be a proxy for more effective teaching, they do represent a significant commitment to the education profession. More importantly, 45 % of Turkish teachers (and 25 % of OECD teachers) lack pedagogical preparation, 30 % of Turkish teachers arrive late to work (compared with 15 % for OECD teachers), and 38 % of Turkish teachers have higher rate of absenteeism (as compared with 30% of OECD teachers) (World Bank, 2011). In short, many of Turkey's teachers lack the professional behaviors, instructional skills, and work habits which promote effective teaching and learning.

Getting both the quantity and quality of needed teachers to all schools, especially those in the country's poorest districts, is a critical challenge. Recognizing this,

outside nongovernmental agencies such as the European Union and the World Bank affirm that economic growth depends on having a work force with higher skills and are pushing Turkey to improve the quality of its education system (World Bank, 2011).

To an extent, the mismatch between teacher quantity and quality and students' needs reflects the nation's weak professionalization of the teaching career. For example, pre-service preparation does not view teachers' pedagogical effectiveness as a priority. In 1982, certain teacher preparation programs expected teacher candidates to teach four lessons over eight weeks in actual school classrooms (depending upon the mentor teacher's trust in their capacity) while other teacher preparation programs required no real-world classroom teaching experience in order to become certified (Tarman, 2010). In 2006, a year of major teacher preparation reform, whether or not a teaching candidate had the opportunity for any actual student teaching depended upon the availability of university instructors (Tarman, 2010). Given this reality, education and governmental authorities recognized that newly hired teachers were not adequately prepared to lead their own classes (Guncer, 1998). The same may be true today.

Similarly, since 1998, all schools of education in Turkey have followed a standardized curriculum, but very few programs offer courses designed to develop the highly engaging instructional skills and knowledgeable pedagogy needed to help all students learn (World Bank, 2011). After graduating from a university program, candidates are eligible to enter the professional after passing a civil service exam; their scores determine whether they will be assigned to their preferred location. This creates an incentive for teacher preparation programs to "teach to the test" rather focusing its program on building teachers' professional capacity.

Turkish teachers also can receive teaching degrees in other programs, permitting access to classrooms without a firm understanding of teachers' professional ethics or practices.

As of 2010, Turkey had 154 universities, and 65 of them had Schools of Education – many created relatively recently and of widely varying effectiveness – to meet the increasing demand for teachers. Nonetheless, Turkey does not yet have a national system of standards and accreditation for universities and departments within them, regardless of subject area (Grossman, Sands, and Brittingham, 2010). A more complete history and description of current teacher education programs in Turkey can be found elsewhere (Tarman, 2010).

Once in the field, in-service training is insufficient to the number of teachers needing it. Professional development for practicing teachers tends to be infrequent, delivered in large seminars or convocations rather than on-site or "job-embedded." They do not make opportunities for practice, follow-up, feedback, or

reflection and pay no attention to evaluation of outcomes or impact (World Bank, 2005). With 20,000 teachers each year receiving professional development out of the 600,000 teachers who need it, the average Turkish teacher may only receive professional development once during a career (World Bank, 2011). Given these realities, the World Bank concludes, "The lack of a strong professional approach to the teaching profession in Turkey makes it hard to recruit, retain, develop and maintain a high-quality teaching force" (World Bank, 2011, p. 20).

In a related variable, the teaching profession in Turkey disproportionately attracts individuals from lower and middle income backgrounds (Aksu, Demir, Daloğlu, and Diraz, 2010). These teachers face heavy workloads and lack frequent or ongoing opportunities to improve their professional knowledge and teaching effectiveness. In turn, these professional realities discourage highly qualified students from selecting the teaching profession, and it makes it difficult for those who do enter the field to understand or adapt to new approaches (Gurkaynak, Üstel, and Gülgöz, 2003).

A combination of the profession's relatively low social status which affects the nature and number of teacher candidates, poor pre-service preparation, lack of access to learning resources while teaching, and the dearth of professional development opportunities to improve the quality of their instructional practices all contribute to low teacher quality (World Bank, 2011). Deniz and Sahin (2006) conclude that Turkish teachers lack the professional skills and knowledge to meet the educational goals of today's high-tech, information-based society. Recognizing this, the Turkish government has been working to reform pre-service and in-service teacher preparation since the 1990s (World Bank, 2011).

