INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600
Assessment of the United States Information Agency sponsored University Affiliation Project between Iowa State University and the National Agriculture University of Ukraine using the Concerns-Based Adoption Model (CBAM)

by

Victor A. Udin

A dissertation submitted to the graduate faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Industrial Education and Technology

Co-Major Professors: Larry L. Bradshaw and Richard P. Manatt

Iowa State University

Ames, Iowa

1998

Copyright © Victor Alexandrovich Udin, 1998. All rights reserved.
This is to certify that the doctoral dissertation of

Victor Alexandrovich Udin

has met the dissertation requirements of Iowa State University

Signature was redacted for privacy.

Co-major Professor

Signature was redacted for privacy.

Co-major Professor

Signature was redacted for privacy.

For the Major Program

Signature was redacted for privacy.

For the Graduate College
# TABLE OF CONTENTS

## LIST OF TABLES

vi

## ABSTRACT

vi

## CHAPTER 1. INTRODUCTION

1

Statement of the Problem 2
Purpose of the Study 3
Need for the Study 4
Research Questions 6
Hypotheses of the Study 7
Assumptions of the Study 8
Delimitations of the Study 9
Definition of Terms 9

## CHAPTER 2. LITERATURE REVIEW

11

Higher Education 11
The old system of higher education 11
Educational reforms 13
Comparison of Higher Education Systems in the U.S. and Eastern Europe 15
Curriculum 17
Teaching methods 18
Teaching and research 18

## CHAPTER 3. METHODOLOGY

21

Training Transfer 21
Traditional Training Transfer Evaluation 22
CBAM 24
Revise and Restructure Curricula 26
Develop and Acquire Educational Materials 27
Incorporate New Teaching Methodologies 28
Modernize Administrative Structures at NAUU 28
Research Design 29
Population 29
Procedure 30
Survey instrument 30
Questionnaire format 34
Protection of human subjects 35

## CHAPTER 4. FINDINGS

36

Characteristics of the Respondents 36
LIST OF TABLES

Table 1. Synopsis of literature comparisons of Ukrainian and American systems of higher education 20
Table 2. Educational background of the respondents 37
Table 3. Membership of the respondents in professional organizations 38
Table 4. Professional journals read by respondents 39
Table 5. Attendance of the respondents at the Linkage workshops 40
Table 6. Willingness of the respondents to assist others to understand the objectives of the Linkage project 40
Table 7. Number of years teaching at NAUU 41
Table 8. English language proficiency of the respondents 42
Table 9. Results of the summed composites and their descriptive statistics for Questions 19-41 (All Levels of Use) 43
Table 10. Descriptive statistics for the non-dichotomous, non-demographic variables of the total sample 44
Table 11. Descriptive statistics for the dichotomous variables of the Levels of Use 44
Table 12. Descriptive statistics for the Levels of Use on the Lickert scale 46
ABSTRACT

The problem of this study was to evaluate the success of the Iowa State University (ISU) Linkage project team in implementation of the institutional change at the National Agricultural University of Ukraine (NAUU). The evaluation of the project’s success and the educational changes it brought about were accomplished by determining the levels of use of the key elements of this change: the revised curriculum, new methods of teaching, and new teaching materials used at NAUU. This program evaluation research of the Linkage project was conducted based on the Concerns-Based Adoption Model (CBAM). The Levels of Use dimension of the Concerns-Based Adoption Model was applied to determine if the Linkage project team was successful in implementation of the project.

The survey questionnaire consisted of sections describing the NAUU participants': demographic characteristics; knowledge of the English language; understanding of the essence of the Linkage project; awareness of the administrative changes at NAUU; and levels of use of the new curriculum developed as the result of the Linkage project. Statistical analysis revealed that neither demographic characteristics nor administrative reform at has a relation to the levels of use of the main results of the Linkage project. The school environment was the only factor that significantly affected the levels of use. Statistical analysis also revealed that there was a high level of use of the new curriculum and the recently developed teaching materials. The NAUU participants were also eager to share their new experience with their Ukrainian colleagues.
It was concluded that the ISU model of technology transfer was quite successful and that CBAM model can be used in for assessment of international technology transfer projects.
CHAPTER 1. INTRODUCTION

From 1994-1997, National Agricultural University of Ukraine (NAUU) and Iowa State University (ISU) administrators and faculty worked together to design and implement a university affiliation “Linkage project” (Crawford & Melnichuk, 1994) sponsored by the United States Information Agency. Partnership teams were headed by Dr. Crawford, Director of International Agriculture Programs at Iowa State University (ISU) and Dr. Melnichuk, Rector, of the National Agriculture University of Ukraine (NAUU), and comprised of the representatives of departments and faculties. The teams were designated to focus on five objective areas of educational reform: (1) revise and restructure curricula; (2) develop and acquire educational materials; (3) incorporate new teaching methodologies; (4) improve continuing education; and (5) modernize NAUU administrative structures.

Ten colleges were identified at NAUU as counterparts to seven departments in the Colleges of Agriculture and Veterinary Medicine at ISU. In total, 14 ISU and 33 NAUU faculty and staff participated directly in the Linkage project. Departments at ISU and faculties at NAUU made enormous contributions as all personal time devoted to the project was provided as cost sharing at no cost to the grant. Total cost sharing for the period October 1994 - May 1997 was $310,978.66. Furthermore, faculty members took on the added responsibility of the project in addition to their existing duties. The objectives of the Linkage project were to: (1) revise and restructure curricula; (2) develop and acquire educational materials; (3) incorporate new teaching methodologies; (4) improve continuing education; and (5) modernize administrative structures at NAUU (Crawford & Melnichuk 1994).
Statement of the Problem

The problem of this study was to evaluate the success of the Iowa State University (ISU) Linkage project that was designed to bring an educational reform and institutional change at the National Agricultural University of Ukraine (NAUU). The evaluation of the project's success and the educational changes it brought about were accomplished by determining the levels of use of the key elements of this change: the revised curriculum, new methods of teaching, and new teaching materials used at NAUU.

The NAUU is located in Kiev, the capital of Ukraine, one of the 15 countries that used to comprise the Soviet Union. These countries of the countries of the former Soviet Union, Newly Independent States (NIS) (Georgia, Ukraine, Estonia, Latvia, Bellarussia, Uzbekistan, etc.) are undergoing dramatic changes that are affecting all areas of life in these countries including their systems of education which are rapidly transforming into a new, more democratic and modern structures. This requires an institutional change that will help NIS countries to become integrated in the world community.

Institutional change leads to another issue—the choice of an appropriate educational model from the West that can be adapted to local needs. American universities are playing a substantial role in facilitating changes and reform of the systems of education in the Newly Independent States, and one possible educational model was developed at Iowa State University (ISU) in Ames.

The Iowa State University/National Agriculture University of Ukraine Linkage Project was designed to work in partnership teams in order to implement institutional reform at NAUU: to revise and restructure curricula, develop teaching materials, incorporate new
teaching methodologies, and modernize administrative structures at NAUU (Crawford & Melnichuk 1994). Although the results of the activities of the project team work have been well documented (Acker, 1997; de Baca 1995, 1996), there has been no quantitative overview research conducted to formally evaluate the successful implementation of the Linkage project.

This quantitative program evaluation research of the Linkage project was conducted based on the Concerns-Based Adoption Model (CBAM). The Levels of Use dimension of the Concerns-Based Adoption Model (Hall & Hord, 1987) was applied to determine if the Linkage project team was successful in implementation of the project. To date, there has been no research conducted to determine the level of use of these key elements of the institutional change at NAUU: the revised curriculum, new methods of teaching, and new teaching materials at the NAUU that have been introduced as the result of the Linkage project implementation.

**Purpose of the Study**

The purpose of this study was twofold:

1. Present a procedure for evaluating international institutional change programs by using the Levels of Use dimension of the Concerns-Based Adoption Model; and

2. Enhance future international institutional change programs design by adding the Levels of Use dimension of the Concerns-Based Adoption Model.
Need for the Study

The Ukraine has gone through many political and cultural changes from 1991 until today, and the system of higher education has been affected by all these changes in many ways. "It is increasingly obvious, for instance, that the university systems in Eastern and Central Europe are seriously run down, paralyzed by forty or seventy years of subservience and bureaucracy" (Morsy, 1996, p. ix). This predicament of the system of higher education is worsened by the fact that there is a lack of a clear program for improvement and attempts to make up for the missing financial support from the government have failed. They have resulted in strengthening the old system instead of changing it. "Students' formal classroom load is rising. The reason for this is the lack of books and references for independent learning, as well as the low level of student preparedness" (Radaev, 1995, p. 7).

Another factor that should be considered is that for NIS educators and students it is very difficult to come to grips with market economy changes. For example, in the West the faculty are accustomed to the fact that students have to work to make money to go to school. The NIS educators are very critical of this practice. Students' actual class attendance is going down. "This situation is because of their increasing employment (even [for] students [regularly] enrolled [full-time students]), their increasingly 'vulgar' pragmatism, and, to a certain extent, their declining interest in education" (Radaev, 1995, p. 7). If we keep in mind the fact that the students are to attend at least 30 hours of lectures and practical seminars a week, we would understand that it is virtually impossible to work and study at the same time.

Yet, despite all the problems, the number of young people attending universities is growing. "Following the massive decline in applications for higher education in 1992 and
1993 at the height of post-Soviet chaos, the number of perspective students continues to grow" (Korchagina, 1997, p. 2). This major influx of new students requires additional efforts and resources to make the system of higher education capable to meet the demands of modern world. The Ukrainian government and its system of education are unable to cope with the problems they are facing and therefore they are seeking external help. In response to the request of the Ukrainian government, the world community has begun major efforts to assist the Ukrainian higher education institutions to implement reforms in the transitional period of dramatic political and economic changes.

The United States is playing a very positive role in democratic transformations in Eastern Europe. Its support to reform-minded governments has also impacted educational systems.

The American government helps to reform the system of higher education through various agencies. For example, the United States Information Agency (USIA) is one of the major funding agencies in the world that has been very actively involved in assisting Ukraine to reform its system of higher education. One of the USIA programs is a so-called "university affiliation program". Under this program a number of American universities have implemented projects that facilitated development of foreign institutions and introduced them to new curricula.

The Iowa State/Ukraine "Linkage Project" (Crawford & Melnichuk, 1994) belongs to this category of projects. The Linkage project took place with the backdrop of the historic transformations that are occurring in Ukraine. The project was imposed on top of the dynamic environmental context; therefore, a careful evaluation is necessary to ascertain
whether the implementation was successful. More than that, in a phone interview (e-mail),
the representatives of the USIA indicated that the agency is not aware of any systematic
scholarly research on the evaluation of university affiliation projects. The Iowa State
University team has conducted extensive evaluations of the project (Acker, 1997; de Baca,
1995, 1996), but there is still a need for an evaluation of the project using an overview
qualitative technique.

Research Questions

The following questions were used to guide the study:

1. Are personal characteristics of the faculty related to the levels of use of the key
elements of the institutional reform at NAUU?

2. Are school environment factors related to the levels of use of the key elements of the
institutional reform at NAUU?

3. Is the administrative change at NAUU related to the levels of use of the key elements
of the institutional reform?

4. Is the English language proficiency related to the levels of use of the key elements of
the institutional reform?

5. Is the Iowa State University curriculum transfer an appropriate process for the
National Agricultural University of Ukraine?
Hypotheses of the Study

The hypotheses of the study were formulated to answer the research questions.

Question 1: Are personal characteristics of the faculty related to the CBAM levels of use of the key elements of the institutional reform at NAUU?

Ho: The personal characteristics of the faculty are not correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

Ha: The personal characteristics of the faculty are correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

Question 2: Are school environment factors related to the CBAM levels of use of the elements of the institutional reform at NAUU?

Ho: The school environment factors are not correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

Ha: The school environment factors are correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

Question 3: Has the administrative change at NAUU had relevance to the CBAM levels of use of the key elements of the institutional reform?

Ho: The change of the administrative structure is not correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

Ha: The change of the administrative structure is correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

Question 4: Is proficiency in the English language related to the CBAM levels of use of the key elements of the institutional reform at NAUU?

