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A Systems Analysis of Slovakian Career and Technical Education

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The Slovak Republic became a new nation in central Europe after the Cold War. The nation gained its independence with the breakup of Czechoslovakia in 1993. As a nation state, the parliament of Slovakia established new institutions dealing with management of the state, the law, economic affairs, social services, and other subsystems. The new institutions were created with the goal of furthering democratic principles and enhancing a framework of a market economy. Integration of the new nation into the European Union (EU) and the North Atlantic Treaty Organization (NATO) is the Slovak Republic's highest foreign policy goal. The government is making efforts to conform to EU standards in the restructuring of its national legal and administrative systems and all other aspects of social and economic life.

Slovak Background

Political and Socio-Economic Context

The Slovak Republic is located in central Europe, with an estimated population of about five million people and a territory of 48,845 square kilometers. Its capital is Bratislava, which has a population of 452,000 inhabitants. The nation is ethnically diverse and is composed of the following nationalities: 85.7% Slovak; 10.6% Hungarian; 1.6% Roma (Gypsy); 1.1% Czech, Moravian or Silesian; 0.6% Ruthenian and Ukrainian; and 0.1% each German and

Poles (Central Intelligence Agency, 2002). The religious affiliation of the people of Slovakia is Roman Catholic 60.3%, atheist 9.7%, Protestant 8.4%, Orthodox 4.1 %, and other 17.5 % (Central Intelligence Agency, 2002). The languages of the nation are Slovak and Hungarian (Central Intelligence Agency, 2002).

Historically, the Slovaks were a nomadic Slavic tribe which united with the Bohemians by the end of the 9th century to form the Moravian Empire. Isolated by the Carpathian Mountains, the Slovaks were conquered when the Hungarians came to the Danube region. Until 1918, Slovakia remained under Hungarian domination, although culturally they were united with the Czechs and other Slavs (Shimoniak, 1970). Between 1918 and 1992, Slovakia was a part of Czechoslovakia. During World War II, a formally independent Slovak state existed that was a Nazi puppet government completely under German control. The Slovak Republic became an independent state on January 1, 1993, as a result of the Velvet Revolution which separated the country from the former Czechoslovak Federal Republic (Kirschbaum, 1995).

After gaining its independence, the Slovak Republic became a parliamentary democracy with a unicameral legislature, the *Narodan Rad Slovenskej Republiky* or National Council of the Slovak Republic, composed of 150 members who are elected by a direct vote of the people for four-year terms. In 1996, the National Council divided the nation into 8 counties (*kraj*) and 79 districts (*obvod*). There are regional and district offices that provide general and specialized state administrative functions. In addition, there are 2,871 local governments providing municipal services at the community level (Okruhlicova, 2002).

Slovakia continues to have difficulty in its transition from a centrally planned economy to a modern market-driven economy. In 1999, an economic slowdown occurred, stemming from fiscal deficits, a growing external debt, and persistent corruption. In 2000, while the Gross Domestic Product (GDP) growth was a sluggish 2.2%, positive developments occurred, such as a foreign direct infusion of investment of \$1.5 billion, strong export performance, restructuring and privatization of the banking industry, the entry of Slovakia into the Organization of Economic Cooperation and Development (OECD), and efforts to stem corruption. Further privatization of the economy, maintaining a balanced budget, and unemployment reduction are challenges and issues that continue to face the government.

Major industries in Slovakia are steel and nonferrous metals, chemicals, and light manufacturing, including food, paper and printing, ceramics, textiles, furniture, and rubber products. Most of the labor force is employed in the industrial and service sectors (The Slovak Republic Government Office, 2002).

Educational System

The School Act established an education system consisting of three levels: primary, secondary, and higher education. The primary and secondary school system was divided into the following: basic schools; secondary schools, including grammar schools (*gymnasia*), secondary specialized schools (such as secondary industrial schools, business academies, hotel academies, and conservatories), and secondary vocational schools (including vocational schools, training centers and workshops); and special needs schools (Srankova, 2002).

Slovak children attend basic schools for nine years. During basic school, students acquire an understanding of general subjects, including instruction in the Slovak language, mathematics, and science. Students also learn basic manual skills, such as the manipulation of simple woodworking and metalworking tools and the use of drawing instruments. Basic school education provides a basis for academic subjects in the gymnasium or vocational training in secondary vocational schools.