3.6. Improving Turkey's Teachers' Human Capital

"The most critical area for education policy improvement in Turkey is teacher quality" (Eginli, 2010, p. 22). Teachers in most schools lack the knowledge and skills to engage students' interests and excitement, teach interactively, or provide stimulating learning experiences that help students find the personal meaning and relevance to cognitively construct an accurate understanding of what they are learning. Pre-service teacher education in Turkey provides a strong dose of education theory but not many practical skills on how to actually teach in a classroom of students (World Bank, 2005). Neither is school-site leadership designed to support and advance improvements in educational quality, and the school-parent/community relationship is not developed sufficiently to allow them to press for improved educational quality or accountability (World Bank, 2005). As it currently stands, many Turkish students face the prospect of both their disadvantaged backgrounds and lower quality human resources in their schools.

A teacher's effectiveness has more impact on student learning than any other school factor. Many American, European, and international studies affirm the positive difference that effective teachers – that is, classroom instructors with the capacity to

lead students to sustained learning – have on students' achievement (Sanders and Horn, 1995; Sanders and Rivers, 1996; Webster and Mendro, 1997; Nye, Konstantopoulos, and Hedges, 2004; Rivkin, Hanushek, and Kain, 2005; Teddie and Reynolds, 2000). Effective teachers stimulate their students with challenging and meaningful (to students) academic content, frequently assess student learning and use the results to inform their teaching, organize their classrooms to keep students actively involved in learning activities, and instruct in an interactive manner (Danielson, 2007). Studies in the United States find that teacher quality includes verbal ability, subject matter knowledge, knowledge of teaching and learning, and the capacity to employ a wide scope of instructional strategies to meet student needs (Darling-Hammond, 2000).

Many studies support these assertions. In a study in one large American school district, Gordon, Kane, and Staiger (2006) found the difference between the performance of a student assigned to a top- rather than a bottom-quartile teacher in terms of effectiveness averaged 10 percentile points on a standardized math test. In another investigation, Rockoff (2004) estimated that differences in teacher effectiveness accounted for up to 23 % of the variation in student performance. Effective teachers have both the content knowledge and the pedagogical skills to ensure student learning. But while teachers' thorough knowledge of the subjects they teach is necessary, it is not a sufficient condition for high quality teaching and learning (Kaplan and Owings, 2003). Both subject matter knowledge and knowledge of effective pedagogy strongly correlate with teachers' classroom performance and their students' achievement (Guyton and Farokhi, 1987; Weglinksy, 2000). What is more, research shows that teachers' instructional preparation can positively impact student achievement – it can be more important than class size, overall spending, or teacher salaries. Darling-Hammond found that teachers' professional preparation accounts for 40 to 60% of the total achievement differences after considering students' ethnicity and family wealth (Darling-Hammond, 2000).

If Turkey is to improve its workforce human capital, therefore, it may well begin with increasing its teachers' human capital. Teacher preparation in Turkey needs to be redesigned to create teachers who are effective in helping students learn the knowledge and skills essential to function well in an increasingly complex and competitive global economy. Teachers must be able to grow, demonstrate, and refine their own high level skills in problem solving, analysis, synthesis, and evaluation during their preparation programs if they are to be able to develop these capacities in their students. They must be able to recognize and assess students' personal needs, interests, and learning skills – and use these factors constructively in teaching– if they are to help their students learn.

Although the World Bank funded a National Education Development Project with a US \$177.2 million loan between 1994 and 1999, and selected faculty and research fellows received grants to study abroad with the intent to improve primary and secondary school quality by revising and upgrading pre-service teaching preparation (including

curricula, textbooks, and pedagogical material), Turkish policy does not see its teachers as one of the key dimensions for improving education (Eginli, 2010). This significant oversight bodes poorly for increasing Turkey's human capital because "better teachers mean better students, better skills and better employment" (Eginli, 2010, p. 21).