Ho: Proficiency in the English language is not correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.
Ha: Proficiency in the English language is correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU

*Question 5:* Is the Iowa State University Linkage project an appropriate approach to facilitate educational changes in foreign educational institutions

*Ho:* The Iowa State University Linkage project is not the appropriate approach to facilitate educational changes in foreign educational institutions

*Ha:* The Iowa State University Linkage project is the appropriate approach to facilitate educational changes in foreign educational institutions

**Assumptions of the Study**

The following assumptions were made:

1. The American system of higher education meets the needs of the Ukrainian society in transition.

2. The NAUU faculty had not been exposed to Western type curricula and teaching methods prior to the Linkage project.

3. The sample population reflects the general population of the NAUU faculty.

4. The Concerns-Based Adoption Model is an appropriate framework to determine the levels of use of the key elements of the institutional reform by the faculty of the National Agriculture University.

5. The faculty at NAUU move progressively higher on the CBAM levels of use scale as they have more years of experience, better knowledge of English, and better education.
6. The Ukrainian respondents at NAUU are honest in responding to the survey questions.

7. The NAUU is at Level 4 demonstrated by the Kirkpatrick model—organizational change has occurred as the result of the Linkage project.

**Delimitations of the Study**

The study was subjected to the following delimitations:

1. This study was limited to the faculty of the NAUU who participated in the linkage project and traveled to the US.

2. The literature review was mostly limited to the literature available in English in the U.S.

3. The number of the interviewees were limited to those faculty who were still at NAUU during the investigator's visit to Kiev in October 1997.

**Definition of Terms**

Several terms were defined for use in the study:

*Concerns-Based Adoption Model (CBAM)*: A conceptual framework in which concerns of individual teachers change as teachers become familiar and involved in new programs or processes (Hall & Hord, 1987). The model is made up of three key dimensions: Stage of Concern, Levels of Use, and Innovation Configurations.

*Curriculum*: An academic plan that includes planning, implementation, evaluation, or improvement of teaching and learning. (Stark & Lattuca, 1997).
**Faculty development**: The process of faculty training. Classroom visits or one-on-one counseling intended to improve teaching skills of individual faculty members (Mills, 1994) encompasses research and teaching activities, personal health and growth, and management of professional career over time (Mathis, 1982; Schuster, Wheeler, & Associates, 1990); promotion of growth and effectiveness of faculty teaching and research (Heppner, Paul & Johnston, 1994).

**Key elements of the institutional change**: The revised curriculum, the new teaching methods, the new teaching materials, and the new administrative structure.

**Project Evaluation**: Evaluations that assess activities that are funded for a defined period of time to perform a specific task. (Stufflebeam, 1981).

**Training**: Supervised practice to develop of functional skills and knowledge (Hawes, 1982).

**Training transfer**: The effective and continuing application, by trainees to their jobs, of the knowledge and skills gained in training (Board & Newstrom, 1992) (the result of training when the skills and knowledge obtained during this training are applied by the trainees).
CHAPTER 2. LITERATURE REVIEW

The review process was conducted through searches on the ERIC system. This was followed by locating the relevant articles contained in bibliographies, accessing the Dissertation Abstracts, Educational Administration Abstracts, and Library Indexes. In addition, some searches were carried out using the Internet protocols of Yahoo and Alta Vista.

Higher Education

The dramatic political changes in East Europe are affecting the system of higher education in these countries. In fact, the changes are so rapid that the educators cannot keep up with the pace of the political reforms. As Bollag (1996) stated, "Educational experts say that Eastern Europe's rapid economic and political transformation has not been accompanied by a remaking of its antiquated university systems, with their outdated approaches to teaching and learning" (p. 59).

The old system of higher education

The old system of higher education does not answer the demands of the current period of time and it will take some time and a lot of efforts to change this system to make it compatible to the systems of higher education in the West. This change of the system that has been built for the last 70 years is not going to happen immediately. "The bureaucratic governance of education and science inflicted many ills and problems on to higher education
in Eastern and Central Europe, which are not going to be cured overnight” (Sadlak, 1996, p. 166).

The education, which in the first place had been based on the inflexible European classical education, suffered for decades from total political control. In the past the justification was that the political system could only survive by making sure that it was monitoring higher education and in this manner continued to develop the Soviet-style middle-class intellectuals. As Cerych (1991) pointed out, “The old system gave a central party almost total political control of access, of the curriculum, of academic staff appointments, of institutional management (insofar as it existed), and of resource allocation” (p. 351). These factors should be taken into consideration when one tries to introduce any changes to the old system of education.

In addition to the residue of the past policies of the higher educational institutions, there are lot of practical issues that are of concern to educators in Eastern Europe (Watt, 1997):

1. The absence of philosophy for reform of higher education;
2. The lack of public resources and structural rigidities;
3. The need for private funding; and
4. The necessity for the structural reform of higher education.

These concerns stem from the inherent shortcomings of the political control that existed in the universities of East European countries while they were operating under communist regimes.
That political control extended to the complicated situation in higher education where the administration and the faculty were not prepared to act on their own; instead, they kept expecting some guidance from the top leadership of the country. This reality requires from everybody who is involved in the educational process extraordinary approaches to overcome the problems of the past. There are no ready-made recipes that would offer easy solutions. As Cerych (1991) stated, “Many of these inherited shortcomings [of the system of higher education] will require remedies that have yet to be designed, adopted, or implemented” (p. 351).

**Educational reforms**

The job of developing these new approaches to reform the higher education system in Eastern Europe asks for involvement of a number of educational institutions from the West. The main objective of the concerted efforts of the East European and Western institutions is to develop some standards that can be used to achieve a certain level of their compatibility. Continued international cooperation is needed to promote the development of internationally recognized standards at Central and East European Universities” (Watt, 1977, p. 5). While developing these standards, one needs to make sure that the assistance does not turn into dictating the rules of the game and avoid the attempts to transfer an alien system into a new environment.

In education, imitation or the reproduction of foreign models is in itself a kind of cultural dependency, and imitation that borrows only the form without paying attention to the spirit behind it cannot function correctly; sooner or later, stagnation occurs or greater harm is caused. (Morsy, 1996, p. xv)
Iowa State University is one of the American higher education institutions that is active in the Eastern European countries. The Linkage project has added to the list of the successful projects that ISU has done in that part of the world. Much of this success can be explained by the fact that the Iowa State University Linkage team tried from the beginning to be sensitive and avoid imposing the ISU system of higher education.

This project focuses on curriculum revitalization, faculty development and administrative restructuring in the area of education, continuing education and educational reform.

The linkage between Iowa State University (ISU) and Ukrainian State Agricultural University (USAU) will be conducted through the ISU Department of Agricultural Education and Studies and the USAU Department of Pedagogy. Educational reform has been identified by administrators of USAU as the most pressing need and the highest priority. In response to USAU’s request for assistance by ISU, this project proposal has been planned and written as a joint venture by faculty and administrators of both linkage university. (Crawford & Melnichuk, 1994, p. 1)

This approach to international programs was developed over many years of international efforts at ISU. By implementing the Linkage project, the ISU team took on a very difficult task of assisting an institution “... that had to create syllabi and types of training that were formally forbidden [in all Eastern European universities]” (Morsy, 1996, p. ix). Despite all the difficulties the ISU team faced, the Linkage project in Ukraine is an example of assistance in reforming the system of higher education in Eastern Europe.

The Linkage project team has from beginning designed a system of qualitative evaluation of the project.

Evaluation efforts associated with this proposed linkage between ISU and USAU are to be focused on the continuous improvement of educational program activities. Effective monitoring and evaluation are considered critical factors in maximizing the benefits of the linkage to the institutions involved.
Upon completion of the program, a summative evaluation will also be undertaken to assist in the improvement of future linkage programs. In addition to individual evaluation reports to be completed by the participating faculty members, the program coordinators from ISU and USAU will interview each participant during and upon completion of their individual assignments. Interviews will focus on the successes and shortcomings of the program, based on participants’ perceptions.

Suggestions for improvements and the extent to which objectives were met will be examined. Necessary program adjustments will then be discussed between the cooperating institutions and USIA officials. USAU will obtain students and instructor evaluations sampling courses targeted for curriculum revitalization. The final evaluation will be prepared as a joint effort between the cooperating institutions, and will assess the extent to which program activities met the outcomes specified in this proposal. All financial reports and progress reports required by USIA will be submitted with full collaboration and knowledge of the linked universities. Cumulative narrative reports will be prepared by each education reform team to identify progress, problems, and circumstances influencing the linkage. (Crawford & Melnichuk, 1994, p. 19)

Comparison of Higher Education Systems in the U.S. and Eastern Europe

Political changes in Eastern European countries have created unique opportunities for the U.S. higher education institutions to be a part of the educational change process and “...to assist those countries' transitions to more democratic and pluralistic societies” (Kirk, 1992, p. 1). In order to accomplish this extremely difficult task of educational reform, it is necessary to examine the similarities and dissimilarities that characterize American and Ukrainian systems of higher education.

The systems of higher education of these two countries are markedly different. In general, in the Soviet block countries “...the fundamental feature of the school system was its uniformity: uniform types of schools throughout the country; uniform curricula for all schools of a given type; everything in the curriculum being equally obligatory for all
students” (Kozakiewicz, 1992, p. 207). The control of the system of higher education was also related to the control of graduates’ employment opportunities. “The introduction of centrally planned economies and forcefully-imposed collectivization of agriculture gave the state total control over employment opportunities for higher-education graduates” (Sadlak, 1996, p. 158). Such characteristic features as excessive politicization and bureaucratization in the matters of curricula, student life and research content kept getting in the way of further development of the system of higher education in Eastern Europe (Sadlak).

In contrast to the Eastern European system of higher education, the American system is characterized by enormous diversity of the system of higher education and flexibility of university curricula. This means that “...the university is free to set its own objectives, curricular structure and content, and graduation criteria, and that it is entitled to defend its vocation to create new knowledge and to transmit and develop culture” (Morsy, 1996, p. xiii).

The public control of the universities is done through boards of trustees that consist of the trusted public representatives. “The governance of American colleges and universities is marked by lay boards of trustees and by relatively powerful presidents selected by, and answerable directly to, the trustees and only indirectly (albeit importantly) to the faculty” (Johnstone, 1996, p. 182). This is very different from the Eastern European system where the central government tends to keep the universities under control and ignore the specific local conditions and local people’s priorities.
Curriculum

The democratic nature of American society provides for a continuous debate on the methods of curriculum change and improvement. "The four-year American baccalaureate curriculum is considerably less specialized than equivalent curricula elsewhere, with typically only a little more than a third of the courses being within the major, and those concentrated in the third and fourth years" (Johnstone, 1996, p. 182).

This type of curriculum differs from the curriculum in Ukraine, where the students do not have choices and are assigned to the core curriculum from the first year of studies. In general, the curriculum was developed by the ministry of higher education and was imposed on the universities. In the U.S., because of the democratic nature of the society and the system of higher education, the curriculum is developed as a result of discussions among educators and public.

"Curricular planning in American higher education has been characterized by periodically recurring debates about key issues, superimposed on a long term trend toward diversification of institutions, educational missions, students, and programs" (Stark & Lattuca, 1997, p. 42). In fact, Kerr (1977) noticed that curriculum is the battleground on which society debates education. These debates allow the system to change to meet all growing needs of the society. In American colleges the external influences originating in society are important for the curriculum content. "Professional community influences include client orientations, professional certification requirements, accreditation standards, codes of professional ethics, job market fluctuations, and active alumni involvement" (Stark & Lattuca, 1997, p. 163).
This external influence used to be unheard of in Ukraine, where academics are perceived to be the ultimate experts in the field and would resist any interference from outside the institution. This kind of attitude prevented the universities from serving the real and changing needs of the society.

**Teaching methods**

The primary method of teaching in the Eastern Europe countries is lecture. The students are supposed to learn theory and memorize (Bollag, 1996). In the American universities, there is more use of so-called active methods. Active methods “consist of any classroom contact that gives students an opportunity to participate actively in the learning process” (Watt, 1997, p. 34). The students in Ukraine find it hard to participate in an active type of learning; they very often feel uncomfortable when asked to participate in a discussion in class or asking questions of the professors, as well as doing projects with other students.

