

ECONOMICS UNDERSTANDING OF ALBANIAN HIGH SCHOOL STUDENTS:
FACTORS RELATED TO ACHIEVEMENT AS MEASURED BY TEST SCORES ON
THE TEST OF ECONOMIC LITERACY

By

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ABSTRACT

This study examined the level of economics knowledge, overall and on specific economic concepts after Albanian 11th grade and 12th grade students completed their required economics course and investigated how economics knowledge differed by student and teacher characteristics. There were 1,509 students who participated in this research from 12 high schools in Tirana, Albania during the 2008-2009 academic year. The findings showed a significant increase of students' economics knowledge after they completed the required economics course. Multiple regression analysis was used to analyze the relationship of student characteristics (gender, socioeconomic status, curriculum track, type of school), and teacher characteristics (age, gender, years teaching economics, type of training) to post-test scores on the TEL. The model accounted for 35 percent of the variance on the post-test scores of TEL, and all variables except socioeconomic status, teacher's age, and years teaching economics, were significant.

It is hoped that the findings of this study will be useful to Albanian educators, and institutions related with teacher training.

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CHAPTER ONE

INTRODUCTION

Civics and economics education are key elements in building a democratic and free market system. Attaining and learning to use this new knowledge are important goals of the transition period for countries that rejected communism. Albania, one of the former communist countries, has been in transition since 1991 and continues with reforms in every aspect of social, political and economic life. Success of all this reform will depend on education, especially in civics and economics.

The focus of this research is the level and quality of economic education in Albania, 18 years after the start of the transition to a democratic market-based system. More specifically, what is the level of economic literacy of high school students in Albania after 18 years of transition toward the free market? The level of economic literacy and the factors related to it among students in public and private high schools in Tirana, the capital of Albania, will be studied and analyzed.

In every country, economic education is an important part of education because it enables students to understand their roles in their economic system, as consumers, citizens and future employees or employers, and it helps them to succeed in playing these roles. “Without this understanding .., citizens would have difficulty in making informed choices in their personal and political lives” (Marlin, Jr., 1991, p.6).

The mission statement of the Council for Economic Education emphasizes this importance:

“The Council for Economic Education envisions a world in which people are empowered through economic and financial literacy to make informed and responsible

choices throughout their lives as consumers, savers, investors, workers, citizens, and participants in our global economy”(The Mission of the Council for Economic Education, 2009, para.1).

The focus on economic education at the pre-college level in the U.S. began in 1949 with the formation of the Joint Council on Economic Education (now The Council for Economic Education). The Council for Economic Education (The Council) program’s currently reach about 150,000 K-12 teachers annually serving 15 million students, and assists 2,600 school districts with comprehensive programs in economic education through its network of state Councils and approximately 275 University Centers for Economic Education, based at universities and colleges in United States (About Us, Description, The Council, 2009, para.3).

The specific foci of economic education have changed over the years since the founding of The Council. In the 1950s, the concern was establishing economics courses in high schools; In the 1960s and 1970s, discussion centered on the appropriate content for high school economics and design of teacher education in economics through pre-service and in-service programs. In later decades a major focus of research was the level of knowledge of high school students and teachers and the factors that influence the learning of economics. Research has isolated factors that have shown a significant effect on achieving economic knowledge such as economics instructional methods, the type of the course such as economics or social studies with economics, teacher’s course work in economics, student personal characteristics such as intelligence and gender, school characteristics and demographics such as urban or rural, region of the school, and socio economic level (Walstad & Soper, 1989; Strom,

1979; Watts & Bosshardt, 1990; Lynch, 1990; Becker, Greene and Rosen, 1990; Peterson, 1992; Borg & Shapiro, 1996).

Although there is likely continued room for much improvement in economic education at the secondary level in the USA, it is well established with a developed network for training and research. Economic education in Eastern Europe and the former Soviet Union is much newer and less developed.

Economic Education in East European Countries

In the late 1980's and early 1990's there arose a new rapport among eastern and western countries as the "cold war" between capitalism and communism ended. These changes created a new political and economic map of the world. The Soviet Union became 15 independent countries and East European countries began a major transformation. This transformation requires a long time, radical reforms in politics, economics and social aspects and a great effort in education. Preparing people to function in a new economic and political environment is a difficult task. Enabling individuals to be independent and make informed decisions as consumers, investors, workers and voters, requires, among other skills, economic knowledge, such as how a market system works and individual's roles in a democratic market system.

"To take an active role in the transition process, economic policymakers, business leaders, government officials, and others need a thorough grounding in market-based economics. This requires strengthening economics education and providing support for qualified economists to teach economics at all levels and to carry out high-quality research and policy analysis"(Pleskovic, Aslund, Bader and Campbell, 2002, p.1).

Much of the responsibility for students learning economics falls on the education system and its teachers. On the other hand, at the time of the transition, teachers in the former communist countries had little formal training in market economics or materials from which to teach the subject. Both Watts & Kovzik (2002) and Brue and MacPhee (1995) reported that teachers under communism had very little, if any, knowledge of how market or capitalist systems work. Western textbooks could help them, but could not provide enough knowledge for them to teach well. Further, a lot of faculty members resisted major changes and uncritical adoption of western concepts. Younger faculties were more flexible, but the bureaucracy and old system were hard to reform.

To help the East European countries cope with the difficulties and prepare them for the new challenges that the free market place offers, many programs were launched from countries with experience and economic potential such as the U.S. and Western Europe. In Albania, the two major organizations providing assistance were Junior Achievement and the Council for Economic Education. Junior Achievement, which was started in 1925 in Springfield MA, uses volunteers to teach economic and entrepreneurship content to students in school and after-school programs. It has programs in 156 countries of the world. Albania is one of the countries, where JA Albania started as a joint effort of USAID and JA-Young Enterprise Europe (Yearly report of JA Albania, 2007).

The other organization offering assistance in Albania was the Council. Beginning in 1994 the Council began offering teacher training programs in Eastern Europe and the Former Soviet Union. These programs were supported by grants from

the Soros Foundation and the U.S. Department of Education, carried out in cooperation with the U.S. Department of State. The Council courses, seminars and workshops have now been offered in 34 former Communist countries. For example, in ten years from 1995, when the Training of Trainers program was launched, until 2005, these programs trained approximately 1,100 educators from 34 countries (EconomicsInternational, The Council, 2006, para.1).

Albania was one of the countries participating in the Council's programs. From 1997-98 until 2005-06, there were 16 participants trained in the Training of Trainers Program; from 1998 to 2001, there were four educator-participants in the Training of Writers Program¹; from 1999 to 2003, four educators have participated in study tours focusing on economic education in the U.S. In 2001, the Council conducted a Teacher Workshop in Tirana for 38 Albanian teachers of economics, and in 2002, the Council monitored another Teacher Workshop in Saranda for around 40 Albanian teachers of economics (The Council, 2008).

In 1991 the rejection of communist dogma put Albania in the broad group of East European countries in transition from a planned to a market economy and from a political system ruled by a single party to political pluralism. The demise of the Communist system was followed by severe economic shock and by a period of chaos. The state command economy collapsed during the winter of 1991-1992; inflation rose

¹ The Training of Writers Workshops are conducted by The Council for U.S. and International educators. They serve the needs of teachers in emerging market economies for instructional materials to reflect the specifics of their own countries. The Training of Trainers Program is offered by the Council to international educators who will become trainers of other teachers in their countries, who, in turn, will reach the students in those countries and increase the level of economics knowledge of these students.(The Council, 2009)

as high as three digit levels; the budget deficit increased dramatically; and the external debt multiplied (Tendjoukian, 2007).

In Albania, market economics in the school curriculum was introduced by the Ministry of Education in 1991. Before 1991 economic education consisted of “political economy” designed to prepare students to work in a command system. Under the 1991 changes, market-based economics was one of a group of new Western-style social sciences to be taught at the pre-university level. Other subjects included civil society, human rights and responsibilities, education for peace, democracy in action, citizenship and law, and environmental education issues (Myteberi, 1999).

In 1994, Junior Achievement’s “Applied Economics” was the first economics course introducing free market knowledge into Albania’s high school curriculum. In 1993 the “Applied Economics” textbook was published in Albanian (Shapiro, 1987). In 1998, a revised Albanian version of “Applied Economics” was published, which included more examples relevant to Albanian society. In 2002 a new textbook for high school use with Albania authors was published. Today, economics is a mandatory subject in 11th grade in public high schools in Albania. In the new curriculum which will be implemented in school year 2010-2011, economics is an elective required course, in 12th grade instead of 11th grade where it stands now in public high schools (IKT, 2008).

In addition to new textbooks and teaching materials, providing subject-matter training in market-based economics to teachers has been important. There is strong evidence from the past 40 years of research in the U.S. that supports specialized teacher

training and instructional materials as important factors in improving the economic understanding of high school students (Allgood and Walstad, 1999; Becker, Greene and Rosen, 1990; Bosshardt and Watts, 1990). Research done in transition countries (including Albania) shows the same results as U.S.-based research, that is, support for teacher training and instructional materials as important factors in improving economic understanding and knowledge (Pleskovic, Aslund, Bader, Campbell, 2000; Saunders, Rebeck and Saunders, 2004) Some problems with economic education today in Albania correlate to problems the U.S. experienced during the 1960s. To that point in the U.S. there had been little teacher training at the pre-service or in-service levels and there was a lack of high-quality instructional materials (Walstad, 1992).

Research Purpose and Questions

To date, there has been very little research to evaluate the outcomes of market-based economic education efforts in Albania, specifically to evaluate what factors actually relate to gains in student knowledge during their required high school economics course. The purpose of my research was to investigate the level of student knowledge in economics before and after the required economics course and to identify the factors that are related to gains in student knowledge.

In this research three major questions were studied:

1. What is the level of economics knowledge, overall and on specific economic concepts after Albanian 11th grade and 12th grade students complete their required economics course?

2. How does economics knowledge differ by student characteristics such as gender, socioeconomic status, curriculum track and type of school?
3. How is economics knowledge related to teacher characteristics such as teacher' gender, type of economics training, teaching experience and age?

The subjects of the study were Albanian 11th and 12th grade students. The schools selected for the study are 12 high schools assigned to the study as a result of the researcher's process of gaining permission from the Board of Education of the city of Tirana. The subjects were pre- and post-tested on their economic knowledge at the start and end of 11th grade economics. The test instrument was the 20-item short version of the *Test of Economic Literacy, 3rd Edition*, a normed and standardized, widely used instrument (Walstad & Rebeck, 2001). Students and teachers were also be asked to complete questionnaires designed to provide information on the independent variables that were hypothesized to relate to students' economic knowledge. The data of the pre test was collected in the first month of the 2008-2009 academic year, and the post test data was collected in the last month of the school year.

The report of this study is organized as follows: Chapter 2: *Literature Review* summarizes and synthesizes the relevant research in two parts, the history of economic education in Albania during the first 17 years of transition and the related research on factors associated with high school student knowledge of economics. Chapter 3 presents the research methodology; Chapter 4 gives the findings of the research; and Chapter 5 presents conclusions and implications for further research.

This study is one of few conducted in the field of education and economics education in particular in Albania and will be helpful to teachers, the Ministry of

Education and Science (MASH), and the Albanian Institute of Curriculum and Training. It should be helpful to other organizations that support economic education in Albania through teacher training and development of teaching materials. In addition, it can serve as a foundation for future research in this critical area for a successful transition.

CHAPTER TWO

LITERATURE REVIEW

This chapter is divided into three parts: the first part gives an overview of Albania's economy and a general review of education in Albania, particularly, economic education, its evolution, the factors and actors related to it; the second part investigates the research on economic education done in countries in transition; and the third part describes research on economic education at the secondary level.

Albania's Economy, Education, and Economics Education

The Economy

Albania, a country slightly smaller geographically than Maryland, located in the Balkans with 3.6 million people, is a poor country compared with other countries in the region. In 1990, Albania emerged from 46 years as the most isolated Communist system. From 1990 until 2000 the real GDP grew an average 4.3 percent per year. That growth rate occurred despite a strong recession of 1996-97 caused by the crash of pyramid financial schemes. In 1995 per capita GDP in Albania was the lowest among other Balkan countries (2,518 USD) (Audet, Boccanfuso, Makdissi, 2006, p.3). After the crash, the average annual growth of GDP from 1996 to 2006 increased to 5.9 percent; and the expectations for 2006 to 2010 was 6.0 percent (World Bank, 2008).

Per capita GDP in 2008 was \$6,000(The CIA World Fact Book, 2008).However, the gray or underground economy in Albania is as large as 50 percent of official GDP (2007 estimation from the World Fact Book 2008) so per capita GDP is really much larger. The official unemployment rate was 13 percent, but may exceed 30 percent (The CIA World Fact

Book, 2008).

The transition for Albania has been very difficult. The country went through radical changes and reforms. The two major political parties in Albania are the Democratic Party which was found in December 1990, and the Socialist Party (former Communist Party). The Democratic Party led Albania from 1992 to 1997 undertaking major reforms which transformed the country from a backward economic system to a free market system. The reforms were interrupted by the collapse of the pyramid schemes which turned the country into total chaos and caused most Albanians to lose their life savings. This situation was exploited by the Socialist Party which returned to power by violent protests. For the next 8 years Albania did not have any significant progress due to corruption and poor governing. In 2005 the Democratic Party returned to power and is successfully leading Albania toward membership in the European Union (EU). The platforms of both parties are to integrate Albania among the developed countries of the European Union. The strategic goals for the current Albanian government are: "reforming public administration, strengthening the rule of law, fighting corruption, improving the business environment, and pursuing the ultimate goal of joining EU and NATO" (Country Snapshot, Albania Economist Intelligence Unit, para 1, n.d.).

The political and economic achievements of Albania are summarized in the IMF Country Report (2008) as follows: "In recognition of economic and political achievements, a Stabilization and Association Agreement with the EU was signed in 2006 and an invitation to join NATO extended in the spring of 2008".

Stabilization and Association agreements are part of the EU Stabilisation and Association Process (SAP) and European Neighbourhood Policy (ENP). At present, the

countries of the western Balkans are the focus of the SAP. Specific Stabilization and Association Agreements (SAA) have been implemented with various Balkan countries which explicitly include provisions for future EU membership of the country involved”(Stabilisation and Association, para 1, 2009).

“Albania's relationship with the North Atlantic Treaty Organization (NATO) began in 1992 when it joined the North Atlantic Cooperation Council. In 1994, it entered NATO's Partnership for Peace, which began Albania's process of accession into the alliance. In 1999, the country received a Membership Action Plan (MAP). The country received an invitation to join at the 2008 Bucharest Summit and is expected to become a full member in April 2009” (Accession of Albania to NATO, para 1, 2009).

The Transition Report of 2008 “Transition Growth” published by EBRD (European Bank for Reconstruction and Development) gives a positive evaluation for reforms undertaken by the Albanian government especially in the areas of business environment, tax cuts and support of economic growth. Intensive actions against fiscal evasion and corruption were the most important factors related with the development and the stability of the country. From Transparency International, which monitored 181 countries for the index of corruption perception, Albania moved up to 86th place from 135th place ranked one year ago (Transition Report, 2008, para 1).

The forecast from the IMF Country Snapshot of Albania's economic conditions for 2008-2009 was that the real GDP growth will continue at 6 percent annually, with inflation at rates of 3.25 percent. The annual budget deficit will still be high at current levels of 9 percent of GDP. On the negative side, there are energy problems, and slow euro zone economic growth. In July 2008 the IMF forecast 15 nations of the European Union (EU) to

have a slow economic growth rate of 1.7 percent in 2008 and 1.2 percent in 2009. Albania, as part of Europe, is likely to be negatively affected by the euro zone slow economic growth (IMF: Europe hit by major shocks, growth to slow sharply, 2008, para.1). Energy power problems in Albania have continued for a long period of time. Depending mainly on hydro power and using energy from power plants built during the communist era, Albania has suffered from blackouts due to lack of reconstruction and mismanagement, as it has been trying to cope with the high demand of the consumers who are using more power than before 1990. However, there have been major improvements in creating new energy resources, such as new power plants along various rivers of the country during 2005-2009. The future will be even better based on the new strategic plan that the government will build more hydro power plants throughout the country and possibly a nuclear power plant (Summary and Action Plan, Energy Ministry of Albania, n.d.). “The ultimate vision is for a private-sector dominated and diversified electricity sector that is fully integrated into the liberalized southeastern European Market” (IMF Country Report No.08/128, 2008, p.8).