Contextual factors also weaken teachers' human capital. Issues of supply, equitable distribution, and cost of highly effective teachers; appropriate curriculum and standards; number of instructional hours in the school day and year; and the types and amounts of available teaching and learning resources remain serious policy and practical concerns (Mulkeen, 2010). At the same time, the "cumbersome structure" of the Turkish education establishment deserves attention. While Ministry of National Education has comprehensive authority over curriculum, educational materials, teacher assignment, school facilities, equipment and oversight, it does not have a role in selecting pre-service teachers into teacher education programs, designing their professional preparation, or controlling their entry into the profession (Eginli, 2010). Viable coordination between centralized decisions and resources and local needs are often lacking. Given the present status of Turkish education across the spectrum, improving teaching quality will continue to be a challenge (UNESCO, 2011).

4. Recommendations

Recognizing teachers' importance to student learning and human capital development and acknowledging the current weakness in its own teachers' effectiveness, the Turkish Ministry of Education has begun reforms in pre-service and in-service teacher training (World Bank, 2011). To this end, the following recommendations concern increasing teaching quality and expanding equity may be helpful.

4.1. Connect Theory to Practice in Teacher Preparation

Teacher preparation needs to include relevant and concrete links, conceptually and behaviorally, between what teacher candidates learn in school and how they teach in their own classrooms. Teacher candidates need specific content knowledge, an understanding of how children of different ages learn best, an array of effective pedagogical skills to work successfully with a diverse range of children, and a clear code of professional ethics to guide their decisions about workplace behavior. They need multiple opportunities to practice these behaviors in real-world classrooms under expert supervision and receive detailed, accurate, and timely feedback on their effectiveness before – and after – they receive teacher certification. At the same time, meaningful reform would include making teacher preparation standards comparable to those in other OECD nations.

4.2. Provide Career-Long Professional Learning to Practicing Teachers

Once employed as teachers, in-service opportunities need to be re-imagined as coherent, continuous chain of professional learning, tying teacher preparation, actual student teaching experiences, and ongoing occasions for learning on-the-job in ways

which help teachers boost student learning and achievement (Fullan, 1995). In-service opportunities should be designed and enacted in accord with internationally-recognized best practices (Darling-Hammond and Sykes, 2003; Fullan 1995). Increasing the professionalism of teaching careers in Turkey in these ways will help educators learn the technical expertise, work behaviors, and habits of mind that will enable them to be effective in generating student learning and achievement.

4.3. Provide Active Support for New Teachers

The recent expansion of compulsory education from 8 to 12 years brings a new influx of inexperienced teachers, many of whom will need intensive and active on-the-job induction to the profession. Many countries have systematic induction policies to ease the transition from university to public school classrooms (Stoel and Thant, 2002; Wang, Coleman, Coley, and Phelps, 2003; Ingersoll and Smith, 2004). Unless new teachers receive vigorous professional support during their early days in the classroom, the mismatch between their teacher preparation and their actual day-to-day teaching may cause them considerable frustration and disappointment. In the United States teaching has an unusually high attrition rate, with as many as 50 % of new teachers leaving the field within their first five years on the job (Ingersoll and Smith, 2004; Wong, 2004). Without technical, cultural, and emotional support at their careers' start, many qualified teachers may leave the profession before they master the skills and attitudes needed to be effective educators. Children's learning will suffer.

4.4. Invest in Smaller (15 – 18 student) Primary School Classes

Especially when working with low-income and minority children, provide a student/teacher ratio in accord with the research consensus. These children need a wider range of teaching practices and more individual teacher attention if they are to master the essential reading and mathematics literacy skills needed to advance through upper secondary school graduation and become effective employees and able college students.

4.5. Create New Incentives to Attract and Retain Effective Teachers

The Ministry of Education can create meaningful incentives to interest talented and able individuals to view teaching as an attractive career choice and remain in the profession. These might include offering performance pay, new roles and responsibilities for teachers which reward their expertise and measurable impact on student learning while they remain in the classroom, or placing cadres of effective teachers and leaders in high-needs schools. Increasing financial incentives brings risks, but the discussion of how to incite and reward the most effective teachers and attract others like them has merit and deserves serious policy attention (World Bank, 2011).

4.6. Improve Teacher Equity

Although Turkey has substantially expanded access to basic education, the equitable distribution among schools of sufficient numbers of high-quality, highly effective

teachers relatively low as compared with other OECD countries (OECD 2011). As a result, students coming from economically difficult backgrounds are not making the same learning gains as their more affluent peers as measured on international achievement tests. The preparation and equitable distribution of sufficient numbers of effective teachers and school resources (including class size at early primary grades) need urgent attention if all Turkish students are to fully develop their human capital. Although addressing these equity issues are likely to be costly, the costs of leaving inequities in teacher effectiveness and distribution as is also costly in lost human capital, the overall economy, and individual well-being.

