

**ACES EU CENTERS OF EXCELLENCE  
GRANT DELIVERABLE  
GWU**

**AY 2011-12**

**Stuart A. Umpleby**

**Prepared for a Symposium on Country Development at  
the  
European Meeting on Cybernetics and Systems  
Research  
Vienna, Austria, April 2012**

# **GRADUATE PROGRAMS FOR DEVELOPING COUNTRIES**

Stuart A. Umpleby

Department of Management  
The George Washington University  
Washington, DC 20052

September 12, 2012

Prepared for a Symposium on Country Development at the  
European Meeting on Cybernetics and Systems Research  
Vienna, Austria, April 2012  
And for the European Union Research Program at  
The George Washington University

**GRADUATE PROGRAMS FOR DEVELOPING COUNTRIES**

Stuart A. Umpleby  
Department of Management  
The George Washington University  
Washington, DC 20052

## **Abstract**

In Kazakhstan doctoral students are not expected to make a contribution to knowledge, as is required at Western universities. Rather, their task is to become familiar with what is known and then make policy recommendations for Kazakhstan. For example, how can the human capital in Kazakhstan be improved? This is a very broad subject for a PhD dissertation.

However, it does require a holistic perspective, and such dissertation topics may create an opportunity for systems scientists. When Russell Ackoff created the Social Systems Sciences PhD program at the Wharton School of the University of Pennsylvania, he had his students solve practical problems for business or government managers. That program graduated a large number of people who became consultants. A few became academics in several countries. The program created a philosophy and methods for holistic management. Large issues in developing countries may be a source of clients for systems scientists who want to further develop philosophy, theories and methods by working with large social systems.

## **Context**

We are living in a golden age for universities. The number of universities, both public and private is increasing. Universities are improving by competing with each other in order to raise their rankings. The Bologna Accord facilitates exchange of faculty and students in Europe and similar reforms have spread as far as Central Asia. Since we are now in an information society, higher education is widely regarded as essential for raising standards of living. Countries as well as companies are choosing to compete by being more innovative.

## **Three Types of PhD Programs**

An important way that universities choose to compete is by offering PhD programs. But not all PhD programs are the same. There are at least three very different kinds of PhD programs that I am aware of.

1. The usual PhD program, which is common in the U.S. and Western Europe requires doctoral candidates to make a small contribution to knowledge. Although many forms of dissertations are possible, usually the doctoral candidate tests an existing theory using statistical methods.
2. In some countries, such as Kazakhstan, doctoral students are expected to become familiar with the Western literature and then make policy recommendations for the further development of their country. Some might say this program sounds more like a

master's degree in public policy, but faculty members who can recommend improved policies are what the political leaders of the country are looking for.

3. There is interest in combining or integrating the knowledge from many studies which have used different methods and different data. Consequently ways of combining separate studies are now being developed and a doctoral program to teach this kind of work has been designed. (Umpleby, Anbari, Mueller, 2007)

### **Country Development Strategies**

At least since the Cold War there has been strong interest in promoting country development. The two ideologies of communism and capitalism each claimed it was the better approach. A few other examples of country development strategies are the following:

1. The Washington Consensus was a list of macro-economic policies which people in the U.S. Treasury Department, the IMF, and the World Bank all thought a country should abide by when trying to develop. (Williams, 1989)
2. Stafford Beer, when he worked for Salvador Allende's government in Chile in the early 1970s used ideas from cybernetics to improve management practices and improve coordination among firms and between firms and the government. (Beer, 1972 and 1975)
3. Kazakhstan seeks to adopt policies based on the study of the experiences of other countries, particularly the U.S., Western Europe and Singapore.

4. Fredmund Malik, a leading German management consultant and student of S. Beer has begun a project to advance the development of Lower Austria, a state within Austria.

Malik's program has several features.

1. He uses the Viable System Model in his work with businesses, government agencies and Non-Governmental Organizations (NGOs). This model facilitates communication within an organization and provides a checklist to ensure that structures are in place to carry out both essential short term activities and long range planning. There is also an emphasis on formulating and communicating the basic values of the organization. (Beer, 1979 and 1985)
2. Malik facilitates a strategic planning conference involving business, government, and NGO leaders. (Beer, 1994)
3. He has high school and university students play an Ecopolity game in which they seek to optimize investments in education, the environment, and economic growth. In this way they learn systems thinking. (Vester, 2000 and 2007)

### **The Situation in Kazakhstan**

For five years I have taught and advised on the creation of PhD programs at two universities in Almaty, Kazakhstan – Al Farabi Kazakh National University, a federal university, and the University of International Business, a private university. Through this work I learned that their conception of a PhD program is very different from that in the U.S. or Western Europe.

Gradually I came to the conclusion that the applied focus of the Kazakh PhD programs may create opportunities for people in systems science.

The Republic of Kazakhstan (RK) is five times the size of France, but the country has only sixteen million people. The country borders Russia, China, Kyrgystan, Uzbekistan, and Turkmenistan. It is resource rich in that it has large oil reserves and ninety percent of the elements in the periodic table. The country has the lowest corruption index of any Central Asian country, including Russia. President Nazarbayev is investing heavily in education. Kazakhstan both sends students abroad to study and is creating and developing universities within the country. Since declaring independence in 1989 its annual growth rate has averaged above 8 percent.