The Education System

Before 1990, education in Albania was organized to meet the productive needs of a command system and to promote the ideology of an authoritarian communist regime. The social sciences used Marxist-Leninist ideology as the only way to explain all aspects of life. This ideology was used to keep people under the dictatorship and to legitimize the power of the Communist party of Albania. There was no promotion of individual freedom and independent thinking. Considering this situation, change toward a free market system and building a democratic society required deep reforms in the education system in Albania. For example, the social sciences curriculum had to be changed to be more similar to the

curriculum in free nations, such as the United States and Western European countries. Education reform during the 1990's changed the curriculum only partially due to lack of resources to support new teaching materials, together with other problems such as financial pressure and social instability. Overall, the education system worsened in several ways: education spending fell, and the response to fiscal pressure and low enrollment rates caused a reduced number of teachers, classes and schools. The reduction of schools caused the education system in Albania to become less accessible to students in rural areas and to those of low-income families. In 1990, the Albanian government closed about 90 percent of the vocational schools in the country. Most of the schools were agricultural judged to be of low value (Berryman, 2000). During this period of time, the government shifted some of the cost to the parents such as, books and other learning materials, in order to limit the educational spending. The low income families could not afford these school costs, which forced the youth to work rather than attend school in order to support their families (Palomba & Vadopivec, 2001).

The World Bank report (World Bank, 2004) helps to illuminate the problems in education. Among other problems, Albania has had a low rate of enrollment in secondary education. From 1989 to 1995 the enrollment rate in secondary education dropped by 50 percent. This resulted in a serious constraint to Albania's economic growth in the long run (World Bank, 2004). The data show the difference in the enrollment rate between non-poor and poor families. While only 50 percent of the children from non-poor families enrolled in secondary education, less than 20 percent of those from poor families enrolled (Rashid & Dorabawilla, 1999). According to Hazans and Trapeznikova (2006), factors with a significant, positive relationship to a student's propensity to enroll in high school education

are parental education, and close geographical access to secondary schools and Universities. While the effect of the number of siblings in the family, gender of siblings, grandparents living in the household is negative.

Albania started the transition with high rates of enrollment at all levels of education compared with other planned economies, especially with neighbors such as the former Republics of Yugoslavia. In 1990, the reported enrollment rates were 100 percent for basic education and 80 percent for secondary school (Berryman, 2000, p.14). Enrollment structure also changed. Two major forms of secondary education were vocational public schools and general public high schools which experienced a big change in enrollment. Vocational public schools experienced a sharp decline in enrollment rates after 1990. On the contrary, the public general high school experienced a great expansion in enrollment, from 49 percent of total secondary enrollment in 1990 to about 84 percent of total secondary enrollment in 2000 (OECD, 2003).

The enrollment rates before the 1990's in Albania and other countries ruled by Marxist- Leninist ideology, measured only the conventional literacy. There are four levels of literacy; conventional literacy, functional literacy, cultural literacy, and critical literacy. Conventional literacy is the basic level of literacy "the ability to read and write" (Hornby, 1999, p.687). Critical literacy is the high level of literacy which means not only reading and writing but understanding the world and acting to change the social relations from oppression to freedom. Critical literacy was very low in Albania before 1990's. Critical literacy is a very important level of literacy in a democratic and free market system (Tozer, Violas & Senese, 2005). Critical literacy was what Albania was missing for a long period of time under communism. Critical literacy was promoted and supported in Albania after 1990's

especially with reforms on the system of education.

During the transition period teacher qualification was another problem. “ In 1998-99, 90 percent of preschool teachers, 90 percent of elementary or basic school teachers, and 4.3 percent of secondary school teachers did not have appropriate education” (OECD, 2003, p.15). Some of these teachers had only a high school diploma and some were not specialized in the subjects that they were teaching.

Public spending on education as a share of GDP dropped from four percent in 1989 to 2.7 percent in 1999. ”The spending on education as a share of total public spending increased between 1990 and 1994, remained stable from 1995 to 1997 and than dropped in 1998 and 1999” (Berryman, 2000, p.VI). Education spending as a share of total public spending was around 11 percent from 1995 to 1997; then from 1997 to 2001 it dropped to 10 percent; and in 2002 it increased slightly to 11.3 percent (Ministry of Education and Sciences, 2004 ; World Bank, 2005). “Public expenditures in education as a percentage of GDP were 3.3 percent in 2001 and remained a stable percentage of 3 percent from 2002 to 2004” (INSTAT, 2005, p.24). Those percentages were 3.1 in 2006, 3.3 percent in 2007 and is 3.5% for 2008, (MASH, 2008) which shows generally a slight increase. The education budget was allocated to two broad categories, staff compensation and all other, such as teaching materials, maintenance, welfare services and textbooks. In 1998, 83 percent of educational expenditures were going for wages of teachers and other non-teaching staff which was the highest percentage among other Eastern and Western European countries. The priority was given to teacher’s compensation leaving the other category as a second priority (Berryman, 2000).

In 1998, spending per student relative to per capita GDP was 10 percent for the per-

elementary school level, 12 percent for primary and lower secondary, 17 percent for upper secondary and 69 percent for tertiary level. The spending per student in Albania at the primary and secondary levels is close to the spending per student average of OECD (Organization for Economic Cooperation and Development) countries, but the spending for the tertiary level is higher for Albania than the average of OECD countries, and these results can be explained by the reduction of enrollment rates in all levels during the transition (Berryman, 2000).

The system of education in Albania is organized according to the UNESCO recommendations defined in the "International Standard Classification of Education 1997" (ISCED-97). "ISCED was designed by UNESCO in the 1970's to serve as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally. It is approved by International Conference on Education (Geneva 1975) and endorsed by UNESCO General Conference (Paris 1978)" (ISCED 1997, UNESCO-UIS 2006, p. iii)

- Pre-elementary school for children 3-5 years old with non-compulsory attendance.
- Basic education for children between ages 5 or 6 and 15 or 16 years. Basic education is 9 years of schooling, and it is organized in 2 levels (1) lower level of six years of school, and (2) higher level with three years of school.
- High school education for children from 15 to 18 years of age.
- Post high school education (non- university) to prepare students for further university and non-university education. It consists of pre-degree foundation courses and short vocational programs. The length is from 6 months to 2 years.
- University and non university education; -Includes Bachelors Degree and Masters

Degree. The number of school years in this level varies from 3 to more than 6 years.

- Post-university education, for example Ph.D. (INSTAT, 2008)

Education in Albania is headed by the Council of Ministers (CM). Ministers are appointed by the Prime minister and serve for a term of 4 years. The CM recommends educational policies to the Parliament, which enacts them into law. The CM ensures the application and execution of the education laws after they are enacted by the Parliament, and they also approve the annual budget for education. The Ministry of Education and Science (MASH), which is headed by the Minister of Education, is responsible for implementing educational policies defined by the Council of Ministers. In addition, the MASH does the following:

Approves programs and textbooks for all school and preschool institutions; Defines criteria for licensing private educational institutions; Develops, approves, and issues admission criteria for educational institutions; Defines the period of study in each cycle and criteria for issuing certificates and diplomas and for elective subjects; Develops teacher training; Defines criteria for recognition of private and public school diplomas; Oversees all educational institutions; Defines the structure of the academic year, the workload of the teaching staff, and the average number of students per class for all levels of public education. (Hoxha, Llambi, Gjermani, Kokomori, Duthilleul, and Kita, 2001, p.12)

Economics Education

Economics instruction is an important component in teaching economics. Before 1990, economics was taught as Political Economy. The core of the political economy course was Karl Marx' theory based on his book "Das Kapital", 1894. The main themes of political economy were the benefits of the socialist system and the weaknesses of free market capitalism. After the fall of Communism, market economics began to be introduced into the curriculum. According to MASH (2008), the stated goals of economic education in Albania since 1990 are to:

- Make students responsible for the economic dimension of their life, which will ultimately affect their social status as citizens, as well as making them more responsible for participating actively in the economic development of their country.
- Empower students and help them to develop practical skills, which enable them to actively participate in the every day decision-making process, as family members, as citizen, as workers, as consumers, as member of diverse communities inside a democratic society, where economic decisions have priority.
- Develop students' potential as independent and self-confident economic factors.
- Develop students' economic thinking which enables them to make the appropriate decisions, to have a positive collaboration with and evaluation of all other economic factors important in decision making.
- Understand the economic processes in all levels of society which are interdependent with political decisions (MASH, 2008). Translated from Albanian.

The objectives of economic education will be reached by putting together the knowledge, concepts and skills in an active participation of working in groups and participating in real economic activities, which means collaboration with USAID and JA Albania programs (MASH, 2008). These stated goals of economic education reflect the new direction and dimension of economics. The new role of this education system is in cooperation with the freedom and responsibilities of the free citizens of a democratic country.

In 1995, economic concepts were introduced as part of civic education in grades one through seven. In eighth grade, economic concepts were introduced in a separate subject called "Economy and Leadership." Some of the concepts included in the eight grade curriculum were: scarcity, demand, supply, market price, productivity, legal structure of

businesses, costs, distribution, and incentives, management and the structure of the business. The objectives and goals of the new curriculum from grades one to eight were to give students basic economic knowledge. This knowledge would prepare students who would not go onto high school to deal with the world of the free market which was the new reality of Albania. The new curriculum was considered an important improvement in economic education, but it had some weaknesses. Teachers believed that the terminology was too advanced for students and teachers and made the subject difficult to understand (Opinions from the round table with teachers and specialists). For several years beginning in 1998, a “Working Group” with representatives from MASH, ISP (Institute of Pedagogical Studies), teachers and professional economists worked to revise the economics included in the grade one through seven civic education curriculum and in the eighth grade economics course. After considering the views of various stakeholders, the group concluded that the economic concepts in grades one to four were appropriate, but that more economics should be included in grade five through seven civic education, eliminating the existing gap. The group further recommended that, in the eighth grade course, too many concepts were introduced and they were too difficult for students. The group also called for more practical activities in the curriculum. The group concluded that the following should be done: to develop economics standards for students, to revise the eighth grade textbook and create an instructors’ version with additional teaching materials to support the student textbook, to arrange for teacher professional development, and to better coordinate all components of the curriculum (Dhima, 2002).

In 2001, the Ministry of Education in Albania (MASH) decided to change the high school curriculum, specifically, to create two branches: one focused on social science and the

other one on natural science. This created the preparation of the new economics curriculum for each branch. “Economics Social Science Profile” was the main textbook used to teach economics in 12th grade in the new curriculum emphasizing social science, and “Economics natural science profile” was used to teach economics in 11th grade in the new curriculum emphasizing natural science. “Applied Economics” continued to be use as a supplementary material (Institution of Curriculum and Training in Albania, 2006, p.2). In 2005, the curriculum had changed again to answer the concerns and suggestions of teachers and specialists. A new textbook was prepared updating and simplifying the “Economics natural sciences profile” as the only book that was used by both branches, emphasizing natural science and emphasizing social science. In 2006, economics became part of the Elective National School Leaving Exams, which are taken the last year of high school. Economics and philosophy are part of the same exam, with 50 percent of the exam in economics and 50 percent in philosophy. The economics concepts emphasized in this exam are the free enterprise system, supply and demand, market prices, consumers in a free market system, starting a new business, business financing, production and production costs, productivity, government and fiscal policy, money and financial institutions, and macroeconomic stability (MASH, 2008).

The action plan of the MASH 2008 for economic education in Albania was to review the curriculum, to update it, to address the needs and developments of the Albanian economy and regional achievements. One of the current priorities is the coordination of economic education with entrepreneurship education. (MASH, 2008) Currently, the whole school curriculum is undergoing change and revision. In school year 2007-2008, secondary education changed from eight years to nine years of schooling, leaving high school with three

years of study instead of four years such as grade 10, 11 and 12. In the school year 2010-2011, a new curriculum will be implemented in Albanian high schools. It will be composed of core curriculum and elective courses. It places the subject of Economics in the 12th grade instead of the current 11th grade.

In the new curriculum, economics will be part of the core curriculum with two hours (credits) and also part of the mandatory elective courses with two hours (credits) in general public high schools in the 12th grade. The core curriculum will have 25 hours (credits) per week in 10th grade; it will have 23 hours per week in 11th grade and 20 hours per week in 12th grade. In the 10th grade, the curriculum provides four hours of elective courses: two hours mandatory elective and two hours free elective courses. In the 11th grade, there are six hours of elective courses: four hours mandatory elective and two hours free elective courses. In the 12th grade there are seven hours of elective courses: Four hours mandatory elective courses, from which two hours are economics course, and three hours free elective courses. The mandatory elective courses are required for graduation, but the timing of enrollment is flexible. Students may choose among an array of free elective courses (Institution of Curriculum and Training in Albania, 2008).

Outside Technical Assistance in K-12 Economic Education

Two U.S. organizations that have been important in developing market economic education in Albania are Junior Achievement (JA) and The Council for Economic Education (The Council). Junior Achievement began its activity in 1993-94 and continues today through the Foundation for Economic Education of Youth, Junior Achievement Albania (FEER). FEER provides teacher training seminars and classroom lessons, books, computer simulations and other materials. It was a strong advocate for including economics as part of

the post-Communist school curriculum in Albania. JA's "Applied Economics: A Program of Junior Achievement" by Shapiro (1987) was the first new economics textbook to be used in Albanian schools. During 2007-2008, 111 teachers and 4,970 students in 40 schools all around the country participated in JA programs (FEER, 2008). Currently, MASH, in collaboration with USAID, is implementing some of the JA economic education programs as compulsory in Albanian high schools. The programs implemented in schools of Albania by JA include students of ages 6 to 20 at all levels of education from elementary to university level. "Our Community Program" is designed for pupils ages 6 to 12, "JA Economics for success" is designed for students age 13 to 15, "The Company Program" which is a real business experience is designed for students age 16 to 18, and "Management Economic Simulation" is a computer-simulated program designed for students age 14-20. "Entrepreneur for a day" is a project in collaboration with British Council, Top Channel TV, and Business without Borders. It selects the best innovation ideas of young entrepreneurs and gives them the possibility to implement these ideas in a real business environment. The entire process was transmitted by Top channel TV. In December 2007 the first educator meeting was held with 20 teachers from secondary schools to introduce USAID the new JAA program for enterprise and economic education. (JAA, Report, 2008).

The Council for Economic Education was founded in 1949 in the United States. Its mission is to help achieve "...a world in which people are empowered through economic and financial literacy to make informed and responsible choices throughout their lives as consumers, savers, investors, workers, citizens, and participants in our global economy" (The Council for Economic Education, 2009). The Council advocates for economics to be taught in the K-12 curriculum. They hold the position that economics and personal finance need to

be taught as a separate course, be part of the high school graduation requirements, and there should be accountability for student learning through assessments. The Council, through its network of economic education centers at universities throughout the United States, has achieved some of its goals. Economics is now included, to at least some extent, in the educational standards of all states. In 2007, 41 states required these educational standards to be implemented. Seventeen states required students to take an economics course as a high school graduation requirement and 23 states required that students' economics knowledge be assessed (A Report Card, Survey of the States, 2007). The university-based Centers for Economic Education work directly with teachers and school districts to plan economics programs and train teachers in economic content and teaching methods. The Council coordinates development of economic education teaching materials by Center for Economic Education affiliates. The Council publishes and distributes these materials nationally and internationally.

Since 1995, The Council has offered programs in economics content and teaching methods to teachers in developing market economies. The Council began training of Albanian teachers in 1998-1999 in its Economics International Training-of-Trainers seminars. By 2006, 16 educators from Albania had participated in the Training-of-Trainers program. The main goal of this program was to prepare trainers with new knowledge and new methods in teaching economics. Through this program The Council helped to build economic education infrastructure in countries in transition even further by providing initial funding of and technical assistance to centers or councils for economic education in East European Countries. The centers would serve the needs of the country to deliver economic education to educators.

In 2001, the Center for Economic Education in Albania was founded as an initiative of a group of Training-of-Trainers alumni. With the support of The Council, they organized three national teacher training seminars in the country. These seminars covered basic economic concepts and teaching strategies. Thirty-five teachers of high school from four different cities of Albania participated in the first seminar (August 2001 in Tirana). The second seminar was held in Saranda (a town in south Albania) in Summer 2002. There were approximately 40 teachers participating from the south region of Albania. This seminar was conducted by the Albanian Center and monitored by The Council faculty. The third seminar was held in 2003 by staff of the Albanian Center for Economic Education using The Council teaching materials. The Center for Economic Education in Albania was closed in 2004. The training materials of the Council continue to be used in individual and local government trainings for teachers.