**Teaching and research**

Teaching and research have been kept separate in the Soviet model (Cerych, 1991). In most American universities, faculty are expected to teach and to conduct rigorous research at the same time. There is, of course, a variety of approaches to this issue across institutions, but the general tendency is that the instructors are supposed to do both: teaching and research (Stark, 1997).

This review of literature on differences between American and Ukrainian systems of higher education shows that in order for the Ukrainian universities to join the academic world community they need to work together with their Western counterparts on a number of
issues. They “. . . must now rejoin the mainstream of international research, after having
being cut off from it for decades” (Morsy, 1996, p. xvii). There are also such issues as new
research methods and techniques, and international rules of collecting and processing the
data. The solution of the multiple problems that exist in the system of higher education of
Ukraine can only be solved through introduction of dramatic changes. These fundamental
changes in the organization, financing and management of higher education are necessary to
sustain the new programs and initiatives (Eisemon, 1996).

These kinds of organizational changes could only occur as the result of joint efforts
by international community and democratic forces within Ukraine. The analysis of the
results of the Linkage project can help to define future methods of educational reform in the
country, because the teams that worked on the project were striving to renew the curriculum
and teaching methods in order for this leading Ukrainian institution to reach international
standards.

The project was also an attempt to manage the differences that exist between Western
and Eastern European systems of education. These differences are summarized in Table 1.
Table 1. Synopsis of literature comparisons of Ukrainian and American systems of higher education

<table>
<thead>
<tr>
<th>UKRAINE</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>uniformity - “the fundamental feature of the school system was it’s uniformity” (Kozakiewicz, 1992, p. 207)</td>
<td>diversity - “a long term trend toward diversification of institutions, educational missions, students, and programs” (Stark &amp; Lattuca, 1997, p. 42)</td>
</tr>
<tr>
<td>state-controlled curriculum “uniform curricula for all schools of a given type” (Kozakiewicz, 1992, p. 207)</td>
<td>“Curricular planning in American higher education has been characterized by periodically recurring debates about key issues” (Stark &amp; Lattuca, 1997, p. 42)</td>
</tr>
<tr>
<td>Primary method of teaching - lecture. The students are supposed to learn theory and memorize (Bollag, 1996)</td>
<td>Active methods “consist of any classroom contact that gives students an opportunity to participate actively in the learning process” (Watt, 1997)</td>
</tr>
<tr>
<td>The government controls the university and sets all the key policies and procedures</td>
<td>The external influences, originating in society, are important “Professional community influences include client orientations, professional certification requirements, accreditation standards” (Stark &amp; Lattuca, 1997, p. 163)</td>
</tr>
<tr>
<td>The content of courses has remained unchanged for many years (for example the notions of open market economy) and lags behind the results of the current research</td>
<td>The content of courses is being constantly updated to reflect the changing body of knowledge (micro and macro economics)</td>
</tr>
</tbody>
</table>
CHAPTER 3. METHODOLOGY

A review of the literature on training indicates that there is a growing concern of scholars and practitioners with the issue of evaluation of training activities (Faerman & Ban, 1993; Ford & Weissbein, 1997; Noe & Ford, 1992; Tannenbaum & Yulk, 1992). Board (1997) believes that there is a need for more research on evaluation of training transfer. The issue of training transfer evaluation is connected with the notion of training transfer itself.

Training Transfer

Balwin and Ford (1988) conducted a review of empirical research on training transfer and reported four weaknesses in training transfer literature:

1. The definition of training transfer has not been operationalized in literature on training;
2. Low level tasks have been used to determine the occurrence of transfer;
3. There is an absence of theory on the characteristics of the trainees and how they affect transfer; and
4. There is a lack of research on learning environment factors such as encouragement, performance-conducive circumstances, and working conditions.

These concerns for the lack of research on the effects of characteristics of the trainers and learning environment are shared by other scholars (Rummler & Brache, 1995).

A number of researchers have indicated that there is a great need to explore the issues of effect of the personal characteristics of the participants and the organization environment
on the results of the training (Ettelie, 1990; Marsick, 1990; Noe & Ford, 1992; ). Yet, the classical goal-based models of training transfer evaluation do not take into consideration either personal characteristics or learning environment.

**Traditional Training Transfer Evaluation**

Board (1997) indicated that lack of evaluation of training transfer poses a problem for trainers and trainees. Goal-based evaluation has developed as the result of efforts to improve the educational and training process (Bramley, 1996). This type of evaluation has been used for years to measure the success of training transfer. Stark (1997) believes that the modern goals-based evaluation methods in education are based on the works of educational psychologist, Ralph Tyler.

In the 1950's Tyler (1950) developed a theory that the curricula should be organized according to some objectives. The objectives not only made it possible to plan the instruction, but also allowed for a systematic evaluation of a training program. Mager (1962) took Tyler's ideas of goal-based evaluation further by incorporating Skinner's principles of behaviorism. Mager thought it was necessary to specify the objectives of the performances that could be demonstrated, conditions under which the training would take place, and the results of the training would be evaluated (cited in Bramley, 1996).

Another factor that always concerned the evaluators was the lack of widely accepted uniform guidelines for evaluation (Cronbach, 1983). Because of a growing use of goal-based training evaluation and the lack of systematic approach to this type of evaluation, it became necessary to develop some evaluation standards. Stufflebeam (1981) and the Joint
Committee on Standards for Educational Evaluation developed 30 separate standards, also called the Context, Inputs, Process, Products (CIPP) model. This model describes program goals, program design, program implementation, and outcomes (Nevo, 1983). Another goal-based evaluation model used in evaluating training transfer belongs to Kirkpatrick (1959) who applied goal-based evaluation to training to develop the four levels' evaluation system.

Since then, Kirkpatrick continued to fine-tune his theory. In his work, "Evaluating training programs: The four levels," Kirkpatrick (1994) summarized the ideas he had been developing for the last 35 years. In works published in 1959, 1967, and 1994, Kirkpatrick was able to identify the categories that reflect what kind of results could be achieved after a training program is completed: reaction, learning, behavior, and results.

Kirkpatrick calls these categories "Levels". Level 1—reaction evaluation—measures the participants’ reaction, or how they feel about the training. Level 1 indicates if the participants are satisfied with the program but does not necessarily provide evidence whether the program was really effective. Here, Kirkpatrick uses questionnaires on the program and asks the participants to rate it in terms of their perception on how the training went. The Linkage team has conducted an evaluation at Level 1 of Kirkpatrick's model.

Level 2 is the so called learning evaluation. "Learning evaluation ascertains whether the information presented in the program or the course has been transmitted according to the objectives of increasing knowledge, improving skills, or changing attitudes" (Kilmurray, Lambert (1987, p. 17).

Learning at Level 2 is evaluated with tests after the course has been completed. (The Linkage project team should have done at least the Level 2 evaluation, but it was not a part of
the project. Level 3 behavior evaluation measures the behavior of the participants while they are working to establish if they, indeed, had acquired new skills. Behavior is generally measured through performance appraisal, participants self-evaluations, or supervisory evaluation. Finally, Level 4—results evaluation—measures the impact on the organization to determine if an organizational change occurred as the result of the training.

Despite the popularity of the Kirkpatrick’s evaluation model among the training professionals, there are some scholars who feel that this model does not offer answers to the problems of training evaluation. For example, Kilmurray and Lambert (1987) contend that the evaluation needs of today’s trainers go beyond what can be satisfied through any of one combination of Kirkpatrick’s four types of posttraining evaluation. Clark (1997) also thinks that college-wide programs cannot be evaluated using goal-based evaluation techniques.

The alternative to the goal-based method of evaluation is so called “responsive” evaluation (Stake, 1975). “A strategy in which the evaluator is less concerned with the objectives of the program than with its effects in relation to the concerns of interested parties—the ‘stakeholders’ ” (Bramley, 1996, p.17). The Concerns-Based Adoption Model (CBAM) is a type of responsive evaluation.

**CBAM**

The Research and Development Center for Teacher Education (R&DCTE), at the University of Texas at Austin developed the Concerns-Based Adoption Model (CBAM) as a means to measure the school improvement process. Hall and Hord (1987) have indicated that the model is based on the following assumptions:
1. Understanding the point of view of the participants in the change process is critical.

2. Change is a process, not an event.

3. It is possible to anticipate much that will occur during a change process.

4. Innovation comes in all sizes and shapes.

5. Innovation and implementation are two sides of the change process coin.

6. To change something, someone has to change first.

7. Everyone can be a change facilitator.

The model is made up of three key dimensions: Stages of Concern, Levels of Use, and Innovation Configurations. Concern is “the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task” (Hall & Hord, 1987, p. 37). Stages of Concern is the means to identify seven kinds of concerns that users of innovation might have about this innovation. The stages include: Stage 0 (Awareness) little concern about innovation; Stage 1 (Informational) a general awareness of the innovation, and Stage 2 (Personal) individuals are uncertain about the demands of the innovation. Stage 1 and 2 are a part of the “self” dimension; Stage 3 (Management) attention is focused on the processes and tasks of using the innovation is a part of the “task” dimension; Stage 4 (Consequence) attention focuses on impact of the innovation on student; Stage 5 (Collaboration) the focus is on coordination with others; and Stage 6 (Refocusing) the focus is on exploration of more universal beliefs from the innovation are a part of the “impact” dimension (Loucks & Hall, 1977).

For this particular study the researcher used the Levels of Use of the CBAM. The Levels of Use is a tool of CBAM that helps to determine if the educator is using the
innovation. The Levels of Use provide a way to see if the organization is successful in its implementation of the innovation (Loucks & Melle, 1982). Hall and Hord (1987) give a definition of the Levels of Use. There are six Levels of Use: (1) LoU-Nonuse - A stage in which the user has little or no knowledge of the innovation; (2) LoU-Orientation - A state in which the user has recently acquired or is acquiring information about the innovation; (3) LoU-Preparation - A state in which the user is preparing for the first use of the innovation; (4a) LoU-Routine - Use of the innovation is stabilized. Few if any changes are being made in ongoing use; (4b) LoU-Refinement - A state in which the user varies the use of the innovation to increase the impact on the clients within immediate sphere of influence; (5) LoU-Integration - A state in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence; and (6) LoU-Renewal - The user reevaluates the quality of use of the innovation.

The following sections summarize results by the objectives of the innovations introduced to the National Agriculture University through the Linkage Project. These sections are based on the Final Report on the Linkage project (Acker & Melnichuk, 1997).

**Revise and Restructure Curricula**

The creation of a new educational plan and curricula at NAUU was clearly the centerpiece accomplishment of the Linkage Project. The NAUU and ISU faculty involved in the process collectively spent thousands of hours creating awareness of curriculum alternatives, preparing, revising, and finalizing curricula, and obtaining final approval from
Ukrainian national committees. This 18-month process culminated on May 6, 1996, when ISU formally recognized the comparability of the curriculum at NAUU. With NAUU recognized as a national university, this means that the impact of the curricular reform will be multiplied as it is adopted by 22 other higher education institutions throughout Ukraine, a process that will be accelerated by continuation of this Linkage Project.

At NAUU, an Institute of Agribusiness has been developed to teach market economics, majors have been added to reflect job market needs, courses have been revised to incorporate updated information, class sequences have been rationalized to make the system more user friendly to students, and elective courses have been added to encourage students to explore their personal interests. Most recently, an ISU faculty member spent the month of March 1997 at NAUU teaching a course on microeconomics in the Institute of Agribusiness.

**Develop and Acquire Educational Materials**

The curriculum reform process was further supported through the development of new course materials and the acquisition of supplies, equipment and teaching materials. During the visits to ISU, NAUU faculty were introduced to multi-media approaches to teaching. When ISU faculty visited NAUU, they presented seminars utilizing visual aids. As a result, demand was created for these technologies. The Linkage Project purchased a photocopier, slide projectors, overhead projectors, computers, video equipment, laser pointers, and cameras. Two well-run support centers are now operating on the NAUU campus to help instructors. The Media Resources Center is a fully-equipped center designed and staffed to assist instructors to develop high-quality slides, videos, computer generated
presentations, and transparencies. The Teaching Technical Support Office maintains, schedules, delivers, and trains instructors to operate all teaching equipment.