The PhD programs in Kazakhstan are designed by the Ministry of Education, not by each university. Students are expected to finish their doctoral degrees in three years. They are also expected to be fluent in Russian, Kazakh and English, but language competence varies widely. Students are not told to make a contribution to knowledge but rather to apply existing knowledge to problems in Kazakhstan. Examples of dissertation topics are:

1. Devise a strategy to improve human capital in RK.
2. Recommend a strategy for the effective use of the natural resources of RK.
3. Create a strategy for improving the use of oil and gas in RK.
4. Suggest a strategy for creating an advertising sector in RK (e.g., to advertise alcoholic drinks produced in RK).

There are some contradictions in the RK PhD Program. First, Western advisers are brought to RK to advise on the creation of a PhD program in their field of study. Although Western PhD programs are very different from Kazakh PhD programs, there is no explicit acknowledgement of this difference. Kazakh faculty members have been told many times about the difference, but the money for the PhD programs comes from the government, so they follow the government's plans. Students are caught in the middle. Western advisers routinely advise students to narrow the topic of their dissertation in order to make a contribution to knowledge, but local advisers require students to work on large policy topics. Eventually Western advisers realize that their role is not to help the Kazakhs create a Western style PhD program but just to help the Kazakh students become aware of the relevant Western literature.

Second, there has been no discussion that I am aware of among the Kazakh faculty of an appropriate philosophy of knowledge for this more applied PhD program. However, a suitable philosophy of knowledge for an applied management related doctoral program does exist. A PhD program focused on solving real problems of large organizations is not entirely new. Russell Ackoff's Social Systems Sciences program (S cubed) at the Wharton School of the University of Pennsylvania was an example. (Ackoff, 1981-1984) Students worked on real problems with a client and called on faculty members for advice. The PhD program operated like a consulting firm, billing clients for the time of faculty members and doctoral students. Hence the program was financially self-supporting.



The Social Systems Sciences Program was based on a different philosophy of knowledge. This different conception of knowledge has led to a different conception of science, which is more compatible with the social sciences. See Table 2. (Umpleby, 2002) As more research in social science is done, our conception of science is expanding.

**Table 1. Two Conceptions of How to Structure Knowledge**

Philosophy	Cause and effect	Producer-product
Form of knowledge	Theories	Methods
Observer	Outside the system observed	Part of the system observed
Causality	If – then propositions	Necessary conditions
Orientation	Analysis	Synthesis
Perspective	Reductionism	Expansionism
Approach	Observation	Participation
Activity	Description	Prescription
Application	Forecast	Create/ design
Goal	Reproducible experiments	Agreement or acceptance
Criterion	Falsifiability	Usefulness
Client	Work alone	Work with a client

Based on the work within the systems field, particularly the work of Ackoff and Beer and Malik, it is possible to suggest a design for management education and management improvement in Kazakhstan.

1. Start with two states within Kazakhstan – an urban state and a rural state.
2. Train RK students to work with businesses, government agencies, and NGOs.
3. Conduct a strategic planning conference that brings together business, government, and NGO leaders to plan the future of their state.
4. Have high school and college students play the Ecopolicy game as a way of learning systems thinking.
5. Based on what was learned in the first two states and using the students and managers who were trained, expand the activity into additional states within Kazakhstan.
6. Continue training and continue improving methods based on experiences with organizations in RK.
7. If this approach proves successful in RK, begin experiments in other countries.

## **Conclusion**

Traditional PhD programs, which focus on making a small addition to knowledge, may not be the most effective programs for developing countries. A program similar to the Social System Sciences Program at the University of Pennsylvania might be more effective in moving a country forward. Such a program would be based on a different, more holistic conception of knowledge. It would be design oriented, and it would emphasize participation. One way to test

the utility this idea would be to begin with one country (e.g., Kazakhstan). If the experiment is successful, it could be tried in other countries as well. In addition to contributing to the development of the countries involved, this work would help to develop the systems sciences. Developed countries could also benefit from an expanded conception of knowledge and science.

### References

Ackoff, Russell L. (1981). *Creating the Corporate Future: Plan or be Planned for*. New York: Wiley.

Ackoff, Russell L., E.V. Finnel and J. Gharajedaghi (1984). *A Guide to Controlling your Corporation's Future*. New York: Wiley.

Beer, Stafford (1972). *Brain of the Firm: A Development in Management Cybernetics*. New York: Herder and Herder.

Beer, Stafford (1975). *Platform for Change: A Message from Stafford Beer*. New York: Wiley.

Beer, Stafford (1979). *The Heart of Enterprise*. New York: Wiley.

Beer, Stafford (1985). *Diagnosing the System for Organizations*. New York: Wiley.

Beer, Stafford (1994). *Beyond Dispute: The Invention of Team Syntegrity*. New York: Wiley.

Umpleby, Stuart A. (2002). "Should Knowledge of Management be Organized as Theories or as Methods?" *Janus Head, Journal of Interdisciplinary Studies in Literature, Continental Philosophy, Phenomenological Psychology, and the Arts*, 5/1, pp. 181-195.

Umpleby, Stuart A., Frank T. Anbari and Karl H. Mueller (2007). „Highly Innovative Research Teams: The Case of BCL,“ in Albert Mueller and Karl Mueller (eds.). *An Unfinished Revolution? Heinz von Foerster and the Biological Computer Laboratory*. Vienna, Austria: Echoraum, pp. 181-202.

Vester, Frederic (2000). *Ecopolicy: The Cybernetic Strategy Game*. A computer game. MCB Verlag.

Vester, Frederic (2007). *The Art of Interconnected Thinking: Ideas and Tools for Tackling Complexity*. MCB.

Williamson, John (1989). "What Washington Means by Policy Reform," in: Williamson, John (ed.): *Latin American Readjustment: How Much has Happened*, Washington: Institute for International Economics.