Economics in Higher Education

Economics education in Albania between 1990 and 2000 was described by Pleskovic, Aslund, Bader and Campbell, (2000). They summarized economics education as being “poor” because of lack of resources such as teaching materials, funds to improve the teaching environment and teachers who were not properly trained to teach market economics. The knowledge base for economics education was weak, meaning that Albania did not have any tradition in teaching free market economics. But students could get market economics education at regional universities or institutes. According to Svejnar (2000) there are two centers in Central and East Europe with truly American style Ph.D. and MA programs: The Center for Economic Research and Graduate Education-Economics Institute (CERGE-EI) in Prague, Czech Republic and the Economics Program at the Central European University

(CEU) in Budapest Hungary.

In Albania, the Department of Economics at the University of Tirana has 1,700 undergraduate and 180 graduate students in an MBA program in cooperation with the University of Nebraska at Lincoln. Preparing teachers and professors to teach economics with the appropriate level of knowledge is one of the most important and priority tasks in Albania and in all other countries in transition. To improve the teaching of economics at the university level, Pleskovic et al., (2000) emphasized, “The prime aim should be to get funding for good Albanian students to go abroad to get Ph.D. degrees” in economics (Pleskovic et al., 2000, p.35).

The situation has improved gradually in the years since 2000. In October 2002, “The New York University of Tirana” was the first private university to open. It offered an economics degree and started with 110 students. By the end of 2005, ten private institutions of different levels opened. (Ministry of Science and Education, 2005) In 2008, at least 14 persons with an American Ph.D. or M.S. in economics were teaching at the New York University of Tirana, Department of Economics and Finance. NYUT offers a Bachelor’s degree conferred by the State University of New York / Empire State College at Tirana University (The New York University of Tirana, 2009).

Research in Economic Education in Transitional Countries

There were a number of studies conducted after the collapse of the socialist bloc to analyze the education systems and specifically, economic education in the countries in transition. In 1999, Pleskovic, Åslund, Bader and Campbell studied 24 countries of the former Soviet Union and East and Central Europe to assess the state of economic education and research. They found that after 10 years of transition in those countries, the institutional

capacity to evaluate, create and influence economic policies was still a critical need. They concluded that one way to improve this situation would be to strengthen economic education at all levels and to create institutions that will support high quality research. They stated that the need was most critical in the Caucasian states, Central Asia and Southeast Europe (including Albania).

According to Stuart (2000) the development and funding of institutions and training faculty of all levels to cope with the new economics curricula are important goals for the countries in transition. The development of economics in command economies was dictated by Marxism-Leninism, which has no value of helping to understand a free market system, on the contrary it is an obstacle for new emerging markets. According to Svejnar (2000) there are problems and obstacles (listed below) for countries in transition to reach the level and quality of economic education of western countries. Some countries in transition have made wide use of western economics textbooks and training offered for local faculty by teachers from western economies. These practices have correlated with an increase and improvement in economic education at the undergraduate level in the transitional countries. Economic education at the graduate level, Master's and Ph.D. degrees, is slower to change and is not consistent with U.S. content and standards. According to Svejnar (2000, p.3) some of the reasons for this uneven development in graduate economic education are:

- The liberalization in the higher system of education in countries in transition gave more power to faculties and universities and in some cases it has been misused by communist era professors to strengthen their positions and few of them had the desire to be trained in levels needed to teach economics to graduate students.
- The Communist-era division between universities specialized in teaching and

academies specialized in research. This division still today creates difficulties to integrate both teaching and research in Ph. D. level.

- Low government spending on education and research, and other obstacles related to laws and regulations, create an environment with low incentives to attract new talented faculties.
- Lack of incentives for those with graduate degrees from western countries to return to teach in their home countries.
- Business courses and business majors are in greater demand in countries in transition than are more traditional economics courses and majors. Therefore, many economics universities give more emphasis to business management than to economics.

There are many graduate programs in East European countries. Some of them are successful but the conclusion is that most of them are far from the western standards and will take more effort and some time to reach those standards (Svejnar, 2000).

Ofer and Polterovich (2000) discuss the technology transfer from countries that have tradition and excellence in teaching economics to countries in transition. According to them, the most important help to countries in transition would be the creation of networks between Greenfield economics schools to teach teachers. There are two dominant approaches on how to reform teaching institutions in transitional economies: (1) the Brownfield approach which consists of restructuring existing teaching and research institutions; (2) the Greenfield approach calling for establishment of new institutions (p.15). Additionally, Ono (2005, p.1) mentioned that “Greenfield academics are sparking reform in academia in transitional countries”. Svejnar supported Greenfield versus Brownfield Economics Institutions. The two most successful Centers offering Economics Education in CEE (Central and East

Europe) were CERGE-EI and CEU, “note that both represent new initiatives rather than a reformation of existing departments or Faculties of Economics” (Svejnar, 2000, p.3).

Preparing teachers of economics is an obstacle for countries in transition. The conclusion from Ofer and Polterovic paper is that technology transfer in education is more complex and more expensive than technology transfer in other areas and a special infrastructure is necessary for technology transfer in education to be successful.

Walstad and Rebeck (2001) attempted to analyze the relationship of teacher training in economics education and student learning of economics in transitional economies. The data used was from pre-test (TEL) administered during October 1996 and the post-test administered in March 1997. The test was administered to high school students who were taking economics course during school year 1996-1997, in four transition countries: Lithuania, Ukraine, Kyrgyzstan, and Poland. They found that students of teachers who participated in the International Education Exchange Program IEEP, gained more in economic understanding than students of teachers who did not participate in IEEP.

Saunders, Rebeck and Saunders (2004) studied the effect of The Council’s Eastern European in-service teacher training workshops, teaching materials and techniques developed in those workshops on students’ performance on the Test of Economic Literacy (TEL). Their data came from five countries: Albania, Croatia, Latvia, Lithuania and Romania. The 20-item TEL was administered to 11th or 12th grade students. When this research was conducted in Albania, economics was taught in 11th grade for curricula emphasizing natural sciences and in 12th grade for curricula emphasizing social sciences. Saunders, et al., (2004) found that in-service teacher training workshops and involvement of teachers in development of teaching materials and teaching methods showed a positive influence on student

performance. The researchers concluded that in Albania the average score difference between 11 and 12 grades may be explained by the fact that different types of students take economics in 11 grade (studying natural sciences) than in 12 grade (studying social sciences). Location of the schools might be another explanation for this difference, with schools located in the capital city or other cities around the country. The difference in test scores between males and females was another interesting finding. The test scores for females were higher than that of males in four countries except Romania in which the average test scores for males was higher than females. The overall average percent correct of the 20 items TEL, for Latvian, Lithuanian and Romanian students exceeded the overall average for regular economics students in U.S. Lithuanian and Romanian students exceeded the average for Advance Placement and Honor students in U.S. This superior performance, according to the researchers, might be due to higher percentage of students who plan to pursue further education in these two countries, higher percentage of teachers who have attended workshops sponsored by The Council, or the greater length of the economics course in East Europe compared with the U.S.

Dale (2005) conducted a comparative study of Ukraine and the USA. The purpose of the study was to examine the effectiveness of the Ukrainian approach to business and economic education, comparing the status of economic literacy in high schools in both countries. The study examined seven groups of high school students from those who had an economics course that met more than three hours per week to students who had no formal economics coursework in both countries. The researcher visited 22 schools in Kiev and Lviv. The Test of Economic Literacy was used as the instrument in this study. Dale used only the post-test data administered at the end of the school year 2001-2003 and also the

national data accumulated in the process of norming the test in U.S. schools in 1986. The mean scores were tested using the Chi Square test of significance and a regression analysis. Twelve years after the start of the transition, the general Ukrainian student population was doing nearly as well on the general economics test (mean score 22.92 out of 46 questions) for students with a minimum of three hours of economics and 17.23 for students with no economics) as the American students (mean score 23.33 for students with a minimum of three hours of economics and 18.37 for students with no economics). He found that there was no significant difference between the mean scores of the Ukrainian and the American students. The Council materials and training of teachers in Ukraine had a huge effect in high school economics. On a course exit survey on interest in economics, the Ukrainian students indicated a higher level of interest than the American students. Based on interviews with specialists and education board members in Ukraine, and personal visits to schools the researcher concluded that there is a need for improvement in business education in both countries and infusing economic education into pre college education curriculum.

Research in Economic Education in the United States

Research in high school-level economic education can be summarized as follows:

1. Research on factors influencing the level of economic knowledge in high school;
2. Research related to teacher variables such as the number of economics courses taken or their level of economics knowledge;
3. Attitudes toward economics and their influence on student economic knowledge;
4. Research on student variables, such as gender, socioeconomic status, race, and attitude toward economics, related to student learning in economics.
5. Research related to the long-term effects of a high school economics course.

Research on Factors Influencing the Level of Economic Knowledge in High School Students.

Walstad and Soper (1988), in analyzing their norming data for the *TEL, 2nd Edition*, showed that a separate course in economics is the only reliable way to make significant gains in economics understanding. Even the separate course in economics should have more time devoted to teaching macroeconomics and international economics, which were the areas of the test that where students did not show significant gains between the pretest and posttest. According to Walstad and Soper, the factors that influence learning in high school are the level of teacher training, course type differences, and the degree of community/school district involvement in economic education measured by the school districts participating in the Developmental Economic Education Program Baumol and Highsmith (1988) studied “variables affecting success in economic education” using an input and output model. Some of the general questions that guided this study were:

- Does the study of economics contribute to the students’ knowledge of pertinent facts?
- What instructional materials, institutional arrangements, or other resources contribute most to effectiveness of a program or a course in economic education?
- What characteristics and opinions of the students most influence their ability to learn and their interest in economics?
- What characteristics and attitudes of teachers contribute most to success in their teaching of economics?
- In what ways and to what extend do the environmental conditions in the homes, school, and classroom from which students come influence learning of economics?

(Baumol & Highsmith, 1988, p.258).

Baumol & Highsmith found that 42 percent of high school economics students declared that they liked economics a little, 23 percent liked it a lot and the rest were unsure or disliked it. Economic students believed that economics help them to deal with some of the everyday issues they face but not with all of them. Students and teachers shared most of the goals for studying economics but teachers had a stronger belief regarding the importance of economics than students had. Topics more included by economics teachers in economics courses were: supply and demand, how the market and the prices work, and monetary and fiscal policy, and the most neglected balance of payments, how to interpret economic data and measurement concepts. Economics teachers participating in the research believed they needed more economics courses to improve their knowledge.

Lynch (1990) reported that “not only do students learn more when their teachers have more training, but economics students whose teachers have had a few courses may not learn any macroeconomics or international economics” (Lynch, 1990, p.289). This finding reinforces the finding of Walstad and Soper (1989) that students did not show significant gains in these two areas.

Teacher Effects on Economics Learning of Students.

Allgood and Walstad (1991) investigated the longitudinal effects of economic education on teachers and their students. They studied 32 teachers who participated in a three-year summer master’s degree program in economics. The researchers found that the economic understanding was improved by 22 percent for the teachers who participated in the program and their improvement in economic knowledge increased was positively correlated with an increase in their students’ economics scores of TEL.

Willison and Kelly (2004) evaluated the effectiveness of a three- year Master of

Economics Education program, which was an interdisciplinary partnership between Northwest University's College of Business and the College of Education at the Idaho Economic Fellows Institute. The research showed that the program increased the economics knowledge of participants and positively affected their teaching skills and techniques. It had a great influence on the economics content taught and on the success of students measured by a standardized test. (p. 4) Hodgkin and Marchesini (2003), tried to introduce a new instrument to measure teacher self-efficacy in economic education. "Self-efficacy is defined as an extent to which the teacher believes he or she has the capacity to affect student performance." From the results of the study, teachers' self efficacy has a 0.82 correlation with "economics teaching proficiency" and a 0.66 correlation with self-reported "economics preparation."

Attitudes toward Economics and the Influence on Student Economic Knowledge.

Marlin (1991), in his study entitled "State-Mandated Economic Education, Teacher Attitudes and Student Learning" investigated the attributes affecting teacher attitudes and the effect of teacher attitudes on student attitudes and learning. The study showed that while the state-mandated economics course had a negative impact on teacher attitudes toward economics, more training in how to teach economics had a positive impact on teacher attitudes toward teaching economics and teacher attitude impacts the students' attitude and learning. Another study by Soper and Walstad (1983), measuring economic attitudes found that exposure of the students to economics materials or courses in high school have an positive effect on attitudes toward economics and on economic knowledge. Walstad and Soper (1989) found support for their earlier findings that the type of course the student takes has a large effect on economics understanding. Other factors of influence included the level of teacher training and the commitment of the school district to economic education.

Dills and Placone (2008), found that teacher knowledge in economics had a significant effect on student learning. Attitude towards economics measured by the “Survey of Economic Attitudes” was not a significant effect on student scores on the TEL. The researchers measured attitudes towards economics by whether the teacher volunteered to teach the class. This measure of attitudes towards economics showed a positive and significant effect on students learning economics measured by the TEL. In their conclusions the authors suggest that emphasizing teacher training in economics is correct and really important to improve student learning. The authors also conclude that allowing teachers more control and flexibility over the classes they teach also will increase the students learning.

Research on Student Effects on Economics Learning.

Phipps and Clark (1993) examined, among other factors, whether there was a difference between male and female attitudes toward economics. The researchers found that females enjoyed economics less than males. Evans (1992) studied race and gender role-model effects in high school economics. He found that the teacher gender did not affect economics learning of high school students, overall, but for African-Americans the study found a large role-model effect so, African American students did better on the TEL when they have a black role model in the classroom. Robb and Robb (1999) and Dynan and Rouse (1997) found that the gender of the instructor has no effect on learning microeconomics at the introductory university level. Robb and Robb also found a difference on microeconomics knowledge between males and females, with female’s scores lower than males.

Research Related to the Long-Term Effects of a High School Economics Course.

Several researchers have studied the “lasting impact” or student retention of the

content of the high school economics course. Among these studies, the findings showed a wide variability in “lasting impact,” as measured by grade in the introductory college economics course. One study showed a significant positive effect of high school economics on performance in introductory economics courses in college (Bernstein & Dawson, 1967). The second study showed a significant positive effect on the pre-test score, but no effect on the post-test at the end of the course (Moyer & Paden, 1968). The third study conducted by Palmer, Carliner and Romer (1979) found that students who had taken an economics course in high school did significantly better on a pre-test at the beginning of an introductory university course, but these students did worse by the end of the course than students who did not take economics in high school. The authors speculated that having a high school course in economics may confuse or mislead students into overconfidence.

Myatt and Wanddell (1990), on the other hand, found that the high school economics course had a significant positive effect on learning at the university level. Lopus (1997) found that high school economics had a significant positive effect on the pre-test performance in college economics, but no effects on the posttest. Similar results were found by Bridges and Casavant (1999). They investigated how three factors, gender, maturity of the student, and having taken high school economics contributed to economics learning in college measured by pre and post-tests. The results showed that high school economics played a larger role than gender or maturity in economic learning. This is supported by research conducted by Peterson (1992) and also by Brasfield, Harrison, and McCoy (1993). The results of both studies indicated that having a high school economics course had a positive and significant effect on economic knowledge.

Research on the Effect of Instructional Methods on Economics Learning.

Maxwell, Mergendoller and Bellisimo (2005) conducted a comparative study of two instructional methods: problem-based learning (PBL) and traditionally taught high school macroeconomics. The researcher used data from 252 economics students in 11 high schools. They found that, in the aggregate, PBL increased learning of macroeconomics compared with a more traditional instructional approach. The results, however, varied by teacher background. Teachers whose students showed greater gains on economics test scores had bachelor's degree in economics and were trained in PBL. The researchers concluded that, for the PBL method to be effective in improving student learning, it is important that teachers who use it to be well trained in using this technique. In another study on methods of teaching, Gremmen and Potters (1997), found that using a computer game (*Simulating International Economic Relations*) had a positive and significant effect on economics learning in college level compared with traditional lecturing.

Agarwal and Day (1998) found that using the internet has a significant and positive effect on learning and retention of economics concepts and students attitude toward economics. They studied two broad groups of internet teaching methods (1) communication and conferencing (2) information access, retrieval and use. Both those aspects of internet use had a positive effect on student scores on a standardized test and on their final grade.

In conclusion, it appears that students' characteristics such as gender, socioeconomic status, , and teacher characteristics, such as having a major in economics, amount of training, having positive attitudes towards economics, using student-centered methods of teaching influence economics learning in high schools.

CHAPTER III METHODOLOGY

The purpose of this study was to analyze the level of high school students' understanding of economic concepts required in the high school curriculum by the Ministry of Education in Albania. The following research questions are addressed:

1. What is the level of economics knowledge, overall and on specific economic concepts after Albanian 11th grade and 12th grade students complete their required economics course?
2. How does economics knowledge differ by student characteristics such as gender, socioeconomic status, curriculum track and type of school?
3. How is economics knowledge related to teacher characteristics such as teacher's gender, type of economics training, teaching experience and age?