Incorporate New Teaching Methodologies

In the process of observing ISU classes, observing ISU professor/student relations, and thinking through equipment decisions, NAUU faculty also confronted questions on teaching methodologies. They gave fresh thought to how lessons are best presented to enhance student learning (in contrast to how lessons were taught/delivered). Effectiveness of faculty teaching can be achieved and enhanced through faculty development (Heppner, Paul, & Johnston, 1994). The visits to ISU included instruction on the use of alternative teaching methods. The impact of this work is that the 33 NAUU faculty who visited ISU have a new awareness of improved teaching methodologies, although converting this awareness into changes in behavior will take continued effort. Mills (1994) contends that faculty development includes the process of regular training for faculty that leads to acquisition of teaching skills.

Modernize Administrative Structures at NAUU

Important administrative reforms have been institutionalized at NAUU. The leadership at NAUU have indicated that they drew heavily on the ISU model in redesigning their administrative structure. NAUU has added the positions of Provost, Vice President for Student Affairs, and Director of Extension. Multidisciplinary units, called Institutes, are being formed to enable those in related disciplines to cooperate. The Institutes also added a
research dimension to the teaching role of the faculties. They now enjoy significant decision-making authority.

**Research Design**

The research design of this study is a descriptive survey of the Ukrainian participants of the Linkage project. The survey instrument was translated into Ukrainian and the representatives of the National Agriculture University Department of Pedagogy were asked to comment on the instrument’s content during the investigator’s trip to Kiev, Ukraine, in the fall of 1997.

**Population**

The population of the study were the Ukrainian participants of the Linkage project. The population included those participants who traveled to the Iowa State University as well as those who were participating in the Linkage project activities but did not get to travel to the USA.

The sample size for the analyses was 45 faculty and administrative members of the National Agricultural University of Ukraine (NAUU), the Ukrainian participants of the Linkage project. It would have been desirable to have had many more respondents, however, questionnaires are not common in Ukraine and the investigators asked only the volunteers to complete them. Consequently, this small sample size was unavoidable due to the nature of the research. Because “well behaved” data are expected to obtain normality within 30 to 35 cases, it was decided that the sample size for this research would be considered adequate (Howell, 1987). The questionnaires were distributed among those faculty and administrators
of the National Agricultural University of Ukraine who volunteered as participants of the
Linkage projects to fill out the questionnaires.

**Procedure**

In early October 1997, it was announced at the National Agriculture University of
Ukraine that the participants of the Linkage university affiliation project were invited to
participate in a session to fill out a survey questionnaire to help assess the success of that
project.

**Survey instrument**

A five-part survey instrument having 41 questions (see Appendix A) was developed
to address each of the research questions.

*Research Question 1: Are personnel characteristics of the faculty related to the levels of use
of the key elements of the institutional reform at NAUU?*

Questions 1-6 were asked in order to obtain information:

1. The highest degree I have earned
2. I belong to the following professional organization
3. I read the following professional journals
4. I have attended conferences or workshops where the new approaches to the
curriculum innovations were discussed.
5. I have been helping other instructors and administrators to understand the objectives
of the Linkage project.
6. The number of years I have been teaching at the National Agriculture University.
Research Question 2: Are school environment factors related to the levels of use of the elements of the key elements of the institutional reform at NAUU?

Questions 9-13 were developed to answer this research question. The participants were asked to rate the following questions on a scale of 1 - 5, with 1 being the lowest, and 5 being the highest.

9. The majority of the faculty at NAUU knows about the results of the Linkage project:

10. The majority of the faculty at NAUU uses the new curriculum:

11. My personal interest in implementing the Linkage project:

12. The majority of the faculty at NAUU supports the administrative reform:

13. The university administration’s commitment to using the results of the Linkage project:

Research Question 3: Has the administrative change at NAUU had relevance to the CBAM levels of use of the key elements of the institutional reform?

Questions 27-30 were developed to answer this research question:

27. I know about the new administrative structure at NAUU

28. I think the new administrative structure is more efficient than the old one.

29. I have attended the meetings where the new administrative structure was discussed

30. I cannot tell the difference between the old and new administrative structures

Research Question 4: Is the English language proficiency related to the levels of use of the key elements of the institutional reform?

Questions 7 and 8 were developed to answer this research question:

7. I can speak English
   ---- yes
   ---- no
If yes, you can speak English
----- fluently
----- not fluently, but enough to lead a conversation
----- not very well

8. I can read English:
----- yes
----- no
If yes, you can read English
----- without a dictionary
----- with a dictionary

Research Question 5: Is the Iowa State University Linkage project the appropriate process
to facilitate educational changes in foreign educational institutions?

Questions 18-41 were based on the questionnaire format used in CBAM model (Hall, 1973):

18. I share my materials with my colleagues from other universities.

19. I regularly update my teaching materials by adding the information from professional
   journals.

20. I have changed my teaching materials according to the new curriculum.

21. I am constantly developing new teaching materials as the result of the Linkage
    project.

22. I share the new methods of teaching with my colleagues

23. I use the teaching media center to develop teaching aids.

24. I use the new teaching aids on regular basis.

25. I have recommended to my peers at other Agricultural schools to use the new
    curriculum.

26. I have sought advice from my American colleagues on how to improve the new
    curriculum
Questions 31-41 were based on a Likert-type scale:

31. The majority of the students like the new curriculum
32. I am developing a new syllabus based on the results of the Linkage project
33. I understand the new curriculum well
34. I am regularly involved in improvement of the new curriculum
35. I seek advice from the business community on how to improve the new curriculum
36. I advise my peers from other Agricultural universities how to develop the new teaching materials
37. I am regularly read the literature on new curricula
38. I intend to improve the new curriculum in the future
39. The new teaching materials are very helpful in the teaching process
40. I am using my old teaching materials
41. The new teaching materials reflect the changes in the curriculum

The questionnaires and instructions were distributed among the volunteers, participants of the Linkage project in October 1997 in Kiev Ukraine, by an assistant to the Rector of the National Agriculture University of Ukraine. The questionnaires were distributed in the conference hall of the Administrative building of the NAUU. The instructions explained the purpose of the study and requested the participant’s cooperation in completing the questionnaire. The letter guaranteed an assurance of the confidentiality and the addressed the volunteer nature of the entire process.
Questionnaire format

The first and the second parts of the survey instrument were designed to: (a) obtain demographic information; (b) assess the degree of the faculty participation in professional organizations; and (c) assess the participants’ level of knowledge of the English language.

In the Ukraine there are two postgraduate degrees: the so called Candidate of Sciences, and Doctor of Sciences. The Candidate of Sciences is a degree that requires 3 years of graduate studies and defense of the Candidate of Sciences thesis. On the other hand, the Doctor of Sciences requires a number of years of teaching and research experience, and a sabbatical leave to write a dissertation. The three parts of the instrument were developed to address the issues that concern training transfer researchers and are relevant to the present investigator’s study.

Baldwin and Ford (1988) reported on the absence of theory on the characteristics of trainees to ascertain how trainees demographics is related to the degree of training transfer. They also identified a lack research on institutional environmental factors impacting the degree of transfer such as encouragement, performance conducive circumstances, and working conditions. Noe and Schmitt (1986) also pointed out that work environment has a direct influence on motivation to learn. “Trainees may be cognizant of task constraints and/or nonsupportive supervisors and coworkers that will inhibit use of knowledge and skills acquired in training” (p. 502).

A knowledge of the language of instruction can also be an important factor related to the training transfer Newstrom (1985). This is why it was important to determine the English proficiency of the Ukrainian participants.
The third part of the instrument consisted of Levels of Use questionnaire based on the Concerns-Based Adoption Model (CBAM) developed by Hall, Wallace, and Dossett (1973). There are six Levels of Use: (1) LoU-Nonuse; (2) LoU-Orientation; (3) LoU-Preparation; (4) LoU-Routine; (5) LoU-Integration; and (6) LoU-Renewal (Hall & Hord, 1987). These Levels of Use can be assessed by using the CBAM questionnaires developed by Hall et al. (1973). The CBAM questionnaire determines if the innovation or training transfer has been successfully implemented and whether there were possibilities to use the new acquired skills. Trainees’ awareness of the presence or absence of possibilities to use the skills they have gained during training can have an impact on their performance (Bahn, 1973). The questions range from regular use to no use of the elements of the key components of the Linkage projects.

Protection of human subjects

The questionnaire was anonymous; there was no request to provide a name. The participants were provided with a sealable envelope in which they returned the questionnaires. They were asked to complete the questionnaire in a large group session in October 1997. The instructions and the questionnaire were written in Ukrainian, the participants’ native language. Approval for the study was obtained from the Iowa State University Human Subjects in Research Committee (see Appendix B), prior to the sessions where the participants were asked to fill out the questionnaire.
CHAPTER IV. FINDINGS

The purpose of this chapter is to present the results of the assessment of the University Affiliation Project between Iowa State University and the National Agriculture University of Ukraine using the Concerns-Based Adoption Model. The data analysis begins with a discussion of the demographics, knowledge of English, the school climate, and administrative reform variables. The final analysis is an assessment of the Linkage project’s effectiveness by determining the CBAM model Levels of Use (Hall & Hord, 1987).

The data were gathered from analysis of 45 questionnaires (see Appendix A) that were filled out by volunteers who were participants of the Linkage University Affiliation Project at the National Agriculture University in Kiev in October, 1997.

Characteristics of the Respondents

There are three levels of education of the participants of the Linkage project from NAUU: the so-called Specialist, Candidate of Sciences, and Doctor of Sciences. A Specialist, depending on the discipline, would correspond approximately to an American Bachelor of Science degree. The main difference between a Bachelor of Science and a Ukrainian Specialist degree is that Ukrainian students have more general education courses and spend more time on internships.

The Candidate of Science degree is comparable to the American Doctor of Philosophy degree which takes about three years of studies plus the successful completion and defense of a dissertation. The main difference between two degrees is that the number of
courses the Ukrainian students are required to take is less, and the main emphasis is on conducting independent research.

Finally, the Doctor of Sciences degree is comparable to a full professorship. It entails a number of years of academic and teaching experience plus a "doctoral dissertation" that is supposed to be a definitive contribution to the discipline.

The data on education background of the participants (Table 2) show that the majority of the respondents hold the Candidate of Sciences degree. This means that 60 percent are middle-aged academics who have a potential to grow professionally and receive a Doctor of Sciences degree. One third of the participants have Doctor of Science degrees. Overall, 91 percent have additional education beyond the Specialist degree, which indicates that the Ukrainian participants are well-educated.

Membership in professional organizations

Question two was designed to determine whether the participants of the Linkage project belonged to professional organizations. The professional organizations that the

<table>
<thead>
<tr>
<th>Survey Question 1</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The highest degree I have earned:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialist</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Candidate of Science</td>
<td>27</td>
<td>60</td>
</tr>
<tr>
<td>Doctor of Science</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100</td>
</tr>
</tbody>
</table>
respondents listed included such professional associations as the Forestry Professional Association of Ukraine, the Agricultural Economists Association of Ukraine, the Association of Agricultural Engineers of Ukraine, the American Association of Engineers, and the New York Academy of Sciences. The data in Table 3 reveal that the majority of the respondents belong to professional organizations in their disciplines. The Linkage project provided for membership fees that also allowed the Ukrainian participants to join American professional associations.

Table 3. Membership of the respondents in professional organizations

<table>
<thead>
<tr>
<th>Survey Question 2</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership in a professional organization:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38</td>
<td>84.4</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>15.6</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Journals read on a regular basis**

The respondents were asked to list the professional journals they read on a regular basis. All of the respondents indicated that they read professional journals that covered issues that pertained to their disciplines. The respondents reported that they read such international journals as *Solo Energy for Sustainable Development, Forestry, Plant Pathology, International Journal of Mechanical Fracture, Nature, European Journal of Soil Sciences,* and *Journal of Inorganic Chemistry.* Data exhibited in Table 4 indicate that all 45
Table 4. Professional journals read by respondents

<table>
<thead>
<tr>
<th>Survey Question 3</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I read professional journals:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>90</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100</td>
</tr>
</tbody>
</table>

participants indicated that they read journals in their profession. This indicates that the respondents are actively engaged in learning about and keeping up-to-date in their discipline.