The gymnasium is an academic high school that prepares students for the university. In contrast, special needs schools provide education and life skills training for students with

mental, physical, and behavioral disabilities, and those in health care institutions. Secondary vocational schools prepare students for immediate employment upon graduation.

Purpose of the Study

After gaining its independence, the government of Slovakia created a new educational system incorporating career and technical education (CTE). The purpose of this study was to examine the Slovakian system of CTE within the nation's educational system and how the political, cultural, and economic conditions existing in Slovakia influence the country's CTE system.

This study was an analysis of the organization of the CTE system in the Slovak Republic. CTE in Slovakia is dynamic and is undergoing changes because of the transition of a former Soviet satellite state to a democratic free-market economy. This political and economic shift over the past 15 years, coupled with changes in the global economy, the closing of inefficient industrial plants subsidized by the former communist system, and the emergence of the service sector, have changed the environment in which Slovak career and technical institutes exist. These economic conditions, combined with the need for continuing education and life-long learning experiences for experienced workers, have implications for the changes faced by United States and European industrial educators.

Methodology

Systems analysis, a qualitative method, was chosen to analyze the CTE and training system in Slovakia. According to Patton (2002), the foundational question used in systems analysis is "how and why does this system as a whole function as it does?" (p. 119)

The epistemological foundations of the systems perspective and systems theory is based on a holistic inquiry. Patton (2002) described systems theory as "changes in one part lead to changes among all parts and the system itself" (p. 120). Systems analysis was heavily influenced by social science methods and derives from research in organization theory (Czarniawska, 1998; Lincoln, 1985). The systems approach seeks to find meaning in holistic views of programs, organizations, entire societies, and the world (Wallerstein, 1980). Systems theory was used to frame Slovakian CTE because an understanding is needed of the transmutation of the state's social and economic environment.

The study was based on research conducted as part of a two-week summer program for eight American university lecturers in Slovakia organized by the Slovak Academic Information Agency (SAIA) and funded by a Fulbright-Hayes grant. The American teachers learned about the cultural, political, educational, and social changes occurring in Slovakia as part of a five-week stay in Poland and the Slovak Republic. During the stay in Slovakia, the group traveled to Bratislava and Kosice. In both cities the group participated as an audience in a series of lectures by educators, public officials, economists, and bankers.

Opportunistic (or emergent) sampling was employed for the study (Patton, 2002). Interviews were conducted by the researcher with vocational educators in the Ministry of Education; CTE schools; and universities in Bratislava, Modra, Nitra, and Kosice. This group of CTE educators became the sample population for the study. Tight constraints under the terms of the Fulbright-Hayes grant limited the number of interviews conducted by the researcher. The help of a translator was needed to communicate with the Slovak educators during interviews; when a translator was not available, interviews could not take place. Immediate decisions about sampling had to be made in order to take advantage of opportunities that presented themselves after the field work resulted in emergent sampling that was open-ended with no predetermined outcomes, and interviews were conducted without predetermined questions (Patton, 2002).

Findings

CTE and training in Slovakia encompasses both secondary- and postsecondary-level schools. Prior to 1989, CTE was considered a priority because of the socialist state's ideological commitment to promoting the interests of the working class (Shimoniak, 1970). Now, secondary CTE schools have a less defined mission. Of secondary-aged students, 80% attended secondary vocational or specialized schools, while 20% attended the gymnasias. Admission to each type of school was based on quotas, counselors' advisement, teachers' written comments, and entrance exams in basic schools. Financial incentives to attend specialized schools and salaries for vocational school graduates encouraged enrollments (Jakubova, 2002).

There are three basic types of secondary level CTE: vocational schools, secondary vocational schools, and specialized secondary schools. Vocational schools provide CTE and training for semi-skilled jobs in manufacturing. Such training is usually for students who have not completed the ninth grade and takes place in secondary vocational schools. The training is concluded with a final examination. The vocational schools often occupy the same location and are within the administration of the secondary vocational schools.