The research was conducted in 12 high schools in Tirana, of which 11 schools were public high schools. Out of the 11 public high schools, 10 were general high schools and one was specialized in business and economics. The 12th school was a private school specialized in business and economics.

Subjects

The student participants in this research were 11th graders in 10 general high schools, and 12th graders in two specialized high schools in Tirana, Albania, who were enrolled in a basic economics course. The 11th grade course was offered the entire school year. It covered Macroeconomics and Microeconomics (the text used was Mancellari, Haderi, Qirici, 2006, Economics). The curriculum in two specialized high schools was as follows: the public high

school specialized in economics offered the first basic economics course in the 11th grade (Microeconomics) and the second part of the basic economics course in 12th grade (Macroeconomics) the entire year. Students in the 10th and 11th grades had also had several business courses such as Introduction to Business and Accounting that had some economics content. In the 11th grade in the private high school students were exposed to Introduction to Business and Accounting and in the 12th grade the economics was the basic economics course. This economic course offered to private high school was similar to the basic economics course offered in the public high school. The sample size was 1,511 students. The 12 teachers of these students also participated in the study.

Permission for the study was given by the Tirana Board of Education, who assigned the 10 (out of 23) general public high schools to the study. The assignment of schools was made based on simple random sampling. The two specialized high schools were selected because they are the only high schools in Tirana that are focused on economics and business.

Data Collection

The tests and questionnaires used to collect data for this study were administered by the researcher in Fall 2008 and Spring 2009 in the selected Tirana high schools. Instruments consisted of an economics pre- and post-test, a student questionnaire, and a teacher questionnaire, all of which are described below. In addition, I personally interviewed the 12 teachers at the end of the school year to clarify their teaching methods and materials and any other items left incomplete on the questionnaire.

Test of Economic Literacy

Economics knowledge was assessed using the *Test of Economic Literacy, 3rd Edition* (TEL) short form pre- and post-tests (Walstad & Rebeck 2001), translated into Albanian. The English version is found in Appendix A. The TEL was originally developed for use with high school students in the United States. It has been translated and used as a standardized measure of economic understanding in studies with high school students in at least eight nations (Walstad, 1994). The TEL was administered as a pre-test in Fall 2008 and as a post-test in Spring 2009 by the researcher. Each of the 20 items were marked as correct or incorrect.

“The 20 item TEL is similar in structure to the longer 40-item TEL in terms of content coverage, cognitive levels, and overall test reliability. With regard to the cognitive level of questions, two of the questions on the 20-item TEL (10%) are classified as ‘knowledge’, five (25%) as ‘comprehension’ and 13 (65%) as ‘application’. These percentages compare with 15%, 30%, and 55% on the TEL III Form A and 17.5%, 27.5% and 55% on TEL III Form B”. (Saunders, Rebeck and Saunders 2004 p.51, 52) The 20-item TEL is the combination of the Form A and Form B 40-item TEL.

The first five questions of the TEL short form address fundamental economics concepts. Questions six-12 cover microeconomics knowledge, such as supply, demand, production costs, market structure. Questions 13-16 examine macroeconomics topics, such as gross domestic product, potential output, aggregate demand, and inflation. Questions 17-20 test knowledge of international economics, such as specialization and trade, comparative advantage, exchange rates and standard of living (Saunders, Rebeck, and Saunders 2004).

Student Questionnaire

Other student variables were collected by means of a questionnaire administered to each student. (Appendix B.) Student questionnaire data consisted of:

- Gender,
- Socioeconomic level,
- If the student attended elementary school in an urban or rural school,
- Type of high school (public or private, general or specialized)
- Level of parent's education (neither have university degrees; one has university degree; both have university degrees or more),
- Student's future educational plans,
- Student's opinion about the difficulty of their high school economics course, and
- Student's attitude toward economics.

Socio economic status was a student-reported variable as this was the only method available to obtain this information. Students categorized their family income per month in one of three levels: Less than \$200, between \$201- \$500, and \$501 or greater. These categories were reasonable, as median monthly income in Albania for a person employed in the government sector was \$300, and for a person employed in private sector was \$250 (ISTAT, 2008).

Teacher Questionnaire

The teachers of each economics class were asked to complete a questionnaire on their background (Appendix C). The teacher questionnaire asked:

- Gender,
- Age,
- Number of years in high school teaching,
- Number of years teaching economics,
- The highest academic degree,

- Major field of study (economics, social sciences, natural sciences, others),
- Training participation and the type of training (for example seminars or in-services given by JA, The Council, Ministry of Education and Science),
- How the teacher originally learned economics (university, in-service or other training, or in high school).
- Type of materials used in classroom (textbook only, other materials).
- Instructional methods used in teaching economics, (problem solving; group discussion; simulation).
- Involvement in extracurricular economics activities (yes; no).

In addition to the questionnaire teachers were interviewed by the researcher about their opinions of the type of training attended, including whether the training helped them to achieve their teaching objectives, and other issues related with economics concepts, curriculum, materials use in teaching economics and the obstacles to use other methods of teaching than direct lecturing. The interviews was informal and unstructured, to create the warm atmosphere and to make teachers feel comfortable in giving their opinions without hesitations.

The Model

The model used in this research was an economic education production function, the input-output model, which is used widely in economic education research (Strom, 1979; Walstad and Soper, 1989; Watts, 1985a; 1985b; Evans, 1992). The model represents the knowledge gain in economics measured by the post-test scores on the TEL as a function of student characteristics; teacher characteristics and school characteristics. That is,

$$\text{Economics knowledge} = f(\text{student, teacher, school characteristics})$$

The design of this research could be considered nested, where students are considered within classes and classes within schools. Theoretically, students in this study are in three

structural levels. (1) individual student characteristics, (2) teacher characteristics, and (3) school characteristics. Empirically, however, because there is only one teacher per school, the model has only two levels instead of three: The individual student level and the teacher/school level. The most appropriate statistical models for use with nested data are hierarchical linear models or random effects regression models.

After preliminary analysis, the results indicated that a nested model was not the most appropriate model to be used in this research. With only eight percent of the variance due to inter-school differences, the multiple regression model should provide reliable and unbiased results, therefore, (Lee, 2000) the linear multiple regression model was used to analyze questions 2 and 3 of the research. The model is:

$$Y = a + b(X1) + c(X2) + d(X3) + e(X4) + f(X5) + g(X6) + h(X7) + i(X8) + j(X9) + l(X10)$$

Where, Y is the TEL post-test score and the independent variables are student gender (X1), family socioeconomic status (X2), curriculum track (X3), type of school (X4), TEL pre-test scores (X5), teacher gender (X6), number of years teacher has taught economics (X7), if the teacher was trained by CEE (X8), if the teacher was trained by JA (X9), and teacher age (X10). The SPSS program for Multiple Regression Analysis was used to estimate this model. The sample size of 1,511 provided enough power to test the regression model of the present research.

Variable names and definitions used in the analysis and their values are reported in

Figure 1.

Figure 1

Variable Names and Values

Variable name	Variable definition	Variable values
NSTRACK	Curriculum Track	0 = social science track; 1 = natural science track
SGEN	Students gender	0 = female; 1 male
SES	Social Economic Status	0 = low or middle; 1 = high
TRCEE	Trained by CEE	0 = no trained; 1 = trained
TRJA	Trained by JA	0 = no trained; 1 = trained
SCHTYPE	School Type	0 = general; 1 = specialized
TGEN	Teacher Gender	0 = female; 1 male
YRTCHECON	Years Teach Economics	continuous, range = 4- 18, mean = 8.7
TAGE	Teacher Age	continuous, range = 29- 55, mean = 45
PRETEST	Pre-test cores of students	continuous, range = 0- 20
POSTTEST	Post-test cores of students	continuous, range = 0- 20

CHAPTER 4

EMPIRICAL RESULTS

This research centered on the following three questions regarding economics learning of secondary students in Albania:

1. What is the level of economics knowledge, overall and on specific economic concepts after Albanian 11th grade and 12th grade students complete their required economics course?
2. How does economics knowledge differ by student characteristics such as gender, socioeconomic status, curriculum track and type of school?
3. How is economics knowledge related to teacher characteristics such as teacher' gender, type of economics training, teaching experience and age?

To address these questions, data was collected and analyzed using scores on pre- and post-tests from the *Test of Economic Literacy* (TEL). In Fall 2008 and Spring 2009, the same TEL was administered to 11th grade economics students at 10 general high schools and 12th grade economics students at two specialized high schools in Tirana, the capital of Albania.

The internal reliability for the 20-item test used in this research was measured by the Cronbach's Alpha coefficient, which equaled 0.697 and the standardized item Alpha, which equaled 0.70. (Appendix D). This coefficient at 0.70 is acceptable according to George and Mallery (2003).

Student Characteristics

The sample consisted of 1,511 students from 12 high schools in Tirana, Albania. Of these, 1,302 students (86%) attended the ten general high schools and 209 students (14%) were enrolled in the two specialized economics and business high schools in Tirana, Albania.

Gender

There were 862 female students (57 %) of the sample and there were 649 male students (43 %) of the sample, so there were 14 percent more females than males participating. From the general high schools, 767 students (58.9 %) were female and 535 students (41.1 %) were male, so there were about 17 percent more females than males participating in general schools. In the two specialized schools, 95 students (45.2 %) were female and 114 students (54.5 %) were male. In contrast to the general schools, the specialized high schools had more males than females (9.0 %) participating in the study (Table 1).

Table 1
Gender

	General Schools		Specialized Schools		All Schools	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Female	767	58.9	95	45.5	862	57
Male	535	41.1	114	54.5	649	43
Total	1302	100	209	100	1511	100

Socioeconomic Status

Students were asked to report their socioeconomic status (SES) by the income of their families. Those reporting a family income of less than \$250 per month are categorized as low SES. The middle level of SES includes students who reported family income of \$250 to

\$600 per month, and the high level of SES includes those who reported family income of more than \$600 per month. Student reports for all schools combined indicate that the sample was distributed unequally among the three SES groups, with 61 students (4.0 %) indicating that they belong to the lowest level of SES, 610 students (40.4 %) the middle level, and 840 students (55.6 %) the highest level of SES. The percentage of distribution of students among three socioeconomic status (SES) groups was similar for both types of schools. Student reports of SES for general schools showed that 54 students (4.1 %) indicated belonging to the lowest level of SES, 526 students (40.4 %) the middle level, and 722 students (55.4 %) the highest level of SES. Students were distributed unequally among three socioeconomic status (SES) groups for the specialized high schools as well, with 7 students (3.3 %) belonging to the lowest level of SES, 84 students (40.2 %) in the middle level, and 118 students (56.5 %) from the highest level of SES (Table 2).

Table 2
Socioeconomic Status

	General Schools		Specialized Schools		All Schools	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Low	54	4.1	7	3.3	61	4.0
Middle	526	40.4	84	40.2	610	40.4
High	722	55.5	118	56.5	840	55.6
Total	1302	100	209	100	1511	100

Curriculum Track

There are two curriculum tracks in all general high schools in Albania. These are natural sciences and social sciences, where coursework in each of the areas is emphasized respectively. The enrollment of the students in each track is strictly the family's and student's choice. On average, there were two social science classes and two natural science

classes participating from each school. There were 628 students (48.2%) in natural sciences and 674 students (51.8%) in the social sciences tracks (Table 3).

Table 3
*Students Distribution between Curriculum
 Tracks in General High Schools*

Track	Frequency	Percent
Natural sciences	628	48.2
Social sciences	674	51.8
Total	1302	100

In summary, a comparison of the general and specialized high school indicates that there was a slightly higher percentage of female students in general high schools than in specialized high schools. The distribution of students among the three SES levels was virtually equal between the two school types. It is noted that one of the two specialized high schools is private. Students who are admitted to the school after passing the entry exam have to pay tuition to attend, so the level of income for families whose children were attending the private school would be less likely to be in lowest SES category. This helps to explain the smaller number of students in the low SES in the specialized schools, where only two of the seven students in the low SES status in the specialized schools were from the private school. In regard to parents' educational achievement, there was a higher percentage of students in specialized high schools who indicated that both parents had university degrees or higher than students in general high schools. A slightly higher percentage of students in the general high schools indicated that either one of their parents or neither had university degrees, so the parents of general high school students were slightly less educated than those of the specialized high school students.

Teacher Characteristics

There were 12 teachers of economics in the 12 high schools that participated in this research. Six 50 years of age or greater. Five reported that they had 25 years or more of teaching experience. Four others had been teaching economics for 10-18 years (Table 4). All 12 had university diplomas but none had a master's degree. All the teachers who were teaching economics in general high schools had a major in social sciences but no one had majored in economics. Two economics teachers in specialized high schools had majored in economics. Three teachers reported having participated in the Council for Economic Education (CEE) seminars, eight teachers reported having participated in JA seminars, and all of them had participated in training organized by the Bank of Albania in collaboration with the Ministry of Education.

Table 4
Teaching Experience: General and Economics

Number of teachers	Years teaching experience				Years Teaching Economics				
	Mean	SD	Min.	Max.	Mean	SD	Min.	Max.	
General H. S.	10	22.3	9.6	6	35	9.9	4	4	18
Specialized	2	7.5		6	9	7.5		6	9

Findings on Research Question One

The findings on question one, “What is the level of economics knowledge gain, overall and on specific economic concepts from the beginning to the end of the economics course required of Albanian 11th grade and 12th grade students?” are structured as follows: First, overall economics knowledge, is discussed. Pre-test and post-test scores for all

schools, the general high schools and specialized high schools are reported. The mean difference between pre-test and post-test scores is calculated to show the students' knowledge gain for all schools and each type of school. Comparison between the two types of schools general and specialized will conclude this section. Second, knowledge of specific concepts is discussed using mean difficulty indexes, which allow comparison of student knowledge in specific concept areas to their overall test scores. Difficulty indexes are calculated for each item and each concept area for both general and specialized high school test results to allow for comparison between students in the two types of schools.

Overall Economics Knowledge of Students

In Table 5 below, statistical summaries are given for students of all schools combined, and for each type of high school separately.

The TEL mean pre-test score for all schools was 9.0 ($SD = 3.22$). The median was 9 and the mode was 12. The mean pre-test score for general schools was 8.9 ($SD = 3.22$). The median and mode both equaled nine. The measures of central tendency for the specialized high schools pre-test scores were mean 9.87 ($SD = 3.12$), median 10, and mode 10.

The TEL mean post-test scores for all schools combined was 12.15 ($SD = 3.46$), the median was 10 and the mode 14. The post-test mean score for general schools was 12.12 ($SD = 3.50$), the median was 12, and mode 14. The mean score on the TEL post-test for the specialized schools was 12.30 ($SD = 3.10$). The median equaled 13 and the mode equaled 14. The post-test mean score for the specialized high schools is almost the same as that of general high schools, respectively 12.30 for specialized schools and 12.12 for general high schools. The TEL mean post-test scores for all schools combined was 12.15 ($SD = 3.46$), the median was 10 and the mode 14. The post-test mean score for general schools was 12.12

Table 5
Summary of Descriptive Statistics for Pre-test and Post-test Scores

Statistics	General Schools		Specialized Schools		All Schools		Natural Science Track		Social Science Track	
	Pre-test scores	Post-test scores	Pre-test scores	Post-test scores	Pre-test scores	Post-test scores	Pre-test scores	Post-test scores	Pre-test scores	Post-test scores
N	1302	1302	209	209	1511	1511	628	628	674	674
Mean	8.92	12.12	9.87	12.25	9.05	12.15	9.92	13.5	7.97	10.79
Median	9	12	10	13	9	10	10	14	8	11
Mode	9	14	10	14	12	14	11	15	9	10
Std. Deviation	3.22	3.5	3.12	3.15	3.22	3.46	3.21	3.08	3.28	3.05

($SD = 3.50$), the median was 12, and mode 14. The mean score on the TEL post-test for the specialized schools was 12.30 ($SD = 3.10$). The median equaled 13 and the mode equaled 14. The post-test mean score for the specialized high schools is almost the same as that of general high schools, respectively 12.30 for specialized schools and 12.12 for general high schools. Within the general schools, however, the mean post-test scores for the natural science students were 13.50, while the mean for the social science students was 10.79.

A paired sample t -test of the pre- and post-test scores was run for all schools combined and for each type of school separately. The results are summarized in Table 6. The paired sample t -test for all schools combined showed a mean score gain between pre-test scores and post-test scores of 3.10, which was statistically significant ($t(1510) = 35.9; p \leq .001$). This indicates that economics knowledge increased significantly between the pre- and post-test for all students combined (Table 6/a). The paired sample t -test for general high schools shows that there was a 3.21, mean score difference which was statistically significant ($t(1301) = 34.2; p \leq .001$), (Table 6/ b), indicating that general high school students' knowledge of economics increased significantly from the beginning to the end of the course. A paired sample t -test of the pre-test and post-test scores for the specialized high school students shows that there was a 2.37 mean score difference which was also statistically significant ($t(208) = 10.4; p \leq .001$), indicating that the students of the specialized high schools also showed a significant increase in economics learning from the economics pre-test to the post-test.