**Attendance at workshops on the new curriculum**

A series of workshops were conducted on campus of the NAUU in Kiev as a part of the Linkage project. The workshops covered the key areas of the educational reform at the National Agriculture University of Ukraine and were prepared by the Iowa State University affiliation project team. These workshops drew a lot of attention from the faculty of the NAUU. The results shown in Table 5 provide additional proof of the interest of the respondents in the workshops. Forty-four of the 45 respondents indicated that they attended the Linkage project workshops.

**Willingness to assist others with the objectives of the Linkage project**

One of the characteristics of the Ukrainian participants of the Linkage project that will have a long affect on the higher education in the country is willingness to share the new
Table 5. Attendance of the respondents at the Linkage workshops

<table>
<thead>
<tr>
<th>Survey Question 4</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have attended the workshops:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>44</td>
<td>97.8</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100</td>
</tr>
</tbody>
</table>

knowledge (Table 6). This willingness to help other instructors and administrators to understand the objectives of the project was quite high among the respondents.

Number of years of teaching at NAUU

Teaching experience is an important factor that has to be taken into consideration when one attempts to evaluate educational programs. Traditionally, after getting a degree in Ukraine the graduate students would stay at the university they have attended. Faculty also tend to stay at one institution for the duration of their professional career. What also affected

Table 6. Willingness of the respondents to assist others to understand the objectives of the Linkage project

<table>
<thead>
<tr>
<th>Survey Question 5</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have been helping other instructors and administrators to understand the objectives of the Linkage project:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>40</td>
<td>88.8</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>11.2</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>
the number of years of experience variable was the fact that the participants of the Linkage project were experienced faculty and administrators who had been selected by the top administration of NAUU. Table 7 reveals that the majority of the participants of the project were very experienced educators. Almost one-third had 1-10 years of teaching experience at NAUU, whereas more than two-thirds had from 11-35 years of experience at NAUU.

**English language proficiency**

Although the Linkage project team has used interpreters for interaction, the knowledge of the English language was helpful to discuss professional topics. The Ukrainian participants were struggling with the terminology even if they knew English well enough to socialize. As shown in Table 8, nearly all (91%) of the participants responded that they spoke English fluently or well enough. On the other hand, three-fourths (76%) had to use a dictionary, which may explain some of their frustration with terminology of spoken English. Nearly 70 per cent professed a knowledge of written English. This enabled most of the

<table>
<thead>
<tr>
<th>Survey Question 6</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of years teaching at NAUU:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 10</td>
<td>14</td>
<td>31.2</td>
</tr>
<tr>
<td>11 - 20</td>
<td>13</td>
<td>28.8</td>
</tr>
<tr>
<td>21 - 35</td>
<td>18</td>
<td>40.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 8. English language proficiency of the respondents (n = 45)

<table>
<thead>
<tr>
<th>Survey Questions 7 and 8</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you speak English?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>23</td>
<td>51.1</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
<td>48.9</td>
</tr>
<tr>
<td>How well do you speak English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (fluently)</td>
<td>5</td>
<td>11.1</td>
</tr>
<tr>
<td>2 (enough)</td>
<td>36</td>
<td>80.0</td>
</tr>
<tr>
<td>3 (not well)</td>
<td>4</td>
<td>8.9</td>
</tr>
<tr>
<td>Can you read English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (yes)</td>
<td>31</td>
<td>68.8</td>
</tr>
<tr>
<td>2 (no)</td>
<td>14</td>
<td>31.2</td>
</tr>
<tr>
<td>Do you have to use the dictionary?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (no)</td>
<td>11</td>
<td>24.4</td>
</tr>
<tr>
<td>2 (yes)</td>
<td>34</td>
<td>75.6</td>
</tr>
</tbody>
</table>

Ukrainian participants to keep up with the current research in their disciplines and made it easier to update the content of the courses at NAUU.

As the result of translation of the questionnaire from English into Ukrainian, some of the questions that had been originally on the Level of Use were transferred from a linear to a dichotomous scale. In order to analyze the data, the questionnaire items were summed to create the variables for use in this study. Summing the scale items in this way created dichotomous variables where previously only dichotomous variables had existed.
The data were coded in such a way as to give one point to a participant who answered "yes" to a question and none to a participant who answered "no". Therefore, when several of these questions were summed, the possibility existed for the participants to score as few as zero points or as high as ten, if there were ten questions summed. In the case that only five questions were summed, the maximum points available would have been five. Thus, linear variables were created from sums of dichotomous variables. Doing so allowed for the hypotheses tests to be conducted using parametric statistics.

The results of the summed composites of the items on a Likert scale and their descriptive statistics are shown in Table 9. These composite scores were created to get at the general response to the survey and to allow for the use of the inferential statistics. The creation of the composite scores was based on the assumptions that some questions had similar characteristics that enabled lumping them together to form a composite. Descriptive statistics for the non-dichotomous, non-demographic variables of the total sample are shown in Table 10.

The CBAM model levels of use questions were put on the Likert scale, but as the result of the translation some of the questions were put on a dichotomous scale. Table 11

Table 9. Results of the summed composites and their descriptive statistics for Questions 19-41 (All Levels of Use)

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Number of items</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>.7987</td>
<td>23</td>
<td>60.422</td>
<td>9.416</td>
<td>30-75</td>
</tr>
</tbody>
</table>
Table 10. Descriptive statistics for the non-dichotomous, non-demographic variables of the total sample

<table>
<thead>
<tr>
<th>Question</th>
<th>Reliability</th>
<th>No. of Items</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative change</td>
<td>-.1016</td>
<td>4</td>
<td>2.033</td>
<td>.809</td>
<td>1-4</td>
</tr>
<tr>
<td>(27-30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English ability</td>
<td>.8483</td>
<td>4</td>
<td>2.444</td>
<td>.809</td>
<td>1-4</td>
</tr>
<tr>
<td>(7-10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School environment</td>
<td>.7998</td>
<td>6</td>
<td>20.40</td>
<td>4.109</td>
<td>8-30</td>
</tr>
<tr>
<td>(11, 12, 14-17)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal characteristics</td>
<td>.3377</td>
<td>9</td>
<td>10.55</td>
<td>2.518</td>
<td>6-16</td>
</tr>
<tr>
<td>(2-5, 7-10, 13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 11. Descriptive statistics for the dichotomous variables of the Levels of Use

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>19.</td>
<td>I regularly update my teaching materials by adding the information from</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>professional journals</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>I have changed my teaching materials according to the new curriculum</td>
<td>40</td>
</tr>
<tr>
<td>21.</td>
<td>I am constantly developing new teaching materials as the result of the</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Linkage project</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>I share the new methods of teaching with my colleagues</td>
<td>33</td>
</tr>
<tr>
<td>23.</td>
<td>I use the teaching media center to develop teaching aids</td>
<td>24</td>
</tr>
<tr>
<td>24.</td>
<td>I use the new teaching aids on a regular basis</td>
<td>36</td>
</tr>
<tr>
<td>25.</td>
<td>I have recommended to my peers at other Agricultural schools to use the</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>new curriculum</td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>I have sought advice from my American colleagues on how to improve the</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>new curriculum</td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>I know about the new administrative structure at NAUU</td>
<td>38</td>
</tr>
<tr>
<td>28.</td>
<td>I think that the new administrative structure is more efficient than the</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>old one</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>I have attended the meetings where the new administrative structure was</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>discussed</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>I can not tell the difference between the old and new administrative</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>structures</td>
<td></td>
</tr>
</tbody>
</table>
presents the results of the levels of use put on the dichotomous scale, and Table 12 gives the results of the levels of use put on the Likert scale. Table 11 reveals that the majority of the respondents regularly update and change the teaching materials (questions 19 & 20), but only 29 out 45 respondents regularly develop new teaching materials as the result of the Linkage project (question 21). More than 50 percent of the respondents (33 out of 45) share the new teaching methods with their colleagues. Only 24 out of 45 respondents use the new media center to develop teaching aids (question 23). Thirty-six out of 45 respondents use the new teaching aids on a regular basis (question 24).

Many of the respondents (25 out of 45) share their Linkage project experience with the colleagues at other agricultural schools in Ukraine (question 25). Question 26 asked the respondents if they sought an advice from their American peers. Only 28 out of 45 respondents indicated that they sought advice from their colleagues from the USA.

Questions 27 - 30 sought information on the knowledge of the respondents about the administrative reform at NAUU. Thirty-eight out of 45 respondents knew about the new administrative structure at the NAUU (question 27). Thirty-three out of 45 respondents believed that the new administrative structure was more efficient than the old one (question 28). The same number of the respondents attended the meetings devoted to the administrative changes at NAUU (question 29). Twenty-seven out 45 respondents could not tell the difference between the new and the old administrative structures at NAUU (question 30).

Table 12 gives responses on the CBAM levels of use. Questions put on the Likert scale allow one to get a more precise picture of the results of an innovation project. In the
Table 12. Descriptive statistics for the Levels of Use on the Lickert scale

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>The majority of my students like my new curriculum</td>
<td>1  2  17  15  19  0</td>
</tr>
<tr>
<td>32</td>
<td>I am developing a new syllabus based on the results of the Linkage project</td>
<td>0  1  4  11  2  27</td>
</tr>
<tr>
<td>33</td>
<td>I understand the new curriculum</td>
<td>2  0  0  4  1  38</td>
</tr>
<tr>
<td>34</td>
<td>I regularly improve the new curriculum</td>
<td>25 0 1 4 2 13</td>
</tr>
<tr>
<td>35</td>
<td>I advised my peers from other Agriculture universities how to develop new teaching materials</td>
<td>3  5  2  6  5  25</td>
</tr>
<tr>
<td>36</td>
<td>I seek advice from the business community to improve the new curriculum</td>
<td>19 0 2 4 3 17</td>
</tr>
<tr>
<td>37</td>
<td>I am regularly reading literature on new curricula</td>
<td>4  1 10 4 3 23</td>
</tr>
<tr>
<td>38</td>
<td>I intend to improve the new curriculum in the future</td>
<td>1  0 1 2 1 40</td>
</tr>
<tr>
<td>39</td>
<td>The new teaching materials are very helpful in the teaching process</td>
<td>0  3 2 0 3 37</td>
</tr>
<tr>
<td>40</td>
<td>I am using my old teaching materials</td>
<td>7  2 2 7 3 24</td>
</tr>
<tr>
<td>41</td>
<td>The new teaching materials reflect the changes in the curriculum</td>
<td>0  2 3 3 1 36</td>
</tr>
</tbody>
</table>

case of the assessment of the results of the Linkage project, the CBAM levels of use model revealed that the majority of the respondents 42 out of 45 believed that their students thought that the new curriculum was liked by the students (Question 31). However, in the Likert scale "the respondents use the response continuum to indicate the degree of strength of their endorsement" (Crocker & Algina, 1986, p. 79), 17 respondents thought it was sometimes true, 15 respondents thought it was fairly true, and 10 respondents believed it was often true.
In questions 32 and 33 the respondents were requested information on the levels of use of the new curriculum. Twenty-seven and 38 respondents, respectively, felt that it was very true of them that they used the new curriculum. It is a strong endorsement of the curriculum that became the major result of the Linkage project. Yet, 25 respondents did not regularly improve their new curriculum (question 34). The respondents indicated that they advised their peers on how to use the new curriculum. Twenty-four out of 45 thought it was very true of them and the rest felt the same way, but at various degrees (question 35).

The business community's advice was not sought by 19 out of 45 respondents, and the rest of respondents were interested in the opinion of the business community to various degrees (question 36). Questions 37 and 38 requested information on the new curriculum's implementation. Twenty-three out 45 respondents agreed strongly that they read the literature on the new curriculum and the rest of the respondents agreed with that statement at various degrees of strength (question 37). Yet, there is a place for improvement and 40 out of 45 respondents reported that they intended to improve the new curriculum in the future (question 38).

Questions 39, 40, and 41 were devoted to the teaching materials. Although 37 out 45 respondents agreed that the new teaching materials were helpful (question 39), 24 felt strongly about using their old materials (question 40).

Testing the Hypotheses

Five hypotheses were formulated to answer the research questions. As the result of the translation from English into Ukrainian, some of the CBAM model levels of use were put
on a dichotomous scale instead of the Likert scale that was used in the original questionnaire.