Secondary vocational schools (SVS) prepare students for skilled and technical and administrative occupations. The skilled track lasts from two to three years and is completed by taking a final examination. Two additional years of schooling upon completion of the Maturita examination, or "leaving exam", qualifies these graduates for admission to higher education. The technical or administrative track is four years in length and is completed by the Maturita exam (Srankova, 2002). Instruction in the secondary vocational schools is 50% practical training, carried out in school workshops, training centers in enterprises, and at work placements with employers. A recent trend is the inauguration of new, smaller secondary vocational institutions in the private sector by individuals, corporations, and churches (Mistrik, 2002).

Specialized secondary schools (SSS), which last four years, provide instruction leading to careers as qualified professionals in lower- and middle-management positions in technology, economics, health care, social and legal work, administration, and arts and culture. The specialized secondary schools are more theoretical than secondary vocational institutions. About 40% of the instruction is in general education. The academic courses are geared to practical application to the field of specialization. Completion of SSS and passing the Maturita prepare students for university study or for lower- and mid-level white-collar specialist jobs (Jakubova, 2002).

An example of a specialized secondary school visited during the research for this paper was the winery school at Modra. Slovakia is renowned for its wine, and Modra is in the heart of the wine region; the wine school was established in 1865 to train vintners. Today it is a modern facility with the latest in appropriate technology for cultivation of vineyards and the manufacture of wine. Graduates can find immediate placement both in the Slovak wine industry and in wineries across Europe.

Continuing Education and Life-long Learning

Under the socialist regime, adult education was operated by the various economic sector ministries who had their own training institutions and requirements for human resources development. State-run continuing education ended with independence, and life-long learning providers are now privatized.

Little thought has been given to rationalizing the system of adult learning. The Ministry of Education is preoccupied with running secondary vocational and specialized secondary schools, while the focus of the Ministry of Labor, Social Affairs, and Family is retraining for the unemployed. Finally, in 1997, the National Council enacted the Law on Further Education that put in place conditions and rules on life-long learning and placed this responsibility with

the Ministry of Education. According to [Mistrik \(2002\)](#), the law established guidelines on educational institutions and the certificates awarded by the schools.

[Dubrava \(2002\)](#) explained that Volkswagen was an example of one foreign firm that has taken over CTE and human resources development. The corporation acquired the automobile assembly plant in Bratislava in 1993. Management saw the need for training line personnel and instilling the Volkswagen corporate culture in the plant's employees. Volkswagen contracted through the European Union to open an in-service training program, which is now operated by Transfer Slovensko in Bratislava.

Another example is the Technical University (TU) at Kosice. TU pioneered distance education and e-learning in Slovakia. The mountainous terrain and transportation infrastructure make access to universities for continuing education difficult for professional workers from smaller communities. The TU library and its Department of Computer and Informatics developed distance learning capability for continuing education opportunities for librarians in locations around the nation. TU has now branched out into distance learning for other disciplines, including instruction in networking and other systems of information technology.

Training for Managers of Vocational Schools

Principals and their assistants at vocational schools must pass a two-year course in school management. Courses have been established by the Ministries of Education, Economy, and Agriculture, and by county training centers. Higher specialized training is conducted under the Strategic Management and School Quality Program and is offered in cooperation with the Pedagogic Institute in Vienna and the Methodological Center in Banska Bystrica ([National Observatory, 1999](#)). A pilot training program was established by a private firm. Distance learning strategies have also been utilized to train CTE and training managers by a unique system of international cooperation through City University of Bellevue, Washington, USA ([Haviar, 2002](#)).

Challenges and Issues

Labor Market Research

Before the Velvet Revolution, CTE and training research were conducted by the Research Institute of Vocational Education in Prague and, to some extent, the Research Institute of Pedagogy in Bratislava. With independence, the connection with Prague was lost. The Research Institute of Pedagogy became the National Institute of Pedagogy in 1996, but it conducts only general education research. In 1999, responsibility for research in CTE was transferred to the State Institute of Vocational Education (the SIOV, for its Slovak name, Statny Institut Odborneho Vzdelavania). Labor market research is conducted by the Research Institute of the Ministry of Labor, Social Affairs, and Family. The organization's research covers employment and unemployment, socio-economic change, labor market conditions, and other related issues ([National Observatory, 1999](#)).