Table 6

a. *Comparison Statistics of Post-Test, Pre-Test Scores for All Schools*

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
					Lower	Upper			
All schools	Post-Pre	3.10457	3.35706	.08636	2.93516	3.27397	35.948	1510	.000

b. *Comparison Statistics of Post-test, Pre-test Scores for General Schools*

		Paired Differences					t	df	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
					Lower	Upper			
General Schools	Post-Pre	3.20353	3.37931	0.09365	3.01981	3.38726	34.206	1301	.000

c. *Comparison Statistics of Post-test, Pre-test Scores for Specialized Schools*

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
					Lower	Upper			
Specialized Schools	Post-Pre	2.37799	3.27515	0.22655	1.93137	2.82461	10.497	208	.000

Comparison of general high schools and specialized high schools.

A comparison of the test results between the general and specialized high schools reveals a mean difference of 0.96 on the pre-test, with specialized high school students scoring higher than general high school students. The explanation for this difference may be related to two factors, age and prior experience with economics concepts. Specialized high school students are in 12th grade, and the general high school students are in 11th grade. In addition to being about a year older, the 12th grade, students were also exposed to some economic concepts in their 10th and 11th grade coursework, which may account for the higher

pre-test scores. Comparison of the mean post-test scores between general and specialized schools, reveals a difference of 0.13, with the specialized students scoring higher. (Table 5)

Gender Differences in Overall Economics Knowledge

The difference in the pre-test scores between female and male students was not statistically significant for all schools combined or for either type of school separately. The difference in post-test scores between female and male students for all schools combined was statistically significant ($t = 4.7; p \leq .001$), with females scoring an average of 0.84 points higher than males, and this finding was consistent for each type of school separately.

Table 7
Mean Gender Differences for General, Specialized and All High Schools

Type of school	Mean test score	Female	Male
General high school	Pre-test	8.8	9.07
	Post-test	12.43	11.66
Specialized high school	Pre-test	10.15	9.64
	Post-test	13.06	11.57
All schools	Pre-test	8.95	9.17
	Post-test	12.51	11.67

Curriculum Track

Table 8 indicates the pre-test mean TEL scores by curriculum track in the general high schools.

Table 8
Pre-Test Means by Curriculum Track

Group Statistics					
	Track	N	Mean	Std. Deviation	Std. Error Mean
Pre-test scores	Social	670	7.9657	3.0413	0.1175
	Natural	631	9.9366	3.1003	0.1234

The test for independent samples indicates that this difference is significant, with students in the natural sciences scoring 1.97 points higher than those in the social sciences track ($t(1299) = -11.57; p < .001$) (Table 1, Appendix J).

Item Analysis for TEL Questions

In order to analyze scores for individual questions and economic concept areas, "mean test difficulty" and "mean item difficulty" statistics were calculated (Soper and Walstad 1988). Mean test difficulty refers to the mean percent correct across all test questions. In other words, the higher the difficulty index, the better the students performed on the test. In the post-test for general high schools, the mean score is 12.12, which is a mean test difficulty of .57 (percent correct). For specialized high schools, the mean score was 12.25, for a difficulty index of .66, and for the entire sample the mean score was 12.15 and the difficulty index is .59 (See Table 9).

The post-test mean difficulty and the post-test mean item and concept area difficulties are used here for the analysis. These tools provide additional insight into economics knowledge of Albanian high school students. Specifically, mean concept area difficulty

allows a comparison of relative understanding of specific economics topics.

The mean item difficulty is the percentage of correct answers on a particular item, and may be compared to the mean percent score on the entire test. To calculate mean concept area difficulty, groups of questions within a broader concept area are defined and the mean of the mean percentages correct for each individual item in the group is calculated and compared with the mean test difficulty. These comparisons allow categorizing of each concept area as less or more difficult within the overall test. For the present analysis, the post-test items were grouped into four concept areas: Fundamental concepts, Microeconomic concepts, Macroeconomic concepts, and International concepts. The mean concept difficulties are presented in Table 9.

Table 9
Post-Test Mean Concept Difficulty

Concepts	General Schools		Specialized Schools		All Schools	
	Mean Concept Difficulty	Mean Test Difficulty	Mean Concept Difficulty	Mean Test Difficulty	Mean Concept Difficulty	Mean Test Difficulty
Fundamental concepts Q1 to Q5	0.70	0.57	0.72	0.66	0.71	0.59
Microeconomic concepts Q6 to Q12	0.56	0.57	0.58	0.66	0.57	0.59
Macroeconomic concepts Q13 to Q16	0.69	0.57	0.65	0.66	0.67	0.59
International concepts Q17 to Q20	0.49	0.57	0.45	0.66	0.47	0.59

The overall post- test was more difficult for general high school students with mean test difficulty equal to .57 than specialized students for whom the mean test difficulty was

.66. The fact that specialized high school students were had been exposed to economic concepts prior to the one-year course is the most likely explanation for this difference.

The statistics presented in Table 9 indicate that students in the entire sample understood the fundamental economics concepts best with a mean difficulty of 0.71, followed by macroeconomics concepts, with a mean difficulty of 0.67. The difficulty index for the microeconomics items was 0.56, while the international economics concepts were the most difficult for these students, with mean item difficulty of 0.47. The two types of schools follow the same pattern with fundamental economics concepts best understood, followed by, macroeconomics, microeconomics and international concepts which showed to be the most difficult one for both schools.

Fundamental economics concepts consisted of a group of five questions. Some of the concepts examined here were; scarcity, opportunity cost, specialization and productivity, incentives and exchange. (See Appendix F for the complete list of test questions) The fundamental concepts were understood better than overall economic concepts by all students with an overall mean difficulty of .71 compared with the overall test difficulty of .59 (Table 9).

Microeconomics concepts were tested in a group of seven questions including concepts such as competition, supply and demand, monopoly and market failures. The mean difficulty for the microeconomics section of 0.56 for general high school students, shows that microeconomics questions were of about the same level of difficulty as the overall test (.57) for these students. On the other hand, the mean difficulty of 0.58, for specialized students shows that they understood microeconomic concepts less well than all concepts together.

The two groups of students, however, show nearly the same post-test level of understanding of microeconomics concepts.

The third group of questions 13 to 16 represents the macroeconomics concepts including gross domestic product, aggregate demand and supply and inflation. Mean difficulties for the macroeconomics concepts show that all students combined tended to understand macroeconomics (.67) better than microeconomics (.57) (but less well than the fundamental concepts (.71)). This pattern holds for the two types of schools separately.

The fourth group of questions (17 to 20) represents the international economics concepts such as specialization, exchange, comparative advantage, exchange rates and comparative standards of living. The mean difficulty for international economics concepts was 0.47 for all students combined, making it the least well understood concept area. This pattern holds for both school types, with the general high school students understanding these topics slightly better (.49) than the specialized high school students (.45). The finding that students scored lowest on international economic concepts is consistent with those of Watts and Highsmith (1992). These researchers found that U.S. students with and without formal coursework in economics scored slightly lower on the international questions on the post-test of the TEL, 2nd Edition than they did on overall exam. Teachers complained about the lack of time to cover international economics concepts, and the lack of teaching resources (Watts & Highsmith, 1992). As the researcher of the present study collected the Albanian data and spoke with the classroom teachers, they also expressed the same concern about time to cover the international concepts, which typically come at the end of the course.

In conclusion, while there was a statistically significant gain in economics knowledge for the overall sample, the general high school students gained somewhat more. The lower

pre-test scores of the general high school students may explain their greater gain, as these students had not been exposed to economics concepts previously in their curricula, while the specialized high school students had. It is interesting to note that, while the specialized high school students knew more economics before the course, students in both types of schools knew about the same amount at the end of the year-long course. In addition, the pattern in understanding among four concept areas was similar for students of both types of schools. The findings regarding questions two and three will add additional insights into both student and teacher factors that influence students' economics knowledge school by the end of the one-year course.

Analysis of Student and Teacher Effects on Student Learning of Economics

The report of findings on question two "How does economics knowledge differ by student characteristics such as gender, socioeconomic status, curriculum track and type of school? and question three "How is economics knowledge related to teacher characteristics such as teacher' gender, type of economics training, teaching experience and age is structured as follows: First, the most appropriate model and the rationale to be used in analyzing the questions will be discussed followed by a presentation of the overall model results. Next, the results for student effects will be discussed, and, finally the findings regarding teacher effects will be covered.

Statistical models and the rationale

The Hierarchical Linear Model (HLM) is theoretically the most appropriate model to study and analyze the effect of student-level and school (teacher)-level characteristics on students' economics learning. HLM is considered the most suitable model when data is nested in different levels. In this case, students were nested within classes and schools.

Before including any variable in either the level-one or level-two HLM equations, the multilevel unconditional or null model was tested. This model showed the amount of variability that existed within and among schools in the sample, answering the question, “Was there a difference between schools?” The results of the null model showed the intercept variance, $r_{00} = .94$, which represents between school variability, and the residual 11.0 represents within schools variability. The total variance in the model, was $11.00 + .94 = 11.94$, which is low.

The proportion of the school-level variance was $(.94 / [.94 + 11.00]) = .08$, indicating that eight percent of total variability in the post-test scores occurred among schools (teachers). According to Lee (2000), only when intra-class correlation is greater than 10 percent of the total variance in outcomes should HLM be estimated. With only eight percent of the variance due to inter-school differences, a traditional multiple regression model should provide reliable and unbiased results. Appendix G produces more detailed information on the use of the HLM model in the present study.

For the multiple regression analysis, data collected from students at all schools was pooled. The dependent variable was students’ post-test score on the TEL. Student characteristics included gender, socioeconomic status (SES), type of curriculum (social science or natural science track), and type of school (general or specialized). Teacher characteristics included gender of the teacher, whether trained by Council for Economic Education (CEE) programs, whether trained by Junior Achievement (JA) programs, years of teaching experience, and age.

The full regression model, including the student and teacher-level variables was estimated with simultaneous entry of all variables. The student variables included gender

(SGEN), socioeconomic status (SES), whether the student was in the natural sciences track (NSTRACK), type of school (SCHTYPE) and the pre-test scores (PRETEST). The teacher variables included age (TAGE), gender (TGEN), whether the teacher was trained by CEE (TRCEE), whether the teacher was trained by JA (TRJA), and number of years experience teaching economics (YRTCHECON).

Tables 10, 11, and 12 present the summary of the multiple regression results.

Table 10: *Multiple Regression Model Summary of Students' Performance Related to Students' Characteristics and Teachers' Characteristics for All Schools*

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.600 ^a	0.36	0.356	2.77907	0.36	84.425	10	1500	.000

a. Predictors: (Constant), TGEN, SES, YRTCHECON, SGEN, NSTRACK, PRETEST, TRJA, TRCEE, SCHTYPE, TAGE.

Table 11
Analysis of Variance in the Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6520.3	10	652.031	84.425	.000 ^a
	Residual	11584.8	1500	7.723		
	Total	18105.1	1510			

a. Predictors: (Constant), TGEN, SES, YRTCHECON, SGEN, NSTRACK, PRETEST, TRJA, TRCEE, SCHTYPE, TAGE

b. Dependent Variable: post test scores

The total variance, of the model including all students, and teachers variables accounted for approximately 36 percent of variability in student's post-test TEL scores. The multiple *R* showed a substantial correlation of the independent variables with the Post-test

scores of the TEL ($R = .60$).

Table 12
Regression Coefficients for the Model Main Effects

Model	Unstandardized Coefficients		Standardized Coefficients			Correlations		
	B	Std. Error	Beta	t	Sig.	Partial	Part (sr)	sr ²
(Constant)	7.337	0.440		16.660	.000			
Pre-test scores	0.469	0.024	0.437	19.690	.000	0.453	0.407	.166
track	1.845	0.162	0.263	11.350	.000	0.281	0.234	.055
gender	-0.959	0.146	-0.137	-6.560	.000	-0.167	-0.136	.018
socio economic status	0.278	0.148	0.040	1.880	0.060	0.049	0.039	.002
schotype	0.661	0.290	0.066	2.270	0.023	0.059	0.047	.002
teachage	.000	0.013	-0.001	-0.010	0.986	.000	.000	.000
yteacheco	0.014	0.031	0.016	0.450	0.651	0.012	0.009	.000
trancee	1.550	0.209	0.181	7.390	.000	0.188	0.153	.023
trainja	-0.903	0.233	-0.121	-3.870	.000	-0.100	-0.080	.001
teachgend	1.419	0.259	0.126	5.480	.000	0.140	0.113	.013

Adjusted $R^2 = .356$; $F(10, 1500) = 84.42$; $p < .001$

In multiple regression, the squared semi-partial (part) correlation (sr^2) is the percent of total variance in the dependent variable explained by the given explanatory variable, over and beyond other predictors in the model (Garson, n.d.)

In considering the effect of the independent variables on economics knowledge, the significance of each variable, its relative importance, and the percent of total variance in the post-test score that it explains help to provide insight into its influence.

Effects of Student Characteristics on Economics Learning

Pre-Test

The semi-partial correlation squared (sr^2) for pre-test scores is .166, indicating that the pre-test scores account for 16.6 percent of the variance in the post-test scores. The

unstandardized coefficient ($B=.46$) is significant at $p < .001$ ($t= 19.6$). The standardized coefficients (β) values indicate the relative influence of the entered variables, showing that the pre-test scores had the greatest influence on the post-test scores, and the direction of the influence was positive. The explanation is that pre-test scores are the major predictor of post-test scores, an expected finding.

Curriculum Track

The sr^2 for curriculum track equals .055, indicating that being in the natural sciences track explains 5.5 percent of the variance in the post-test scores. The unstandardized regression coefficient for curriculum tracks is 1.85, indicating that students of the natural sciences track scored, on average, 1.85 points higher on the TEL post-test than students not in the natural sciences track ($t= 11.35$; $p < .001$). The standardized regression coefficient of .263 indicates that being in the natural sciences track is the second strongest influence on the post-test outcome.

Gender

The sr^2 for gender is equal to .018, indicating that student gender accounts for 1.8 percent of the variance in the post-test performance. $\beta= -.14$. The B coefficient of $-.95$ indicates that females scored an average of .95 points higher on the post-test than males ($t=-6.56$; $p < .001$).

Socioeconomic status

Socioeconomic status was not a significant predictor of post-test scores. Because of the small number of students in the low SES group ($n=61$; $N=1511$), the low and middle SES groups were grouped together. Although the effect of SES on students' economic knowledge approaches significance ($t = 1.88$; $p = .06$) the effect size is small. The unstandardized

regression coefficient of .27 indicates that students in the higher SES score only an average of .27 points higher on the post-test than students in the lower and middle SES groups.

School type

The unstandardized regression coefficient of .66 ($t = 2.28$; $p < .001$) indicates that students in specialized high schools scored significantly higher than those at the general high schools. The proportion of variance in the post-test scores accounted for by school type, however, is very low ($sr^2 = .002$).

In conclusion, the above analysis demonstrates that, all else equal, students in the natural science track scored significantly higher on the TEL post-test than other students; female students scored significantly higher than male students; and students in specialized high schools performed significantly better than students in general high schools. SES did not have a significant influence on the post-test scores.

Effects of Teacher Characteristics on Economics Learning

Teacher Training

To test the effect of teacher training in economics and economics teaching methods on the post-test scores, two major types of training provided by U.S.-based groups, Junior Achievement (JA) and the Council for Economic Education (CEE) will be analyzed. The influence of having a teacher trained by CEE is a positive and significant influence on students' post-test scores ($t = 7.39$; $p < .001$). The unstandardized regression coefficient of 1.55 indicates that students of teachers trained by CEE scored an average of 1.55 points higher on the post-test than did students of teachers not trained by CEE. The sr^2 for CEE training equals .023, indicating that 2.3 percent of the variance in the post-test score is accounted for by this variable.

Somewhat surprisingly, the influence of JA training is negative and significant with a regression coefficient of -.90 influence on student post-test scores. The unstandardized regression coefficient of -.90 ($t=-3.88$; $p < .001$) indicates that students of teachers who participated in JA training scored an average of .90 point lower on the post-test than did students of teachers who had not been trained by JA. A possible explanation for this result is the focus of JA training. JA programs are focused more on business than on economics. JA conducts programs in running a business for students of high schools. These programs and the related teacher training, although sometimes characterized as economic education programs, seem to detract from students' economic knowledge as reflected in the TEL post-test.