For the purpose of statistical analysis all levels of use questions were put on a dichotomous scale. A discussion of the results is presented for each hypothesis.

**Question 1:** Are personal characteristics of the faculty related to the CBAM levels of use of the key elements of the institutional reform at NAUU?

*Ho*: The personal characteristics of the faculty are not correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

*Ha*: The personal characteristics of the faculty are correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

The Pearson product-moment correlation, \( r = -0.0167, p > 0.05 \) showed no significant correlation between the personal characteristics and the CBAM levels of use of the elements of the institutional reform at NAUU. Thus, we accept the Ho hypothesis that the personal characteristics of the faculty are not correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

**Question 2:** Are school environment factors related to the CBAM levels of use of the elements of the institutional reform at NAUU?

*Ho*: The school environment factors are not correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

*Ha*: The school environment factors are correlated with the CBAM levels of use of the elements of the institutional reform at NAUU.

The Pearson product-moment correlation, \( r = 0.6396, p < 0.05 \) showed a significant correlation between the school environment factors and the CBAM levels of use of the elements of the institutional reform at NAUU. Thus the Ho hypothesis that the school environment factors are not correlated with the CBAM levels of use of the elements of the institutional reform at NAUU was rejected.
Question 3: Has the administrative change at NAUU had relevance to the CBAM levels of use of the key elements of the institutional reform?

Ho: The change of the administrative structure is not correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

Ha: The change of the administrative structure is correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

The Pearson product-moment correlation $r = .3817$, $p>.05$ showed no significant correlation between the change of the administrative structure and the CBAM levels of use of the key elements of the institutional reform at NAUU. Thus, we accept the Ho hypothesis that the change of the administrative structure is not correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

Question 4: Is proficiency in the English language related to the CBAM levels of use of the key elements of the institutional reform at NAUU?

Ho: Proficiency in the English language is not correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

Ha: Proficiency in the English language is correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

The Pearson product-moment correlation $r = -.2485$, $p>.05$ showed no significant correlation between the proficiency in the English language and the CBAM levels of use of the key elements of the institutional reform at NAUU. Thus, we accept the Ho hypothesis that proficiency in the English language is not correlated with the CBAM levels of use of the key elements of the institutional reform at NAUU.

Question 5: Is the Iowa State University Linkage project the appropriate process to facilitate educational changes in foreign educational institutions?

In attempt to answer this question, the mean and the variance of the CBAM levels of use were chosen to reflect the degree of curriculum transfer from the ISU to NAUU. The
factor that correlated significantly with the CBAM levels of use of the Linkage project was
the school environment. The fact that the renewed curriculum at NAUU has been recognized
in Ukraine at the government level is also a significant indication that the ISU Linkage
project is the appropriate process for international training transfer in higher education.
CHAPTER V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This investigation was initiated to assess University Affiliation (Linkage) project (Crawford & Melnichuk, 1994) between Iowa State University and the National Agriculture University of Ukraine using the Concerns-Based Adoption Model. The research design of this study was a descriptive survey of the Ukrainian participants of the Linkage project. The survey instrument was translated into Ukrainian and the representatives of the National Agriculture University Department of Pedagogy were asked to comment on the instrument’s content during the investigator’s trip to Kiev, Ukraine in the fall of 1997. The questionnaires were distributed among those faculty and administrators of the National Agricultural University of Ukraine who volunteered as participants of the Linkage projects to fill out the questionnaires.

Summary

The data were gathered from analysis of 45 questionnaires filled out by the Ukrainian participants of the Linkage project to determine the CBAM model Levels of Use of the key elements of educational reform at the National Agriculture University of Ukraine. The findings of the study were presented in the previous chapter. This summary reiterates the research questions and summarizes the results of the research. There were five research questions of the study:

1. Are personnel characteristics of the faculty related to the levels of use of the key elements of the institutional reform at NAUU?
2. Are school environment factors related to the levels of use of the elements of the key elements of the institutional reform at NAUU?

3. Is the administrative change at NAUU related to the levels of use of the key elements of the institutional reform?

4. Is the English language proficiency related to the levels of use of the key elements of the institutional reform?

5. Is the Iowa State University curriculum transfer an appropriate process for the National Agricultural University of Ukraine?

The survey instrument was used to test the hypotheses of the study. The instrument was developed based on the instrument that was used by Forsgren (1997) in his research in which he used CBAM model. The instrument was divided into four sections. Section one asked for information on social and demographic characteristics of the respondent. The demographic characteristics that were collected on the participants of the Linkage project included: years of experience, subscription to professional journals, participation in conferences devoted to the Linkage project, the English language proficiency and membership in professional organizations. Section two concerned the administrative changes at the National Agriculture University of Ukraine. Section three was intended to measure the changes in the school environment. Section four of the questionnaire measured the participants' levels of use of the results of the Linkage project. The Concerns-Based Adoption Model (CBAM) was used to create items to measure the respondents' use or nonuse of the key elements of the Linkage project. Originally, the CBAM questions were put
on the Likert scale, but as the result of the translation from English into Ukrainian the first 10 questions were converted into a dichotomous scale.

Descriptive and inferential statistics were used to find if there was a significant correlation between the demographic characteristics and the levels of use of the key elements of the Linkage project. The statistical analysis was also used to find if there was a significant correlation between English proficiency and the levels of use of the key elements of the Linkage project. The correlation between the administrative reform and the levels of use of the key elements of the Linkage project was also statistically analyzed. The school environment and the levels of use of the key elements of the Linkage project were also correlated to find if there was a significant correlation between those two factors. The statistical analysis of the data gathered based on the CBAM model was conducted to test if the ISU Linkage project was the appropriate process to be used at NAUU.

Conclusions

This study had five research questions that were tested statistically in order to see if the Linkage project results could be assessed using the CBAM model.

*Question 1: Are personal characteristics of the faculty related to the CBAM levels of use of the key elements of the institutional reform at NAUU?*

The personal characteristics of the participants of the Linkage project have shown no significant correlation to the CBAM levels of use. This investigation included the personal characteristics such as years of experience, participation in the conferences, sharing the Linkage project results with others, membership in professional organization and the level of
education. These personal characteristics did not appear to be related to the CBAM levels of use.

**Question 2: Are school environment factors related to the CBAM levels of use of the elements of the institutional reform at NAUU?**

The statistical tests confirmed that the school environment is correlated with the level of use. In this study, the school environment included such factors as the faculty’s and students’ attitude regarding the results of the Linkage project, the use of the new curriculum, personal interest in implementation of the Linkage project, and support among the faculty of the NAUU for the changes brought about by the project. The school environment turned out to be the most important factor associated with the levels of use of the key elements of the Linkage project at NAUU.

**Question 3: Has the administrative change at NAUU had relevance to the CBAM levels of use of the key elements of the institutional reform?**

This research revealed that the administrative change was not correlated to the CBAM levels of use. The administrative change included such elements as change of the administrative structure, faculty attendance of the meetings where the administrative changes were discussed, and the awareness of the majority of the faculty of the implications of the administrative change for the NAUU. The administrative change at NAUU started at the last stage of the Linkage project and is still going on. This might explain why the administrative change has no relation to the training transfer.

**Question 4: Is proficiency in the English language related to the CBAM levels of use of the key elements of the institutional reform at NAUU?**
The proficiency in English was determined based on the ability of the Ukrainian participants of the Linkage project to speak English and to read English materials. The results showed that only about fifty per cent of the Ukrainian participants had spoken command of the English language. Yet the lack of the English language skills did not have relation to the levels of use of the key elements of the educational reform at the NAUU.

**Question 5: Is the Iowa State University Linkage project the appropriate process to facilitate educational changes in foreign educational institutions**

The appropriateness of the Iowa State University approach was tested by using a questionnaire that requested the Ukrainian participants to answer questions on the usefulness of the ISU curriculum transfer, use of new teaching materials, use of teaching aids, and application of the recommendations of the ISU Linkage team.

The CBAM model levels of use indicated that the ISU Linkage project was quite appropriate for the technology transfer Linkage project. The high level of use of the new curriculum, teaching methods, and the new teaching aids indicated that the technology transfer was quite successful. The most significant factor that correlated with the CBAM levels of use was school environment.

**Limitations**

The survey instrument of this study was translated from English into Ukrainian. During the translation some of the CBAM model questions were put on dichotomous scale, while in the English version they were on Likert scale. An explanation for this change could be that the translator did not understand the nature of the Likert scale. A more sinister interpretation could be that the translators wanted to put the “best face” on the results, i.e., the
respondents would answer only “yes” because of their reluctance to answer “no” after participation in the project. To overcome the problem that was caused by the translation, on recommendation from Dr. Strahan, the entire CBAM levels of use were converted into dichotomy.

While an attempt was made to make the study a worthy contribution to educational research, the following other limitations must be noted:

1. The ISU/NAUU teams had no plan for quantitative evaluation of the results of the Linkage project.
2. There was no attempt made to see if the students’ achievement was related to the CBAM levels of use.
3. The students, who were the main target of the Linkage project curriculum reform, were not surveyed in this study to determine if the training transfer had impact on their learning experience.
4. The study relied on self-reporting of the participants of the Linkage project.
5. The ISU participants of the Linkage project were not surveyed as a part of this study.
6. The sample size was small.

Discussion

The purpose of this study was to assess the successful implementation of the university affiliation project between the Iowa State University and the National Agriculture University of Ukraine. The Linkage project was implemented by an ISU and an NAUU
team, and it became obvious that it would be necessary to assess the results of the project quantitatively in order to continue to develop the partnership between two schools. The key elements of the Linkage project included the curriculum review, administrative structure change, and the establishment of the English language center.

There were three formative assessments done as part of the Linkage project: (1) First survey; (2) Second survey; and (3) Impact study (de Baca, 1995, 1996). The major findings of the formative assessments were relevant to those of the CBAM model.

Some responses to the Impact study questionnaires of the NAUU's participants of the Linkage project emphasized the general success of the Linkage project team (see Appendix C). The Ukrainian participants were pleased with establishing of the teaching media center ("equipment supply", "information support", and "teaching support"). They were also positive about the change of the curriculum and teaching materials ("curriculum change" and "designing new educational plans"). The Ukrainian participants who answered the Impact survey questions indicated that there were some changes in administrative structure of NAUU ("change in the university administration", "increase in effectiveness of work", and "office of provost created"). Some responses to the survey contained what in this research is called personal characteristics ("becoming members of professional organizations").

Overall, the formative assessment (de Baca, 1995, 1996) done by the Linkage team was very important for determining if the Linkage project was a success. The Concerns-Based Adoption Model was used in this study to evaluate the results of the Linkage project. The training transfer assessment requires consideration of such factors as personal characteristics, school environment, change of administrative structure (Ford & Weissbein,
An international project transfer process has also a foreign language component; thus, in this study it was also important to assess how the proficiency in English was related to the success of a training transfer.

The CBAM model has reinforced the earlier findings of the Linkage team (de Baca, 1995, 1996). In general, the survey for this investigation found results similar to the formative evaluation in regards to the use of Carnegie units, computer-assisted teaching and testing, curriculum reform, and administrative changes.

The statistical analysis showed that there was only one significant correlation, which was between the school environment factors and the CBAM levels of use of the Linkage project. The remainder of the correlations, such as the correlation between the personal characteristics, administrative structure change and the proficiency in English, did turn out to be significant.

The fact that the CBAM model did not correlate with the personal characteristics might mean that the CBAM model has not been designed to reflect the relationship between personal characteristics and level of use. It might also mean that this study did not have a survey instrument capable to discover a correlation between personal characteristics and training transfer.

This study revealed that the school environment has a significant correlation with the CBAM levels of use and, thus, had a relationship to the success of the training transfer. Sorohan (1993) indicated that school environment played a significant role in the success of training transfer programs. This research has shown that the ISU Linkage program created a conducive atmosphere on campus of the National Agriculture University of Ukraine. That
conducive atmosphere was associated with better results of training and training transfer. This study also showed that the levels of use of the CBAM model were significantly correlated to school environment and the necessary conditions were in place for the training transfer to occur at NAUU.