4.7. Address Cultural Issues That Limit Human Capital Development

As Turkey seeks economic and political parity with European or other first-world nations, it cannot continue to neglect its young women's undeveloped human capital. Meeting this goal means increasing the enrollment and retention of girls and young women into formal and informal education settings, providing them with high quality academic and/or vocational education, and offering young women and housewives the household management skills, entrepreneurship skills, and marketing competences they need for lifelong learning. Similarly, policy makers need to identify the children who are currently not in school and the barriers that keep them from participating in education so they can focus interventions to increase their school enrollments and expand human capital.

4.8. Develop a Quality Assurance Framework for All Schools

In Turkey, educational quality varies school-to-school and within educational levels. Developing a framework to ensure quality criteria and outcomes for each educational level of public and private schools is an essential step in providing a range of high-quality educational choices. This is especially important at the pre-school level where many options are available and at the upper secondary level where compulsory education has just been expanded from 8 to 12 years. The government must also ensure that schools increase their physical capacity and equip them with modern materials. Doing this will require that technical – rather than political – criteria determine school upgrades and needs (World Bank, 2005). It will also require the National Ministry and local authorities, with staff, parents, and community partners, to raise every school up to these standards. The government, local authorities, principals, teachers, and parents can then use these standards to evaluate their own schools, identify and address what is needed, and improve learning conditions across schools to reduce educational disparities (World Bank, 2011).

4.9. Build Capacity among Policy Makers, University Faculty, and Principals

Increasing teachers' capacity is essential but not sufficient to produce a cadre of effective teachers. Teachers cannot stimulate student interest, make the

curriculum personally meaningful and relevant to learners, guide students to think critically with information, and use what they learn to solve problems unless the teachers have sufficient opportunities to experience these same approaches as university students. To make all this happen, policy makers and government officials can develop keener views of their roles; learn how to provide adequate, appropriate, and collaborative technical and operational support; identify ways to enact robust monitoring and evaluation systems; discuss better and more equitable ways to finance education across the country; learn how to influence a broad range of stakeholders; recognize how to use education to generate political capital; and accept the trade-offs needed to improve education as an investment in human capital (Eginli, 2010). University faculty who prepare teachers and principals will need to learn, use, and teach these same instructional practices that teachers will need in their own classrooms. At the same time, principals, parents, and community need capacity building through targeted in-service opportunities to educate them about what research-affirmed effective teaching looks and sounds like and its effects on student achievement – and on students' life options – so they can actively support teachers who use them (Sahin, 2004).

Such capacity building may require outside expertise, such as partnering with an internationally-known and well respected teacher and principal preparation and educational policy and planning programs.

5. Conclusions

As an investment in human capital, Turkish education is a work in progress. During the past 15 years, Turkey has made sizable and noteworthy advances in increasing educational access, but more remains to be done. As with other upper middle income countries, Turkey must accept the challenge of creating a high-quality education system which generates more graduates with higher skills – regardless of their family backgrounds – to succeed in an increasingly complex, competitive, and global labor market. Its teachers must be as effective as those in other OECD countries in raising every student's learning, even those from disadvantaged circumstances. Improving teaching quality and ensuring its equitable distribution among all schools is one essential key to unlocking better educational and economic outcomes. Likewise, professionalizing teaching from pre-school through university levels through powerful teacher education reforms is an essential means for expanding Turkey's human capital. Collaboration among varied stakeholders – government, academia, policy experts, civil society, and major employers – will be needed.

Education and training policies play key roles in equipping youth with appropriate skills in a rapidly evolving labor market and facilitating the transition from school to work – as well as from teacher preparation coursework into real-world classroom instruction.

Contemporary evidence shows that building a more effective education system and teaching practices is possible. Strong economic gains to Turkey and other OECD nations from an improved education system remains a potentially achievable goal. Asserting that changing education to improve students' human capital as future workers is "too difficult" or "too expensive" suggests that the nation is willing to give up enormous economic and related gains. The cost of inaction may be higher.

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