Teacher gender

The regression coefficient of 1.41 ($t = 5.48$; $p < .001$) indicates that students of the one male teacher scored an average of 1.41 points higher on the post-test than students of the female teachers. This result has to be interpreted with caution because there was only one male teacher in the sample of 12 teachers.

Teacher age and years teaching economics

Teacher age and years teaching economics were not significant predictors of the post-test results.

In conclusion, regression analysis shows that teacher gender and type of training were significant predictors of student post-test scores. The most important teacher variable, showing a positive influence on student post-test scores, was CEE training. Students who were taught by teachers trained in CEE programs showed a significantly higher level of knowledge at the end of the economics course than did students of teachers who had not

participated in CEE training. The unexpected finding that students of teachers trained by Junior Achievement score lower in economics knowledge than students of teachers who have not had this training is troubling and will be discussed further in Chapter 5.

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

The priorities of pre-university education in Albania were presented at the World Bank project called “National Strategy for Pre-University Education Development (2004-2015)”.

The Priorities that were to be implemented are:

- Improvement in the quality of teaching and learning.
- Coordination and improvement of teacher training while strengthening the Education Center for Teacher Training and Qualification.
- Monitoring the quality of education by the National Education Center of Testing and Evaluation, and by the Inspection Center of the Albanian Ministry of Education.

The present study provides insight into factors that contribute to student learning in one subject area, economics. It is hoped that these insights will serve to inform pre-university educational priorities in Albania.

The principal finding was that the economics course taught in the 11th or 12th grades in Albanian high schools increased the knowledge of this subject significantly. After completing the required economics course, students in both general and specialized high schools significantly increased their knowledge of economics concepts.

The TEL post-test scores of this study were higher than the TEL post-test scores reported by Saunders, Rebeck and Saunders (2004) in their study also conducted in Albania. This indicates that students today may better understand market economics than students did in the earlier part of the decade.

The improvement on the post-test scores from 2002 to 2009 can be explained by

many factors. The development of Albania toward more sophisticated market structures gives students and teachers more real-life experience to support the teaching and learning of economics. Availability of new teaching technology, such as widely use of computers, in recent years in Albania may have opened new windows for using additional, more student-centered teaching and learning materials. Additionally, teachers are getting more experienced in teaching economics. Teachers have also participated in additional training programs during these years. The training of teachers had been at the focus of the Institute of Curriculum and Training in recent years. Economics textbooks in Albania have also gone through major transformations and improvements during these seven years.

One of the puzzling results of the study conducted in Albania and four other countries by Saunders, et al. (2004) was the difference in the TEL scores between 11th grade high school students and 12th grade students. The average score for 12th grade students was significantly lower than the average score for 11th grade students. These authors concluded that the difference was due to the students' coming from different curriculum tracks. In the year 2002, students in the natural science track took economics in the 11th grade compared to students in the social science track, who took economics in the 12th grade. These conclusions are supported by the findings of the present research, that is, the difference in the post-test scores between students in the natural science curriculum track and all other students was significant, with students in the natural science track scoring significantly higher on the post-test than the other students. This difference also existed in the pre-test scores. A possible explanation for this difference may be that students in the natural science group had more math competency than the other students, although this was not studied in the present research. Other research studies support the positive effect of math knowledge on learning

economics. For example, Espey (1997) reported that students who passed the math competency quiz performed significantly better in economics class than students who did not pass the quiz. Further investigation of the math competency of students in the Albanian natural sciences track would provide additional insight into this hypothesis.

The findings of the difficulty index analyses demonstrated that all students scored best on questions over fundamental economic concepts. The remaining concept areas in order of increasing difficulty were macroeconomics, microeconomics and international economics. Saunders, et al. (2004) found the same pattern in their study of students from Albania and four other countries of Eastern Europe. In the present study and in Saunders, et al. (2004), international economic concepts were the most difficult for students of all five Eastern European nations combined. The results for each specific country showed these findings were consistent in three of the five countries they studied. Similarly Watts & Highsmith (1992) reported lower scores on the international economics section of the 2nd Edition TEL (1987) than the scores on the overall exam for U.S. high school students.

As suggested by Watts & Highsmith (1992) and informal interviews with Albanian teachers in the present study, lower scores on international concepts might be explained simply by lack of time. International economics is typically placed at the end of the course. Some teachers may just have not had sufficient time at the end of the school year to teach international economic concepts as well might be needed to student knowledge gain. Study of the structure of the economics course, and the place of international concepts within the course would help to verify this conclusion.

The difficulty indexes for specific questions might serve to help teachers in analyzing particular concepts that students do not understand well. In interpreting these specific

findings, one should first consider whether the wording of the question might be problematic. If this is not likely, then the findings might direct teachers and teacher trainers to concepts that they need to further emphasize, and perhaps better understand themselves. In the present study, for example, the difficulty indexes were high for questions relating to approaches to dealing with environmental issues (Question 12) and wage differentials (Question 11). To improve student understanding of these concepts, educators could use more student-centered methods and activities, such as inquiry and simulations, to help students gain more experience with the content.

The findings of earlier research studies, conducted with students in the U.S., have shown that male students tend to out-perform female student in economics (Robb & Robb, 1999; Walstad & Robson, 1997). In Albania, on the other hand, female high school students tended to perform better than male students on both the pre- and post-tests. Saunders, et. al. (2004) found results similar in their study of Albanian students. They also found this to be true for three out of the four other east European countries they studied. Further study of gender differences in economics learning and a review of literature about gender differences in other subject areas and across countries might provide more insight into this topic.

In studies of students in the U.S., many find that socioeconomic status does make a difference in student performance on tests (Walstad & Soper, 1989; Becker, Green, & Rosen, 1990; Walstad, 2001; Kardash, 2006). The fact that SES did not have a significant effect on the post-test scores in the present study might be explained by the effects of the previous economic system. The parents of these high school students grew up in a socialist system with very limited differences in educational and income levels. The total isolation made it impossible for people to extend the level of knowledge and the level of education further

than a limit placed by the communist regime. All people received about equal pay for full-time work. Today, differences in the level of education and more varied economic opportunities are gradually changing the socioeconomic structure. It is possible that future studies might show a stronger SES effect. It should also be kept in mind that SES in this study was a student-reported variable, therefore, it cannot be assumed to be highly valid.

Students in the specialized high schools scored higher on the post-test than students in general high school. The difference was small but significant. This finding might be explained by the fact that students of specialized high schools had been previously exposed to economic concepts in previous coursework focused on business concepts. Their economics course was also longer with one semester of microeconomics in 11th grade and a full year of macroeconomics in 12th grade. Furthermore, the education of students attending the specialized high schools is focused on the business and economics field, which may influence their attitude toward the subject. Further study on student attitudes would shed additional light on this possibility.

Teacher training by JA showed a negative effect on student post-test scores. Students of teachers trained by JA scored lower on the post-test than students of teachers not trained by JA, and this difference was significant. This finding might be explained by the focus of JA training. The JA programs are more focused on business concepts than on economics topics, per se. JA conducts programs in running a business for students of high schools in Tirana and other cities. Although the JA programs are thought by some to be economics education programs, the results of the present study showed that JA teacher training programs were actually detracting from student learning of economics concepts. It is possible that JA trained teachers emphasize microeconomics, including business costs, more

heavily than other economics concepts, although the finding that students did relatively less well on microeconomics than on macroeconomics does not support this conclusion. Further research including more information about the structure of training and the concepts included will shed more light in explaining this unexpected finding. The relative effects of different types of training should be of interest to the Albanian Ministry of Education, as this office plans future teacher training programs.

In summary, the present study found that training of teachers in market-based economics and economics teaching methods offered by the CEE, had a positive effect on students' learning of economics. This finding is supported by Saunders, et al. (2004), who concluded at the time of their study that "NCEE's in-service teacher training workshops and its efforts to have workshop participants develop effective teaching materials and techniques are beginning to have a positive influence on student test performance in countries where they have been used most extensively" (p. 60). Because all economics teachers in the general high schools do not have prior educational backgrounds in economics, this finding is important as further professional development is designed for Albanian educators. In addition, further study into how the materials and training of the CEE have helped to develop economics understanding in high school students would help the Albanian education community to more precisely focus their teacher training. For example, should the Albanian Department of Education translate more CEE curriculum materials and lessons for Albanian economics teachers? Should they employ teachers previously trained by CEE to provide professional development for other teachers? They might also consider how CEE-trained personnel might partner with other agencies that provide teacher training related to economic education, such as Junior Achievement Albania, which teaches the practical ways of running

a business or the Central Bank of Albania that provides training in banking and financial fields. Because CEE training seems to be effective in creating better economics teachers, incorporating their materials and methods into other training may have additional benefit to Albanian teachers and their students.

References

- Accession of Albania to NATO*. (n.d.). Retrieved on March 24, 2009, from
http://en.wikipedia.org/wiki/Accession_of_Albania_to_NATO#cite_note-xinhua-3
- Agarwal, R. & Day, A. E. (Spring 1998). The impact of the internet on economic education. *The Journal of Economic Education*, 29(2), 99-110
- Albania at a glance*. World Bank 2008. Retrieved on July 10, 2008, from
http://devdata.worldbank.org/aag/alb_aag.pdf
- Albania*. Central Intelligence Agency. (n.d.). The World Fact Book. Retrieved on September 20, 2008, from
<https://www.cia.gov/library/publications/the-world-factbook/geos/al.html>
- Allgood, S. & Walstad, B.W.,(Spring 1999). The longitudinal effects of economic education on teachers and their students. *The Journal of Economic Education*, 30(2), 99-111.
- Arias, JJ. & Walker, M. D.,(Fall 2004). Additional evidence on the relationship between class size and student performance. *The Journal of Economic Education*, 35(4), 311-329.
- Arnold, R. A. (2001). *An introduction to economics*. South-Western College Publishing.
- Audet, M., Boccanfuso, D., Makdissi, P. (2006). *The geographic determinants of poverty in Albania*. Groupe de Recherche en Economie et Developpement International. Working Paper 06-12. Retrieved on July 10, 2008, from
<http://pages.usherbrooke.ca/gredi/wpapers/GREDI-0612.pdf>
- Baumol, W. J., & Highsmith, R. J. (1988). Variables affecting success in economic education: preliminary findings from a new data base. *AEA Papers and*

- Proceedings, High School Economics*, 78(2), 257-262.
- Becker, W., Greene, W. & Rosen, S. (1990). Research on high school economics. *Journal of Economic Education*, 21(3), 231-245.
- Berryman, Sue E.,(May, 2000), *Albania's education sector: Problems and promise, human development sector unit Europe and Central Asia Region*
World Bank. Retrieved on May 25,2008, from
http://www.see-educoop.net/education_in/pdf/sector_synthesis-alb-enl-t05.pdf
- Coiro, J., Knobel, M., Lankshear, C., & Leu, D. J. (2008). Central issues in new literacies and new literacies research. *Handbook of new literacies research* (pp. 1-22). New York: Lawrence Erlbaum Associates. Retrieved on August 2009 from
<http://en.wikipedia.org/wiki/Literacy>
- Dawson, G. and Bernstein, I. The effectiveness of the introductory economics courses in high schools and colleges New York: New York University Press, 1967. 62
- Borg, M. O., and S. L. Shapiro. (1996). Personality type and student performance in principles of economics. *Journal of Economic Education*, 27(1), 3–25.
- Bosshardt, W., & Watts, M. (1994). Instructor effect in economics in elementary and junior high schools. *Journal of Economic Education*, 25(3), 195-211.
- Bosshardt, W. and Watts, M. (2001). Comparing student and instructor evaluations of teaching. *Journal of Economics Education*, 32(1), 3-17.
- Brasfield, D. W., D. E. Harrison, and J. P. McCoy. (1993). The impact of high school economics on the college principles of economics course. *Journal of Economic Education*, 24(2), 99-110.
- Bridges, D. E., Casavant, K. L., (1999), Does gender, class standing and high school

- economics influence student's economic learning?
Selected Paper of the 1999 Annual Meeting, July 11-14, 1999, Fargo, North Dakota.
 Retrieved on August 2008, from <http://purl.umn.edu/35699>
- Brue, S. and MacFee, C. (1995). From Marx to markets: Reform of the university economics curriculum in Russia. *The Journal of Economic Education*, 26(3), 182–194.
- Country Snapshot, Albania Economist Intelligence Unit*. (n.d.). Retrieved on August 15, 2008 from
[http:// www.alacrastore.com/country-snapshot/Albania](http://www.alacrastore.com/country-snapshot/Albania)
- Dale, L., (Sept 2005), Economics and business education: a comparative study of the Ukraine and the United States. *Journal of Economics and Economic Education Research*, 6(3), 105-115.
- Dhima, L.(2003), Report: *Economic education curriculum in general high school and specialized high school, actual assessment and future recommendations*. (Institute of Curriculum and Training)
- Dhima, L. (2002), Report: *Economic education curriculum in K-8, actual assessment and future recommendations*. (Institute of Curriculum and Training)
- Dills, A. K. & Placone, D, (January 23, 2008). *Teacher attitudes and teacher knowledge in economic education*. Retrieved on August 26, 2008 from
<http://ssrn.com/abstract=1090639>
- Duthilleul, Yael , Artan Hoxha, Stavri Llambi, Linda Gjermani, Ilir Kokomori, and Lida Kita. (1999). *Issues and challenges in education governance*. World Bank, Washington, D.C.

- Dynan, K., and Rouse, C. (1997). The underrepresentation of women in economics: A study of undergraduate economics students. *Journal of Economic Education*, 28, 350 - 368.
- Economic, personal finance & entrepreneurship education in our nation's schools in 2007*, A Report Card Survey of The States, Retrieved on August 2008, from <http://www.councilforeconed.org/about/survey2007/NCEESurvey2007.pdf>
- Espey, M., (1997). Testing math competency in introductory economics. *Review of Agricultural Economics*, 19(2), 484-491
- Evans, O. M., (1992). An estimate of race and gender role-model effects in teaching high school. *Journal of Economic Education*, 23(3), 209-217
- Garson, G. D., (n.d.). *Stat notes: Topics in Multivariate Analysis*. Retrieved on April 3, 2010 from <http://faculty.chass.ncsu.edu/garson/PA765/statnote.htm>
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update (4th ed.)*. Boston: Allyn & Bacon
- Gremmen, H.J.F.M., & Potters, J.J.M. (1997). Assessing the efficacy of gaming in economics education. *Journal of Economic Education*, 28(4), 291-303
- Hazans, M. & Trapeznikova, I., (28 September 2006), *Access to Secondary Education in Albania: Incentives, Obstacles, and Policy Spillovers Biceps Working paper*. Retrieved on September 5, 2008 from <http://ssrn.com/abstract=912810>
- Hodgin, R. F. & Marchesini, R. (2003). Measuring teacher efficacy for use in economic education. *Journal of Economics and Economic Education Research*, 4 (3), 3-15
- Hoxha, Artan; Llambi, Stavri; Gjermani, Linda; Kokomori, Ilir; Duthilleul, Yael y Kita,

- Lida. Decentralizing education in transition societies: Washington, DC: World Bank; March 2001.
- Human Development Sector Unit Europe and Central Asia Region
- Report No. 31983-AL, March 2005, *Albania Poverty and Education in Albania: Who Benefits from Public Spending?* Retrieved on August 25, 2008, from http://siteresources.worldbank.org/INTPSIA/Resources/490023-1120841262639/Albania_PSIA_Education.pdf
- IMF Country Report* No. 08/128, (April 2008), Retrieved on March 15, 2009, from <http://www.imf.org/external/pubs/ft/scr/2008/cr08128.pdf>
- IMF Country Report* No. 08/267, (August 2008), Retrieved on March 15, 2009, from <http://www.imf.org/external/pubs/ft/scr/2008/cr08267.pdf>
- IMF: Europe hit by major shocks, growth to slow sharply*, (08 October 2008), Retrieved on March 15, 2009, from <http://www.eurobusiness.com/news-eu/122347182271>
- INSTAT (Institute of Statistics, Albania) (2005), Retrieved on April 17, 2008, from <http://www.instat.gov.al/>
- International Standard Classification of Education*, ISCED 1997 United Nations Educational, Scientific and Cultural Organization (May 2006), Retrieved on July 2008, from http://www.uis.unesco.org/TEMPLATE/pdf/isced/ISCED_A.pdf
- Junior Achievement Albania, Yearly Report (2007).
- Junior Achievement, Our history. Retrieved on August 20, 2008, from http://www.ja.org/about/about_history.shtml
- Kardash, N. (2006). Analysis of economic knowledge among Kansas school children as