The statistical analysis in this study revealed that the personal characteristics did not relate to the CBAM levels of use of the results of the Linkage project. In general, the literature on training transfer evaluation indicates that there is no reliable instrument that can assess a relationship between personal characteristics and training transfer (Quinones, Ford, & Teachout, 1995; Smith-Jentsch, 1996). In this study the CBAM levels of use model did not help to find a significant correlation with personal characteristics and did not allow one to show if there was a relationship between the personal characteristics of the project participants and training transfer.

English language proficiency was not significantly correlated with the CBAM levels of use. The Linkage project team has heavily depended on translators and interpreters, and, although it was expensive, the lack of English skills did not have a relationship with successful training transfer.

The change of administrative structure did not have a relationship with the CBAM levels of use. The Linkage project encouraged the NAUU administration to make attempts to change its administrative structure, but there was not enough time to have a substantial impact on the levels of use. An explanation for the lack of significant correlation between the administrative change and the CBAM levels of use might be also the fact that the process
of administrative change was taking place during the last stage of the Linkage project and, thus, was not carried out to its full extent.

The main change was the introduction of a new position of Provost and the creation of the Provost’s office. Other changes are still being introduced and the process of administrative change at NAUU is not yet finished.

The Iowa State University Linkage project appears to be as appropriate process for curriculum transfer to an international institution. The National Agriculture University has adopted some key elements of the ISU curriculum and introduced the new teaching methods and teaching aids on campus. The change of the university environment has shown a significant correlation with the CBAM levels of use of the key elements of the Linkage project, which included an ISU model of curriculum transfer. The results of the Linkage project ISU have been recognized by the Ukrainian government. The Linkage project is currently being tested at the graduate school level at the National Agriculture University of Ukraine as the result of an extension to the Linkage project, funded by the United States Information Agency.

**Recommendations for Practice**

The following recommendations for practice are offered to help international organizations to use the ISU Linkage project team approach.

1. The universities involved in international activities should develop a CBAM assessment plan as a part of the project before the implementation starts.
2. The university affiliation teams from all the participating universities should be introduced to the main principles of the ISU Linkage project and the CBAM model assessment plan.

3. The university affiliation projects using the ISU approach should focus on improving school environment and creating a conducive climate that would facilitate school reform.

4. Although the English language proficiency did not seem to affect the CBAM model assessment of the Linkage project, it would make it much easier to assess the results of a Linkage project if all the participants have a good command of English.

5. The CBAM assessment requires some training, therefore, a group of the Linkage participants should be trained to conduct surveys and interviews based on the CBAM model.

6. Administrative change as a part of the ISU Linkage project should be started simultaneously with the implementation of the training project.

Recommendations for Further Research

Based on the findings and conclusions of this study, the following recommendations are submitted for further consideration by other researchers using the ISU Linkage team's approach and the CBAM model for assessment of international projects.

1. Research should be conducted to determine the impact of using the ISU Linkage team approach on international project development.
2. Research should be carried out to see if the ISU Linkage project team's approach can be applied in other Eastern European countries.

3. A study should be made to determine if the CBAM model can be used to find if there is a relationship between personal characteristics and the levels of use.

4. Research should be conducted to find if the ISU Linkage team's approach can be used to introduce administrative changes at other institutions undergoing changes in Eastern Europe.

5. A comparative study of several international program assessment methods should be made to determine which of them assess university affiliation projects best.

6. All the components of the CBAM model should be used to determine if interviews can be as effective as the written surveys the researcher used in this study.

7. When the NAUU has finished changing its administrative structure a research study should be conducted on the relationship between the CBAM levels of use and administrative change.

8. Another study using both questionnaires and interviews should be conducted to test the validity of the findings in this study.

The ISU/NAUU Linkage project team has implemented an important international project that took a lot of effort from both sides. The willingness of the ISU and NAUU administration and faculty to reform a system of higher education in the Ukraine is a very important step in educational change in Eastern Europe.
APPENDIX A. SURVEY INSTRUMENT

Please give the responses to the following questions:

1. The highest degree I have earned:
   ___ 1 Specialist
   ___ 2 Candidate of Sciences
   ___ 3 Doctor of Sciences

2. I belong to the following professional organization:
   yes-1
   no-0

3. I read the following professional journals:
   yes-1
   no-0

4. I have attended conferences and workshops where the new curriculum was discussed.
   1-yes
   0- no

5. I have been helping other instructors and administrators to understand the objectives of
   the Linkage project.
   ___ yes
   ___ no

6. The number of years I have been teaching at the National Agriculture University.
   1-10--1; 11-20--2; 21-35--3

7. I can speak English
   1-yes
   0- no

8. If yes, you can speak English
   ___ 1- fluently
   ___ 2- not fluently, but enough to lead a conversation
   ___ 3- not very well
9. I can read English:
   1- yes
   2- no

10. If yes, you can read English
    1- without a dictionary
    2- with a dictionary

Please rate the following questions on a scale from 1 being the lowest to 5 being the highest.

11. The majority of the faculty at NAUU knows about the results of the Linkage project:
    No knowledge.......................................................... Much knowledge

12. The majority of the faculty at NAUU uses the new curriculum:
    Low support.......................................................... High support

13. My personal interest in implementing the Linkage project:
    Low interest.......................................................... High interest

14. The majority of the faculty at NAUU supports the administrative reform:
    Low support.......................................................... High support

15. The university administration’s commitment to using the results of the Linkage project:
    No commitment.......................................................... Much commitment

16. The majority of the faculty uses the media center to develop teaching aids:
    Low use.......................................................... High use

17. The majority of the faculty approves of the results of the Linkage project:
    Low approval.......................................................... High approval

18. (changed) I share my materials with my colleagues from other universities:
    1-yes
    0- no
Levels of Use Section

19. (changed) I regularly update my teaching materials by adding the information from professional journals
   yes-1
   no-0

20. (changed) I have changed my teaching materials according to the new curriculum
   yes-1
   no-0

21. I am constantly developing new teaching materials as the result of the Linkage project
   yes-1
   no-0

22. I share the new methods of teaching with my colleagues in curriculum
   yes-1
   no-0

23. I use the teaching media center to develop teaching aids
   yes-1
   no-0

24. I use the new teaching aids on a regular basis
   yes-1
   no-0

25. I have recommended to my peers at other Agricultural schools to use the new curriculum
   yes-1
   no-0

26. I have sought advice from my American colleagues on how to improve the new curriculum
   yes-1
   no-0

27. I know about the new administrative structure at NAUU
   yes-1
   no-0

28. I think that the new administrative structure is more efficient than the old one
   yes-1
   no-0

29. I have attended the meetings where the new administrative structure was discussed
   yes-1
   no-0

30. I cannot tell the difference between the old and new administrative structures
    yes-1
    no-0
<table>
<thead>
<tr>
<th></th>
<th>Not true of me</th>
<th>Seldom true of me</th>
<th>Sometimes true of me</th>
<th>Fairly often true of me</th>
<th>Often true of me</th>
<th>Very true of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.</td>
<td>The majority of my students like my new curriculum</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32.</td>
<td>I am developing a new syllabus based on the results of the Linkage project</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33.</td>
<td>I understand the new curriculum</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34.</td>
<td>I regularly improve the new curriculum</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>35.</td>
<td>I advised my peers from other Agriculture universities how to develop new teaching materials</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36.</td>
<td>I seek advice from the business community to improve the new curriculum</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>37.</td>
<td>I am regularly reading literature on new curricula</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>38.</td>
<td>I intend to improve the new curriculum in the future</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>39.</td>
<td>The new teaching materials are very helpful in the teaching process</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>40.</td>
<td>I am using my old teaching materials</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>41.</td>
<td>The new teaching materials reflect the changes in the curriculum</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
This questionnaire will be administered to the National Agricultural University of Ukraine faculty who have participated in technology transfer Linkage project.

1. They will be asked to complete the questionnaire in a large group session in October, 1997.

2. The participants will be provided with a sealable envelope in which they will return the questionnaires.

The following instructions will be read aloud:

The office of International Agriculture Program, College of Agriculture, Iowa State University is attempting to determine the success of the training transfer Linkage project conducted by ISU in 1994-1997.

One of the techniques to be used is a survey to be completed by the participants of the project from your university. Creation, analysis, and reporting of this survey will be a part of Victor Udin’s dissertation.

All of these questionnaires will be anonymous, no names will be placed on the instrument and no individual questionnaires will be identified with the report. No one is required to complete the questionnaires, however participation is very much appreciated and will help ISU to do a better job of technology transfer in the future.

If you choose not to participate, place the questionnaires in the envelope, seal it, and submit it at the end of this meeting.

The surveys and the envelopes will be distributed. Participants will be asked if they have questions before they start completing the questionnaires.

It is estimated that it will take about 20 minutes to complete this questionnaire. All the envelopes will be collected at the meeting and returned to the ISU campus for processing.
**APPENDIX B. HUMAN SUBJECTS APPROVAL**

The following are attached (please check):

12. ☑ Letter or written statement to subjects indicating clearly:
   a) the purpose of the research
   b) the use of any identifier codes (names, #s), how they will be used, and when they will be removed (see item 17)
   c) an estimate of time needed for participation in the research
   d) if applicable, the location of the research activity
   e) how you will ensure confidentiality
   f) in a longitudinal study, when and how you will contact subjects later
   g) that participation is voluntary; non-participation will not affect evaluations of the subject

13. ☑ Signed consent form (if applicable)

14. ☑ Letter of approval for research from cooperating organizations or institutions (if applicable)

15. ☑ Data-gathering instruments

16. Anticipated dates for contact with subjects:

<table>
<thead>
<tr>
<th>First contact</th>
<th>Last contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.06.97 Month/Day/Year</td>
<td>11.06.97 Month/Day/Year</td>
</tr>
</tbody>
</table>

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

   Month/Day/Year

18. Signature of Departmental Executive Officer

   [Signature]

   Date: 11/20

   Department or Administrative Unit

   Industrial Technology

19. Decision of the University Human Subjects Review Committee:

   - [ ] Project approved
   - [ ] Project not approved
   - [ ] No action required

   Patricia M. Keith
   Name of Committee Chairperson

   11.26.97
   Signature of Committee Chairperson
APPENDIX C. SUMMARY OF RESPONSES

ISU/NAUU Linkage Project
March 31 - April 28, 1995

EVALUATION SUMMARY

A. NAUU Team Members were asked to mark responses to orientation to ISU, ISU Departments, Iowa Agriculture, and to informative sessions in which the entire group participated.

Response Summary
Activities and events, such as orientation, tours to all department, the Iowa field trip and informative sessions were helpful. Department activities, attention to personal academic needs, and learning about student admission, orientation, advising and placement were very helpful.

B. Team Members were asked to indicated the extent to which their expectations had been met regarding the department, student services, material preparation, mission statement, planning for ISU team, and future Linkage activities.

Response Summary
Expectation toward Linkage objectives were met and in some cases exceeded expectations, including gaining understanding of partner departments, becoming aware of student life, and gathering materials to improve one or two of their courses at NAUU.

C. Team Members were asked to indicate their satisfaction with logistical arrangements.

Response Summary
All NAUU professors were either satisfied or very satisfied with housing, meals, interpretations, communication and length of visit to ISU. Many commented on the good organization of group activities and department meetings.

D. Team Members were encouraged to add comments.

Response Summary
- The visit gave me an opportunity to learn the academic process and the degree programs, the university and the education system in general
- I was happy to obtain an ISU professor’s evaluation of our present program in Ukraine.
- I was very impressed with the visits to families of three university professors.
• Acquaintance with student activities and organizations will help to make changes in the system at NAUU.

• What I learned about extension as part of the university will be of interest at NAUU.

• There wasn't enough time to spend at the library and in department—maybe on the next visit.

• People in the US are friendly; they are smiling.

• The visit to ISU helped me to understand a number of issues which are related to the teaching process (credit hours, selection of material, methodology used in teaching, faculty and staff development, total computerization advantages).

• Acquaintance with student activity organizations will help in making changes in the organizational system at NAUU.

• We want to establish a Media Center and introduce an academic program for teacher training in agriculture education.

• ISU professors work hard and are very responsible.

• This visit stimulated my thinking as well as provided concrete examples for change.