Agencies Responsible for CTE and Training

Since CTE is a socially constructed field driven by public labor and education policy, it is important to understand the governmental entities that are responsible for its organization and administration. The dual system of general education and CTE in Slovakia has contributed to confusion over the direction taken by all of the various agencies involved in conducting the vocational schools ([Mistrik, 2002](#)).

These agencies include the Ministry of Education; the sector ministries of Economy, Agriculture, and Construction; regional (county) offices and district offices; and the SIOV.

The Ministry of Education has overall responsibility for education policy, implementation strategy, and legislation. In addition, separate sector ministries for Economy, Agriculture, and Construction are founders of secondary vocational schools. As such they invest in and maintain the schools by providing educational materials, curriculum, and technology for their schools.

Regional (county) offices and district offices are located in each of the 8 administrative regions and in the 79 district offices of the Slovak Republic. These offices administer and implement policy at their respective levels. The county offices serve as founders of secondary vocational schools in their areas, and the county departments of schools manage them. Secondary schools are managed by a local principal or director. The district offices manage local primary (basic) schools. Local school boards define local education policy carried out by the school principal.

The SIOV is a section within the Ministry of Education. It plays an important role in coordinating and implementing CTE and training policy for secondary vocational and specialized secondary schools within the Slovak Republic. The Institute is charged with providing information and studies on CTE and training to the Education Ministry, and is involved in forecasting labor force needs, training vocational teachers, and providing methodological services (Mistrik, 2002).

Legislation

The Slovak Republic adopted the education legislation of the Czechoslovak Republic. The constitution guarantees every citizen the right to a free education, and to be able to "choose a profession and the opportunity to train for that profession, as well as the right to undertake and carry out other economic activities" (National Observatory, 1999, p. 61).

Laws related to CTE and training are encompassed in the education laws of Slovakia. The most recent legislation affecting CTE passed by the National Council transferred control of specialized secondary schools from the Ministry of Education to County Offices, transferred financing to the Ministry of Interior, and reintroduced the 10-year compulsory education requirement (Okruhlicova, 2002).

Bilateral and Multilateral Agreements for CTE

The Ministry of Education and Slovakian vocational schools welcome assistance from foreign programs. These programs have made significant contributions to the analysis of CTE and methods for improvement. They have facilitated the transfer of experience, curriculum, methodology, and new forms of CTE and training to the Slovak vocational schools and teachers. Vocational teachers have participated in exchange programs with other member states of the European Union (Srankova, 2002).

One foreign assistance program is the Phare program. Originally established by the European Union to aid Poland and Hungary, the program has been extended to other central and eastern European nations. Phare was established to improve the education of engineers and other graduate professionals in the area of production and services, and to prepare Slovakia for integration into the European Union. The Phare agenda assists the Minister of Education in establishing directions toward reform of CTE, the general basic and secondary education system, continuing education, and strategic CTE modernization.

Jakubova (2002) said that the SIOV is the Slovak contact for international CTE and training programs, including the Phare program. The SIOV is the host of the National Observatory on CTE and training in the Slovak Republic. The Phare Vocational Education and Training Reform program implementation unit is located within the SIOV and is responsible for

developing a new model for CTE in 20 pilot secondary vocational and specialized secondary institutions. The program has as its base the creation of a vocational guidance program that provides education counselors in each of the pilot schools.

The Vocational Information Resource Center was established to prepare and disseminate vocational information to participants in the counseling program. Within the Phare program, Slovakia participates in the Phare Cross-Border Cooperation program with Austria, aimed at inspiring entrepreneurial spirit in secondary school graduates and the Multi-Country Phare program, which finances a distance learning network serving five local centers and a principal center at Technical University in Kosice. The SIOV will also be participating in the Leonardo da Vinci program sponsored by the EU and the European Center for the Development of Vocational Training (CEDEFOP).

In addition, the Slovak Republic participates in several bilateral assistance and cooperation programs. These bilateral programs include an agreement with the TIBS Project of the Netherlands, which established the Center for New Technologies in flexible production automation at the Secondary Industrial School of Machinery at Martin; the Omega Project, another Dutch-sponsored program for modernization of electro-technical education; a German-sponsored CAD design center for engineering and construction trades at Povazska Bystrica; and the Transforma Project for training in automotive specialties, sponsored by Italy (Dubrava, 2002).