- demonstrated on the 2005 Kansas Social Studies Assessment. (Doctoral dissertation, Graduate School of the University of Kansas, 2006)
- Kovzik, A. and Watts, M. (2002) 'Reforming Undergraduate Economics Instruction in Russia, Belarus, and Ukraine. Ukraine: Curriculum, Personnel, Clientele Issues', in M. Watts and W. Walstad (eds) *Reforming Economics and Economic Teaching in Transition Economies*, Northampton, MA: Edward Elgar
- Korniza Kurrikulare e Gjinnazit*, IKT 2008, Retrieved on April, 2009, from http://www.ikt.edu.al/index.php?option=com_content&view=category&layout=blog&id=45&Itemid=84
- Lee, V. E. (2000). "Using hierarchical linear modeling to study social contexts: The case of school effects". *Educational Psychologist*, 35(2), 123-141
- Lopus, J.S. (1997). Effects of the high school economics curriculum on learning in the college principles class. *Journal of Economic Education*, 28(2), 143-153
- Lynch, G. (1990). The effect of teacher coursework on student learning: Evidence from the TEL. *Journal of Economic Education*, 21(3), 287-296.
- Mancellari, A., Haderi, S. and Qirici, S.(2006) *Ekonomia 3 Per shkollen e mesme*. Shtepia Botuese PEGI, Tirana, Albania.
- Mancellari, A., Haderi, S. and Qirici, S., Kola, T., Sykja, I.(2006) *Ekonomia e Pergjitheshme 2 Per shkollat e mesme teknike -ekonomike*. Shtepia Botuese e Librit Shkollor.
- Marlin, Jr., J.W.,(Winter 1991). State mandated economic education, teacher attitudes, and student learning, *Journal of Economic Education*, 22(1), 5-13
- MASH (Ministry of Education and Science), *Program Orientues per Pergatitjen e Provimit*

- Kombetar te Matures Shteterore per Arsimin e Mesem ne Lenden: Ekonomi dhe Hyrje ne Filozofi*, Viti mesimor 2007-2008, Tirane 2008 Retrieved on March, 2008 from <http://www.mash.gov.al/matura/index.html>
- Maxwell, L. N., Mergendoller, R. J. & Bellisimo, Y. (Fall 2005). Problem-based learning and high school macroeconomics: a comparative study of instructional methods. *The Journal of Economic Education*, 36(4), 315(17)
- Moyer, M. E. and Paden, D. W. (September 1968). On the efficiency of the high school economics course. *American Economic Review*, 58(4), 870-76
- Myatt, A. and Waddel, Ch. (Summer 1990). An approach to testing the effectiveness of the teaching and learning of economics in high school. *The Journal of Economic Education*, 21(3), 355-63
- Myteberi, F. (1999) *Education for Peace, Stability and Democracy in Albania*, Individual Country Reports. Retrieved on July 14, 2008, from <http://www-gewi.kfunigraz.ac.at/csbsc/Albania.html>
- OECD (Organization for Economic Cooperation and Development). 2005.
- Ofer, G. and Polterovich, V. (2000). Modern Economics Education in TEs: Technology Transfer to Russia. *Comparative Economic Studies*, 42, 5–35
- Ono, L. J. (2005).Greenfield Academics. Beyond Transition, *The Newsletter About Reforming Economies*. Volume 16 (3) Retrieved on August 2008 from <http://www.worldbank.org/transitionnewsletter>
- Palmer, J. Carliner, G. & Romer, T.(Spring 1979). Does high school economics help? *Journal of Economic Education (pre-1986)*, 10(2), 58-62
- Palomba, G. & Vodopivec, M., March, (2000), *Financing, Efficiency, and Equity in*

- Albanian Education*, World Bank Technical Paper No.512 World Bank Publication 2001-06.
- Peterson, N. (1992). The high school economic course and its impact on economic knowledge. *Journal of Economic Education*, 23(1), 5-16.
- Phipps, B. & Clark, J.(1993). Attitudes towards economics: Uni-or Multidimensional? *Journal of Economic Education*, 24(3), 195-211
- Pleskovic, B., Åslund, A., Bader, W., Campbell, R., (January 2002)
Capacity Building in Economics Education and Research in Transition
Economies Working Paper No.2763 Retrieved on August 17, 2008, from
<http://ssrn.com/abstract=634476>
- Rashid, Mansoor, and Vajeera Dorabawila. (1999). Poverty, the Labor Market, and Public Programs: Household Welfare in Pre-Crisis Albania. World Bank, Washington, D.C.
- Republic of Albania, Council of Ministers, Budget* (2009), Retrieved on February 5, 2009, from
<http://www.km.gov.al/showalbum.php?albumID=28&gj=gj1&start=12>
- Robb, R., and Robb, A. (1999). Gender and the study of economics: The role of gender of the instructor. *Journal of Economic Education*, 30(2), 3-19.
- Saunders, P., Rebeck, K., & Saunders, K. T. (2004) High school economic education in Eastern Europe: Findings from five nations. *Journal of Economics and Economic Education Research*, 5(1), 49-65
- Shapiro, L. S. (1987). *Applied Economics: A Program of Junior Achievement*. Junior Achievement

- Soper, J. C. & Walstad, W.B., (1983). On measuring economic attitudes *The Journal of Economic Education*, 14(4), 4-17.
- Stabilization and Association Process*.(n.d.). Retrieved on March 24, 2009 from http://en.wikipedia.org/wiki/Stabilisation_and_Association_Agreement
- Strom, J. R., (Spring 1979). Factors affecting the content of high school economics. *The Journal of Economic Education*, 10 (2), 30-37
- Stuart, Robert C., (Summer 2000). Introduction: Teaching modern economics in transition economies. *Journal of Comparative Economic Studies*, 42.
- Summary and Action Plan*, Energy Ministry of Albania (2008), Retrieved on June 5, 2008, from <http://www.mete.gov.al/news.php?idm=588&l=e>
- Svejnar, J.(2000). Economics Ph.D. Education in Central and Eastern Europe *Comparative Economic Studies*, 42, 37–50
- Tendjoukian, J. (2007). Restructuring and Growth in Albania: An Institutional Approach. EAEPE Conference 2007. Retrieved on June 10, 2008 from http://www.fep.up.pt/conferencias/eaepe2007/Papers%20and%20abstracts_CD/Tendjoukian.pdf
- The Transition Report of 2008 “Transition Growth”. Retrieved on March 15, 2009, from <http://www.minfin.gov.al/index.php?option=content&task=view&Id=83>
- The Council for Economic Education, About Us, Mission, 2009, para.2. Retrieved on January 3, 2009 from www.councilforeconed.org/about/
- The Council for Economic Education, About Us, Description, 2009, para.3. Retrieved on

- January 3, 2009 from
www.councilforeconed.org/about/
- The Council for Economic Education, EconomicsInternational (2006). Retrieved on
August 15, 2008 from
<http://www.councilforeconed.org/ei/>
- Tozer, E. S., Violas, C. P., Senese, G. (2005). *School and Society: Historically and Contemporary Perspectives*. McGraw-Hill College.
University of New York Tirana. Retrieved on January 27, 2009, from
<http://www.unyt.edu.al/>
- Walstad, W. B., & Soper, J. C. (1982). A model of economics learning in the high schools. *Journal of Economic Education*, 13(1), 40-54.
- Walstad, W. B., & Soper, J. C., (1989). What is high school economics? Factors contributing to student achievement and attitudes. *The Journal of Economic Education*, 20(1), 23-37
- Walstad, W. B. (1992). Economics instructions in high schools. *Journal of Economic Literature*, 30(4), 2019-2051.
- Walstad & Rebeck, (2001), *Test of Economic Literacy, 3rd Edition*
- Walstad, W. & Rebeck, K. (2001). Teacher and student understanding in the transition economies. *The Journal of Economic Education*, 32(1), 58–67.
- Watts, M. & Bosshardt, W. (1990). Instructor effects and their determinants in precollege economic education. *The Journal of Economic Education*, 21(3), 265–276.
- Watts, M. & Highsmith, R. (1992). International economics in U.S. high schools: Results

from a National Survey. *The Journal of Economic Education*, 23(4), 291-314

Willison, S. & Kelly, P. P. (2004). Preparing economic educators for a New Era: An interdisciplinary model yields teacher and students gains. *Journal of Economics and Economic Education Research*, 5(2), 3-22.

Appendix A

TEST OF ECONOMIC LITERACY THIRD EDITION

Eastern European Form (TEL3-EE)

Directions

This test is designed to measure your understanding of basic economics. It is not necessary to have taken a high school course in economics to take this test. You may know something about economics from other courses you have taken or learned about the subject from other sources.

TEL3-EE Draft 2 p.1

TEST OF ECONOMIC LITERACY, Eastern European Form

1. (1A) In every economic system, people must choose how to
 - A. satisfy all of the wants of society.
 - B. make the best use of scarce resources.
 - C. create an equal distribution of income.
 - D. save money to reduce the national debt.

2. (4A) The opportunity cost of a new secondary school is the
 - A. money cost of hiring teachers for the new school.
 - B. cost of constructing the new school at a later date.
 - C. change in the annual tax rate to pay for the new school.
 - D. other goods and services that must be given up for the new school.

3. (6A) The specialization of labor usually results in
 - A. an increase in inflation.
 - B. a decrease in interdependence.
 - C. a more equal distribution of income.
 - D. an increase in output per hour worked.

TEL3-EE Draft 2 p.2

4. (12A) A decrease in real interest rates provides an incentive for people to save
- A. less and borrow less.
 - B. less and borrow more.
 - C. more and borrow less.
 - D. more and borrow more.
5. (13A) A student buys a sweatshirt from a store. The sweatshirt is on sale at a 20 percent discount off the regular price. In this exchange,
- A. both the student and the store benefit.
 - B. neither the student nor the store benefits.
 - C. the student benefits, but the store does not.
 - D. the store benefits, but the student does not.
6. (15A&B) Business firms wish to sell their products at high prices. Households wish to buy products at low prices. In a market economy this conflict of interest usually is resolved by
- A. lawsuits.
 - B. government.
 - C. competition.
 - D. collective bargaining.
7. (16A) Which would most likely increase the quantity of gasoline sold in a competitive market?
- A. An increase in the price of crude oil.
 - B. A decrease in the price of automobiles.
 - C. A decrease in the income of consumers.
 - D. An increase in taxes on gasoline producers.
8. (17A) In a competitive market, the price of shoes is likely to be increased by
- A. a decrease in the supply of shoes.
 - B. a decrease in the demand for shoes.
 - C. more capital investment in shoe factories.
 - D. new machines reducing the cost of shoe production.
9. (19A) If the government charges a new tax of one dollar on every pair of pants sold, which would most likely result?
- A. Consumers would pay a higher price and buy fewer pairs of pants.
 - B. Consumers would pay a higher price and suppliers would make larger profits.

- C. Consumers would pay a higher price and producers would sell more pairs of pants.
 - D. Suppliers would increase the quantity sold in order to make up for the taxes paid to the government.
10. (20A&B) A newspaper reports, "COFFEE GROWERS MONOPOLY BROKEN INTO SEVERAL COMPETING FIRMS." If this is true, we would expect the coffee-growing industry to
- A. increase output and decrease price.
 - B. increase output and increase prices.
 - C. decrease output and increase prices.
 - D. decrease output and decrease prices.
11. (21A) In a market economy, high wages depend mostly on
- A. minimum wage laws.
 - B. actions of government.
 - C. high output per worker.
 - D. responsible business leaders.
12. (22A&B) From an economic point of view, which approach to controlling pollution is most efficient?
- A. Abolish the use of toxic chemicals
 - B. Use economic resources to eliminate all pollution.
 - C. Reduce pollution as long as the additional benefits are greater than the additional costs.
 - D. Adopt laws and regulations that prohibit economic activities that cause pollution problems.
13. (25A&B) Gross domestic product (GDP) is a measure of
- A. the price level of goods and services sold.
 - B. total spending by federal, and local governments.
 - C. the quantity of goods and services produced by private businesses.
 - D. the market value of the nation's output of final goods and services.
14. (26A) An economy's potential output at any time is limited by
- A. the amount of money in circulation.
 - B. government regulations and spending.
 - C. business demand for final goods and services.
 - D. the quantity and quality of labor, capital, and natural resources.

15. (27B) An increase in aggregate demand would tend to result from
- A. an increase in tax rates.
 - B. a decrease in consumer spending.
 - C. a decrease in net export spending.
 - D. an increase in business investment.
16. (29A) Inflation is an increase in
- A. interest rates over time.
 - B. the standard of living over time.
 - C. the general level of prices over time.
 - D. real gross domestic product over time.
17. (35A&B) Specialization and division of labor by nations followed by increasing international trade probably would
- A. increase the level of worldwide unemployment.
 - B. increase total world production of goods and services.
 - C. lower living standards in the poor nations of the world.
 - D. eliminate differences in standards of living among nations.
18. (36A) If Britain has a comparative advantage over France in the production of cars, then
- A. the opportunity cost of producing cars in Britain is lower than in France
 - B. the opportunity cost of producing cars in Britain is higher than in France.
 - C. there are no gains from specialization and trade in cars between Britain and France.
 - D. only Britain will gain from specialization and trade in cars between Britain and France.
19. (39A) The exchange rate between the U.S. dollar and the German mark changes from \$1=1.8 marks to \$1=1.6 marks. This change means that
- A. American goods will be more expensive for Germans.
 - B. German goods will be more expensive for Americans.
 - C. there will be an increase in U.S. imports from Germany.
 - D. there will be a decrease in German imports from the U.S.
20. (40A) Which best measures a nation's standard of living over time?
- A. Rate of inflation.
 - B. Rate of unemployment.
 - C. Real income per capita.
 - D. Money income per capita.

Appendix B

QUESTIONNAIRE STUDENT INFORMATION FORM

Please complete the following form. If you experience difficulties, please ask your teacher.

Thank you for your time and participation.

1. Name of the student _____
2. Name of the school _____
3. Gender : F _____ M _____
4. It is your family on the income range of:
 - a. less than \$200 per month _____
 - b. between \$201 -\$ 500 per M _____
 - c. More than \$500 per M _____
5. Did you finish the elementary school in :
 - a. Urban: City of _____
 - b. Rural: town of _____
6. What level of education your parents have:

Father	Mother
a. High school _____	a. High school _____
b. University and above _____	b. University and above _____
7. Do you think the subject of economics is:
 - a. easy
 - b. medium difficult
 - c. difficult

8. Do you plan to continue further your education?

- a. No b. Yes

--- If "Yes" in which major?

1. Economics
2. Natural sciences
3. Social sciences
4. Other

9. Do you think the subject of economics is?

- a. Interesting
- b. Somehow interesting
- c. Not interesting

9. Please give any comment related with economics subject.

Appendix C

QUESTIONNAIRE

TEACHER INFORMATION FORM

Please complete the following form: If you have difficulties, please ask the researcher.

Thank you for your time and participation.

1. Name of the school _____
2. Gender: F____ M____ ; Age: _____
3. How many years have you been a teacher?
4. How many years have you been teaching economics?
5. Your academic degree is:
 - a. Bachelor
 - b. Master or above
6. Your undergraduate school major is:
 - a. Economics
 - b. Social Sciences
 - c. Natural Sciences
 - d. Other (specify) _____
7. Did you have any training in economics from?
 - a. Ministry of education/ institute of training.
 - b. Junior achievement seminars
 - c. NCEE seminars

- d. Other (specify) _____
8. Where did you learn the subject of economics?
- a. Undergraduate school
 - b. Secondary school
 - c. At NCEE seminars
 - d. At Junior Achievement seminars.
 - e. Other
9. Do you use other materials than the main textbook for teaching economics?
- a. Yes (please specify) _____
 - b. No
10. Do you use different type of teaching methods other than the traditional one?
- a. Problem solving
 - b. Group discussion.
 - c. Simulation
11. Do you participate in extracurricular activities related with economic education?
- a. Yes (Please specify) _____
 - b. No

Appendix D

RELIABILITY STATISTICS

Table 1.
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.697	0.703	20

Table 2.
Item Statistics Post-test scores

	Mean	Std. Deviation	N
q1	0.7379	0.43995	1511
q2	0.8109	0.39173	1511
q3	0.8224	0.38229	1511
q4	0.4735	0.49949	1511
q5	0.6741	0.46889	1511
q6	0.6741	0.46889	1511
q7	0.4243	0.49442	1511
q8	0.5342	0.49902	1511
q9	0.6495	0.47731	1511
q10	0.8125	0.39050	1511
q11	0.4228	0.49419	1511
q12	0.3766	0.48473	1511
q13	0.8224	0.38229	1511
q14	0.6318	0.48250	1511
q15	0.4189	0.49357	1511
q16	0.8670	0.33968	1511
q17	0.3966	0.48938	1511
q18	0.5135	0.50001	1511
q19	0.3167	0.46536	1511
q20	0.7141	0.45203	1511

Table 3.