Future Needs

The transformation of CTE is linked to the transition of Slovakia's market economy. There is a constant need for vocational schools to adapt to new conditions and technological developments in the manufacturing and service sectors and to changes in the labor market. These transformations are hindered by insufficient financial resources, and by enterprises and other institutions which give priority to operational questions rather than educational needs. Innovations occur in secondary and post-secondary education, and in continuing education and training.

One area that should be addressed is the large number of governmental agencies managing CTE, each with competing agendas. The Ministry of Education, economic sector ministries, and county and district offices have their own plans and interests; the proliferation of agencies hinders clear and financially sound policies. Systematic cooperation, teacher compensation, financial resources, and an understanding of vocational and adult education problems are issues which must be addressed. In-house discrepancies among the various agencies involved in adult and CTE allows for little progress in this arena.

Sakova (2002) said that preparation for membership in the European Union is an area in which these agencies involved in CTE are working. The government of the Slovak Republic has approved participation in the Leonardo da Vinci program. The educational system is also working on improving higher education facilities in an effort to conform to EU educational directives.

In the contemporary knowledge society, older and unskilled workers are in the greatest need of additional training, but are least likely to get it. Most training tends to concentrate on workers already in professional positions in big companies. Nations such as Slovakia should open education to more adults. Reforms should include incentives to both individuals and companies to offer training for employees, adopt education programs to fit the unpredictable schedules of adult learners, and improve the quality of such programs (Organization for Economic Co-operation and Development, 2002).

Another challenge for vocational educators in Slovakia is career guidance. Practices in career guidance should be examined within the context of encouraging life-long learning and

sustained employability for all, and linking life-long learning strategies to employability. Efforts should be made to link market-based learning efforts with those of publicly-funded services. Utilization of trade unions would provide career guidance for their members. For traditional school-aged students, career guidance should be included as a part of vocational curriculum (Watts, 2002).

One of the serious problems inherited from the socialist education training system concerned basic vocational schools at the secondary level. Narrow job specialization presented during secondary-level vocational training came at a time when students lacked the maturity to make reasoned choices between occupations. Vocational training provided practical instruction in highly specific occupations, but with little theoretical instruction. Graduates are only productive within the confines of their specialties and in the current technological configurations of the on-site practical training they received.

In the transition economy of Slovakia, many of the enterprises have closed. Apprenticeship and vocational schools are having increasing difficulty in finding enterprises willing to provide training placements for their students; students who complete vocational and apprenticeship training programs are having difficulty in finding jobs (World Bank, 1997).

Conclusions

CTE and training in Slovakia are complex systems of public secondary schools, postsecondary technical institutes, state-controlled higher education, proprietary universities, and continuing education opportunities in a variety of venues. The nation's transition from a totalitarian regime and command economy to a democracy and market-oriented economy will take time to accomplish. Sluggish economic conditions hamper growth. The large number of agencies with conflicting missions and needs for financial support causes further hindrances. Joining the European Union and participating in a number of multilateral and bilateral initiatives will help Slovakia. These initiatives encourage the vocational schools to adopt a curriculum of entrepreneurial spirit and capitalize on the nation's location as a tourist Mecca. Upgrades in technology and work on environmental and economic development will also further the development of Slovakian education.

Slovakia is a new state struggling to survive in a changing European and world economy while attempting to build a nation and national institutions. The Slovak system CTE is complex and is undergoing changes to meet the workforce needs of this new nation. Within the nation there is pressure to lower the number of vocational students pursuing specific job training, while increasing the output of secondary school graduates with general academic skills to enable them to pursue admission to higher education and future life-long learning opportunities. This is not unlike the conditions existing in CTE systems in the United States, where parents and students have turned their back on career and technical schools in hopes of seeking a more prestigious university education. The challenge for Slovak career and technical educators, as well as their counterparts in the U.S., is to find contextual learning situations that will enable vocational students to train for immediate job placement while gaining a wide range of general knowledge allowing the students to adapt to changing workforce needs.

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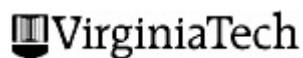
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