<i>Summary Item Statistics</i>							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	0.605	0.317	0.867	0.55	2.738	0.032	20
Item Variances	0.209	0.115	0.25	0.135	2.167	0.002	20
Inter-Item Covariances	0.022	-0.002	0.054	0.055	-34.009	0	20
Inter-Item Correlations	0.106	-0.006	0.292	0.298	-45.694	0.003	20

Appendix E

PRE AND POST-TEST SCORES

General High Schools

TABLE 1
DISTRIBUTION OF TEST SCORES FOR GENERAL HIGH SCHOOL STUDENTS

PRE-TEST				POST-TEST			
Q#	Frequency	Percent	Cumulative Percent	Q#	Frequency	Percent	Cumulative Percent
1	5	0.4	0.4	1	0	0	0
2	17	1.3	1.7	2	2	0.2	0.2
3	26	2	3.7	3	3	0.2	0.4
4	61	4.7	8.4	4	9	0.7	1.1
5	99	7.6	16	5	22	1.7	2.8
6	116	8.9	24.9	6	53	4.1	6.8
7	136	10.4	35.3	7	48	3.7	10.5
8	134	10.3	45.6	8	68	5.2	15.7
9	144	11.1	56.7	9	103	7.9	23.7
10	142	10.9	67.6	10	133	10.2	33.9
11	123	9.4	77	11	117	9	42.9
12	111	8.5	85.6	12	125	9.6	52.5
13	74	5.7	91.2	13	127	9.7	62.2
14	63	4.8	96.1	14	139	10.7	72.9
15	34	2.6	98.7	15	117	9	81.9
16	9	0.7	99.4	16	92	7.1	88.9
17	6	0.5	99.8	17	67	5.1	94.1
18	2	0.2	100	18	50	3.8	97.9
19	0	0		19	20	1.5	99.5
20	0	0		20	7	0.5	100
Total	1302	100		Total	1302	100	

Specialized High Schools

Table 2.

DISTRIBUTION OF TEST SCORES FOR SPECIALIZED HIGH SCHOOL STUDENTS

PRE-TEST				POST-TEST			
Q#	Frequency	Percent	Cumulative Percent	Q#	Frequency	Percent	Cumulative Percent
1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0
3	1	0.5	0.5	3	1	0.5	0.5
4	8	3.8	4.3	5	4	1.9	2.4
5	11	5.3	9.6	6	8	3.8	6.2
6	9	4.3	13.9	7	10	4.8	11
7	23	11	24.9	8	7	3.3	14.4
8	23	11	35.9	9	10	4.8	19.1
9	18	8.6	44.5	10	14	6.7	25.8
10	28	13.4	57.9	11	18	8.6	34.4
11	21	10	67.9	12	25	12	46.4
12	23	11	78.9	13	30	14.4	60.8
13	17	8.1	87.1	14	31	14.8	75.6
14	8	3.8	90.9	15	25	12	87.6
15	13	6.2	97.1	16	10	4.8	92.3
16	4	1.9	99	17	12	5.7	98.1
17	2	1	100	18	3	1.4	99.5
18	0	0	100	19	1	0.5	100
19	0	0	100	20	0	0	100
20	0	0	100	Total	209	100	
Total	209	100					

All High Schools

Table 3.

DISTRIBUTION OF TEST SCORES FOR All HIGH SCHOOL STUDENTS

PRE-TEST				POST-TEST			
Q#	Frequency	Percent	Cumulative Percent	Q#	Frequency	Percent	Cumulative Percent
1	5	0.3	0.3	1	0	0	0
2	17	1.1	1.5	2	2	0.1	0.1
3	27	1.8	3.2	3	4	0.3	0.4
4	69	4.6	7.8	4	9	0.6	1
5	110	7.3	15.1	5	26	1.7	2.7
6	125	8.3	23.4	6	61	4	6.8
7	159	10.5	33.9	7	58	3.8	10.6
8	157	10.4	44.3	8	75	5	15.6
9	162	10.7	55	9	113	7.5	23
10	170	11.3	66.2	10	144	9.5	32.6
11	144	9.5	75.8	11	135	8.9	41.5
12	134	8.9	84.6	12	150	9.9	51.4
13	91	6	90.7	13	157	10.4	61.8
14	71	4.7	95.4	14	169	11.2	73
15	47	3.1	98.5	15	142	9.4	82.4
16	13	0.9	99.3	16	103	6.8	89.2
17	8	0.5	99.9	17	82	5.4	94.6
18	2	0.1	100.0	18	53	3.5	98.1
Total	1511	100	100.0	19	21	1.4	99.5

Appendix F

ITEM ANALYSIS

Specialized High Schools

Table 1.

Item Analysis Fundamental Concepts

	Q1	Q2	Q3	Q4	Q5
N	209	209	209	209	209
Mean	0.602	0.794	0.885	0.593	0.784

Table 2

Item Analysis Microeconomics Concepts

	Q6	Q7	Q8	Q9	Q10	Q11	Q12
N	209	209	209	209	209	209	209
Mean	0.789	0.550	0.574	0.746	0.803	0.435	0.220

Table 3.

Item Analysis Macroeconomics Concepts

	Q13	Q14	Q15	Q16
N	209	209	209	209
Mean	0.789	0.607	0.440	0.813

Table 4.

Item Analysis International Economics Concepts

	Q17	Q18	Q19	Q20
N	209	209	209	209
Mean	0.401	0.454	0.325	0.641

General High School

Table 5.

Item Analysis Fundamental Concepts

	Q1	Q2	Q3	Q4	Q5
N	1302	1302	1302	1302	1302
Mean	0.738	0.811	0.822	0.473	0.674

Table 6.

Item Analysis Microeconomics Concepts

	Q6	Q7	Q8	Q9	Q10	Q11	Q12
N	1302	1302	1302	1302	1301	1302	1302
Mean	0.674	0.424	0.534	0.649	0.812	0.423	0.377

Table 7.

Item Analysis Macroeconomics Concepts

	Q13	Q14	Q15	Q16
N	1302	1302	1302	1302
Mean	0.822	0.632	0.419	0.867

Table 8.

Item Analysis International Economics Concepts

	Q17	Q18	Q19	Q20
N	1302	1302	1302	1302
Mean	0.397	0.513	0.316	0.714

Appendix G

The HLM Model

The Student-Level Model

The level-one model is: $Y_{ij} = \beta_{0j} + r_{ij}$ where Y_{ij} is the post-test score for the i student at the j school, it is a function of the average achievement in school j (β_{0j}). The r_{ij} is the student's level error term.

The level-two model is: $\beta_{0j} = \gamma_{00} + \mu_{0j}$, where the average achievement of school j is the function of the grand mean of all the school means (γ_{00}) and μ_{0j} is the school level error term. The combined model is: $Y_{ij} = \gamma_{00} + \mu_{0j} + r_{ij}$

The Multi-Level, Unconditional Model

Before estimation of the levels one and two equations, the multilevel unconditional or null model was estimated to determine how much variability is within and between schools in the sample. This model answers the question, is there a difference between schools? The statistical output for unconditional model is in Tables 1 & 2 below.

Table 1.
Estimates of Fixed Effects for Unconditional Model

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	12.124	0.293	12.015	41.317	.00	11.485	12.764

a. Dependent Variable: post test scores.

Table 2
Estimates of Covariance Parameters for Unconditional Model

Parameter	Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Residual	11.049	0.403	27.37	.000	10.286	11.869
Intercept Variance [subject = schoolID]	0.936	0.420	2.22	0.026	0.387	2.260

a. Dependent Variable: post test scores.

From the tables above the estimated parameters are: The intercept $y_{00} = 12.12$ which represent the grand mean of the post-test scores. The intercept variance $r_{00} = .94$ represent between school variability. The residual 11.0 represents within schools variability.

The total variance in the model was $11.0 + .94 = 12$ which is low. Proportion of variance at the school level was $(.94/[.94 + 11]) = .08$ percent of total variability, which means that eight percent of total post-test scores variability occurred between schools. Both the intercept variance and the residuals were different from 0 and significant respectively at ($p < .001$; $p = .02$).

In order to explain the variability within schools, between students the level one variables were used. The level one covariate was added on the unconditional model. The first variable added to the model was gender with two categories, 1 male and 0 female. After adding the gender covariate the first level model was: $Y_{ij} = \beta_{0j} + \beta_{1j}(\text{gender}) + r_{ij}$, the second level model was not changing. But we had two level two equations: 1, $\beta_{0j} = y_{00} + \mu_{0j}$, and 2, $\beta_{1j} = y_{10} + \mu_{1j}$. The combined model was:

$$Y_{ij} = y_{00} + y_{10}(\text{gender}) + \mu_{0j} + \mu_{1j}(\text{gender}) + r_{ij}$$

The output of model with a covariate in level 1 which was gender is showed in Tables 3 & 4 below.

Table 3
Estimates of Fixed Effects for Level One Variable Gender

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	12.52188	0.32276	12.279	38.796	.00	11.82041	13.22335
SGEN	-0.84471	0.267192	11.933	-3.161	0.008	-1.42724	-0.26219

a. Dependent Variable: post test scores.

Table 4
Estimates of Covariance Parameters for Level One Variable Gender

Parameter	Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval		
					Lower Bound	Upper Bound	
Residual	10.765	0.394	27.27	.00	10.019	11.567	
Intercept + SGEN	UN (1,1)	1.074	0.501	2.143	0.03	0.430	2.681
[subject = schoolID]	UN (2,1)	-0.260	0.312	-0.833	0.40	-0.872	0.352
	UN (2,2)	0.479	0.343	1.396	0.16	0.117	1.951

a. Dependent Variable: post test scores.

The level one variable Track is added to the model. See results in table 5 & 6.

Table 5
Estimates of Fixed Effects for Level One Variable Track

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	15.742	0.750	12.34	20.97	.00	14.112	17.372
NSTRACK	-2.599	0.342	9.76	-7.58	.00	-3.365	-1.833

a. Dependent Variable: post test scores.

Table 6

Estimates of Covariance Parameters for Level One Variable Track

Parameter	Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval		
					Lower Bound	Upper Bound	
Residual	9.132	0.335	27.259	.000	8.498	9.813	
Intercept + NSTRACK	UN	6.114	2.712	2.254	0.024	2.562	14.588
[subject =]	UN	-2.357	1.220	-1.931	0.053	-4.748	0.034
	(2,1)						
	UN	1.083	0.630	1.719	0.086	0.346	3.389
	(2,2)						

a. Dependent Variable: post test scores.

The Table 7 below shows the output for Socioeconomic Status influence on the post-test scores.

Table 7

Estimates of Fixed Effects for Level One Variable SES

Parameter	Estimate	Std. Error	df	t	Si g.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	10.369	0.549	16.30	18.865	.00	9.205	11.532
SES	0.698	0.155	1644.3	4.502	.00	0.394	1.003

a. Dependent Variable: post test scores.

Table 8

Estimates of Covariance Parameters for One Level Variable SES

Parameter		Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Residual		10.791	0.390	27.632	.000	10.052	11.58
Intercept	UN	1.784	1.269	1.406	0.16	0.442	7.194
pt +	(1,1)						
SES	UN	-0.160	0.233	-0.685	0.493	-0.618	0.298
[subject	(2,1)						
t =	UN	.0149	0	.	.	.	.
schoolI	(2,2)						
D]							

a. This covariance parameter is redundant. The test statistic and confidence interval cannot be computed.

b. Dependent Variable: post test scores.

In the table below it is the output for the model with two level one covariates, the track and the social economic status.

Table 9

Estimates of Fixed Effects with Two Level One Covariates (Track; SES)

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	15.740	1.135	49.633	13.867	0	13.459	18.020
NSTRACK	-3.073	0.601	71.768	-5.106	0	-4.273	-1.873
SES	-0.006	0.319	1995.8	-0.019	0.985	-0.632	0.620
			02				
NSTRACK	0.177	0.204	1918.2	0.867	0.386	-0.224	0.579
* SES			61				

a. Dependent Variable: post test scores.

Table 10
Estimates of Covariance Parameters for Two Level One Covariates (Track; SES)

Parameter		Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Residual		8.739	0.308	28.369	.000	8.155	9.364
Intercept + NSTRACK	UN (1,1)	6.850	3.074	2.228	0.026	2.842	16.511
+ SES [subject = schoolID]	UN (2,1)	-2.488	1.267	-1.963	0.05	-4.973	-0.003
	UN (2,2)	1.107	0.688	1.609	0.108	0.327	3.746
	UN (3,1)	-.1310	0	.	.	.	.
	UN (3,2)	.1390	0	.	.	.	.
	UN (3,3)	.0437	0	.	.	.	.

a. This covariance parameter is redundant. The test statistic and confidence interval cannot be computed.

The effect of curriculum track was significant on the intercept following the same results from table 2. SES was not significant at .98. When level one covariates, track and SES were added to the model the variability within schools was reduced by $(11 - 8.7) / 11 = 21$ percent.

Table 11

Estimates of Fixed Effects for three level One Covariates (Track; SES; Gender)

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	15.292	0.822	11.939	18.587	0	13.498	17.085
SGEN	-0.864	0.288	9.512	-2.998	0.014	-1.510	-0.217
NSTRACK	-2.695	0.339	554.251	-7.942	0	-3.362	-2.028
SES	0.324	0.168	2640.656	1.931	0.054	-0.005	0.654

a. Dependent Variable: post test scores.

Table 12

Estimates of Covariance Parameters for Three Level One Covariates (Track; SES; Gender)

Parameter	Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Residual	8.089	0.275	29.416	.00	7.568	8.647
Intercept + UN	5.783	3.257	1.775	0.076	1.917	17.444
SGEN + (1,1)						
NSTRACK UN	-0.820	0.812	-1.01	0.313	-2.411	0.771
+ SES (2,1)						
[subject = UN	0.702	0.451	1.557	0.120	0.199	2.472
schoolID] (2,2)						
UN (3,1)	-2.024	0	.	.	.	.
UN (3,2)	.228	0	.	.	.	.
UN (3,3)	1.011	0	.	.	.	.
UN (4,1)	.190368 ^a	0	.	.	.	.
UN (4,2)	.133918 ^a	0	.	.	.	.
UN (4,3)	.058602 ^a	0	.	.	.	.
UN (4,4)	.120716 ^a	0	.	.	.	.

a. This covariance parameter is redundant. The test statistic and confidence interval cannot be computed.

b. Dependent Variable: post test scores.

When all of three variables of level 1 were added to the model the within schools variability was reduced by $(11-8)/11 = 27$ percent. So, three variables explained only 27 percent of the variability in the model.

Appendix J

CURRICULUM TRACK DIFFERENCES

Table 1
Comparison of Pre-Test Scores between Curriculum Tracks (General High Schools)

		Independent Samples Test									
		Levene's Test for Equality of Variances			t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2- tailed	Mean Diffe rence	Std. Error Difference	Lower	Upper	
Pre- Test	Equal variances assumed	0.66	0.41	-11.57	1299	.000	-1.97	0.17	-2.30	-1.63	
	Equal variances not assumed			-11.56	1290.9	.000	-1.97	0.17	-2.30	-1.63	

Appendix H

REGRESSION MODEL INTERACTION TERMS

The interaction terms entered in the regression model consisted of eight two-way interaction terms, including (student gender * curriculum track; student gender * socioeconomic status; curriculum track * socio economic status; teacher age * training, teacher age*student gender; years teaching economics* training; school type* socioeconomic status; school type* gender) and two three-way interaction term (gender* curriculum track* socioeconomic status; years teaching economics*trained by CEE*age).

Model three with interaction terms added very little (approximately 1.5%) to the explanatory power of the regressions. Two of the interaction terms were significant, but they are somewhat difficult to interpret and, as they add little to the explanatory power of the regression. The partial correlation for the interaction term teacher age by CEE training was -.139 and significant at $p < .001$, $\beta = -1.31$. The significance of this interaction term indicates that students of older trained teachers show overall lower levels of economic knowledge, as measured by the TEL post-test than do students of younger trained teachers. In other words, it seems that older teachers incorporated less of their training into their teaching, but additional research would be needed to support this claim. The second significant interaction term is years teaching economics by training. The partial correlation is .05, significant at $p = .03$, and $\beta = .21$. The explanation of this interaction term is that teachers with more years teaching economics and more training had students who scored better on the TEL post-test. Because the meaning of these two interactions together is unclear, perhaps contradictory, further study is needed to explore these factors. All the other interaction terms were not significant.