• I am grateful for this opportunity, for this destiny, and I appreciate everything.
SUMMARY OF IMPACT SURVEY RESPONSES

(Translated responses of NAUU Linkage Project participants, August 1996)

A. New cultural and institutional knowledge

1. From the ISU visit, what was the most important change in your opinion about how the US universities differ from those in Ukraine?

The Ukrainian visitors were impressed with the richness and amount of support for institutions and the systems approach delivery.

“equipment supply”
“teaching support”
“information support”
“much autonomy”
“professionalism of professors”
“credit system”
“research system”
“extension”
“objectives-based instruction”

2. What activity in Iowa most helped you gain new knowledge about how US universities differ from those of Ukraine?

The visits partner to partner were most helpful. Some visits to professors homes were greatly appreciated.

“study of all aspects of courses”
“life style”
“seminars”

3. What was the most important new opinion you gained about how US culture or policy differs from what you expected, or from that of the Ukraine?

In sum, America’s democracy and economic capitalism works!

“order in everything”
“openness, punctuality, responsibility”
“system of gaining knowledge”
“earnestness”
“democracy in everything”
“possibility to implement the creative potential of a person”

4. What activity in Iowa most helped you gain new understanding of US culture or policy?

Once again, the in home time was considered most important.
When you talk to friends about your visit, what items do you mention most frequently to help them better understand positive aspects of US culture or institutions. This question triggered a mixture of Ames/ISU values and Washington DC experience.

"Washington D.C."
"equality under the law"
"responsibility for decision making"
"good intentions of college professors"
"culture of communication"
"eagerness to work"
"proud for the country"

4. What cultural experience was the most fun?

The fourth of July could not equal family visits.

"family visits"
"celebration of the independence day"
"VEISHEA"

5. To help ISU with future planning, which one cultural activity would you change to make the experience more interesting to Ukrainians?

Here the respondents were equally divided between more time for "pure arts" or more time for ISU's Ag. College.

"theater and arts"
"learn the structure of agriculture"
"the teacher-student relationship"

6. (For those traveling to Washington D.C.) What was the most important experience or activity in Washington that helped you better understand US culture and institutions?

The Capitol visit was premier.

"visit to Ukrainian embassy"
"Congress the Capitol"
"USIS"

B. Overall university impact

1. In your opinion, what is the most important impact of the Linkage Project during the last two years?
a. At NAUU

The memorandum of agreement which led to making new plans and curricular change.

"curriculum change"
"designing new educational plans"
"signing of memorandum"
"new system of testing"

b. In your faculty or department.

Administrative change and new course content coupled with use of college credit (Carnegie units) and reformed student assessments.

"curricula, programs"
"reorganization of the department and college"
"credit system and testing system"
"new courses"

c. In your professional development or accomplishments

Learning how ISU profs deliver instruction, use research and participate in professional groups.

"acquaintance with contemporary methods of education"
"becoming members of US professional societies and academies"
"putting research into practice"

2. In your opinion, what is the most important change during the last two years where the Linkage project did not play an important role:

a. At NAUU

The administrative structure at NAUU was made parallel to ISU’s, professor’s effectiveness went up, students were better served.

"change in the university administration"
"increase in effectiveness of work"
"practical preparation of the students"

b. In your department

The most frequent response was the use of computers in instruction and testing

"creating a forest institute"
"education and testing with computer use"

c. In your professional development and accomplishments

Most replies centered on publishing. Forestry also launched an academy of forest sciences.
“academy of forest sciences”
“publishing text books”
“launching a new journal”

3. What is the most important administrative change that occurred because of the Linkage project:
   a. At NAUU
      The biggest breakthrough was the establishment of the office of Provost for internal administration.
      “office of provost created”
      “improving the structure of the university”
      “changing of the administrative staff”
   b. In your faculty and department
      Moving in the direction of Carnegie units, with new bachelors and masters degrees.
      “bachelors”
      “masters”
      “alumni association”
      “credit system”
      “new specializations”

4. What is the most important change in student service or support that has occurred because of the Linkage project:
   a. At NAUU
      Student services were provided for the first time.
      “bachelor- a four year degree program”
      “learning English”
      “organized student services office”
      “more attention to out of classroom studying”
      “studying at ISU”
   b. In your faculty or department
      A major change in what professors expected of students occurred. Homework was assigned and graded.
      “more attention off lecture hall studying”
      “improving student-teacher relationship”
C. Changes in curricula and instruction

1. From your knowledge, how many courses have been added in your college over the past 2 years (course titles):

   Each specialization added courses to more closely match what ISU departments offered.

   “20 new courses”
   “ethics, economics, logic”
   “2-6 courses in each specialization”

2. From your knowledge, how many courses have undergone major modifications in your college over the past 2 years (new topics introduced, major revisions of existing topics, etc.)

   Not surprisingly, economics changed markedly.

   “almost every course has been changed with adaptation to market relations in agriculture”
   “world trade”
   “microeconomics”
   “macroeconomics”
   “use of PC”

3. Describe any changes in your course instructional methods resulting from Linkage project experiences (use of prints or transparencies; increased use of computers by students; changes in handouts provided, etc.):

   The use of PC’s for both word processing and maintaining student information was the major change

   “PCs”
   “computer programs to solve problems”
   “systems to evaluate students knowledge”

4. Describe any changes in your course content resulting from Linkage project experiences (new examples, new topics, etc.):

   The concept of the market driven economy was woven through all changes.

   “grades and functions”
   “privatization”
   “using mathematical models”

5-6. Describe any changes in your views about continuing education resulting from the Linkage project.

   Continuing education is a must. Computers and extension-like activities will help.
"desire to introduce a more defined system of continuing education with extension-
more off campus offering"
"real acceptance of market economy"
"cooperation of teaching and practice"
"wide use of computers"
"system of testing the students' knowledge"

7. Do you have other plans for the future to change courses or instruction not mentioned
above (indicate)?

Technology will serve teaching, assessment and record keeping.

"broad use of computers in teaching"
"use of video equipment"
"computerize student knowledge"

D. Multiplier effects

1. What non-NAUU professional responsibilities have you had during the past 2 years

The service included provide consulting, serving on committees, and giving speeches.

"private consulting"
"governmental commission"
"scientific academy"
"speeches at the seminars and conferences"

2. Have you prepared any special seminars or reports to share your USIS/ISU
experiences with faculty members or students?

Participants, in the main, had done a lot of "back home" dissemination.

"seminars for colleagues back at home"
"speeches at scientific councils"
"meetings of teachers"
"meetings of students"
"the system of continuing student's knowledge"

3. Have you prepared special short courses or other programs in support for retraining or
adult education in the past 2 years?

Only a few respondents had prepared short courses, but most intended to do so soon.

"short courses for deans and teachers from other colleges"
"correspondent courses"
"no, but intend in the future"

E. Additional points for clarification

1. Other observations you would make to help better understand the impact and
importance of the Linkage project experience to you, NAUU or Ukraine?
The great pay off from the Linkage project was the enduring personal and professional friendships established.

"we became real friends and want to cooperate in the future in rearing the new generation"
"friendship, respect and cooperation"

2. Were funding found to continue ISU-NAUU collaboration, what type of activity would be most helpful?

Participants hoped that others, especially students, could continue the exchange opportunities

"exchange programs for one semester at the master and PhD levels"

a. To NAUU faculty?

Respondents wanted to continue their visits to ISU to continue the professional collaboration.

"mutual work with American colleagues on publishing and solution of scientific problems"
"short term visits"
"business trips to broaden knowledge of market economy"

b. To NAUU administration?

Administrators wanted more time to study and understand how ISU outreach and extension services were provided.

"continuing cooperation in solving problems of educational delivery"
"improvement the extension system"

3. When did you visit Iowa State University:

1. April/May 1996
2. April/May 1995
4. April/May 1996
5. April/May 1996
7. April/May 1996
8. April/May 1995
9. April/May 1995
12. April/May 1995, April/May 1996
13. April/May 1995
15. April/May 1996
16. April/May 1995, April/May 1996
17. April/May 1996
18. April/May 1995
RESPONSES FROM THE TRIP REPORT

(Responses are coded with the letters A-K representing individual participants.)

A. The following objectives of the Linkage Project were fulfilled during the visit.

1. Improved one or two courses in my field. Examples:

   (A) 1. Study of planning system in teaching process (curriculum content).
   2. Study of the methodological preparation process in disciplines that are studied.
   3. Evaluation system for student records.
   4. Conducting of the teaching process, lecturing, laboratory work.
   5. Computerization.

   (B) 1. Curriculum for specialist training at the Department of Agrarian Management.
   2. Course: Management in the Agribusiness System.

   (C) There is a revised teaching program related to a forest measurement course. The textbook on this discipline, which is used in U.S. universities, has been acquired. It will be used in preparation of a reference book on forest measurements.

   (D) While visiting with a group of professors from the College of Business who teach an enterprise course, information was gained about this course, its audience and research methods as well.

   (E) 1. Biochemistry
   2. Animal hygienics

   (F) 1. Optimization of the agricultural plant protection used in soil conservation programs.
   2. Integrated winter wheat protection from pests when no-till technology in farming is used.

   (G) Organizational activities and theoretical developments in new systems of Agrochemistry and fertilization.

   (H) Investments: Analysis and management.

   (I) 1. Teaching methods in teaching English at U.S. high schools (secondary schools), and ways for activation of student speaking and listening skills.
   2. Foreign language teaching methodology (using teaching Russian as an example) outside of the native language environment.
(J) To improve teaching methods in the teaching course Agricultural machinery emphasizing the impact of machines on biological objects, and wider use of slides, schemes in the teaching process.

(K) Improving the course Feeding of agricultural animals and feed production. Changing the extension system.

2. Acquired materials for instructor and/or student use at NAUU. Examples:

(A) 1. Textbooks 
2. Slides and films 
3. Curricula (studied disciplines and their short descriptions) 
4. Content of M.S. and PhD dissertations

(B) Textbooks for courses: Management Theory, Strategic Management, Financial Management, Marketing of Agricultural Products, materials used in the teaching process, and films

(C) 1. Laser pointers for all units in the Forestry Department 
2. Desktop microcalculators (10) 
3. Textbooks in Forestry Economics, Management and Business in Forestry

(D) 1. Textbooks in Economics, and also in Enterprise 
2. Office supplies including transparencies

(E) 1. Textbooks: Biochemistry, Animal health, Biochemistry lectures 
2. Textbooks: Domestic Animals Anatomy, Virology, Lactation, and Parasitology

(F) 1. Slides to show some ways of agricultural activities are prepared for Plant Protection course 
2. Scientific and teaching materials on control and evaluation of the role of chemicals for corn, soybean, and perennial grass protection

(G) Articles and textbooks in Agro-chemistry for new forms of land use

(H) 1. Textbooks for a course named above 
2. Office supplies for teaching use

(I) Teaching materials for instruction; reference materials for faculty and staff; also a large amount of methodological materials and video cassettes for working in student groups; a camera and two kinds of film.

(J) Textbooks and teaching materials for the course Animal feeding
3. **Observed and considered a variety of teaching methodologies to incorporate at NAUU.** Examples:

   (A) 1. Methodology for course lecturing  
        2. Giving assignments to students using computers  
        3. Evaluation methods for student records  

   (B) Course lectures that include intermediate testing using the computer system Internet  

   (C) It will be fulfilled for teaching methodology re-orientation on wider use of computers in Forest Measurement and mathematical Methods courses in particular.  

   (D) Meeting in the Brenton Center; discussions about teaching methods at ISU.  

   (E) Teaching and use of different methods of lecturing in feeding and in Biochemistry.  

   (F) 1. The evaluation methods for plant protection system from harmful organisms  
        2. Evaluation methods for seed quality were reviewed, and extension service for outreach of those methods for farmers' needs.  

   (G) New teaching projects in the Agronomy Department.  

   (H) 1. Introduction of a quiz system in the teaching process.  
        2. To try to remember students after the first class of a session; that makes it easier for mutual interactions (for example, to take pictures).  

   (I) I attended three English classes of English as a Second Language that were taught to foreign students; one English class for native English speakers in a group of American students, and one class which was taught to American students studying Russian.  

   (J) Teaching methodology is based on an active participation of students during classes because of the availability of sufficient amount of handouts and computers. There is a shortage of all of this at NAUU.  

   (K) Department faculty and staff pay a lot of attention to the contemporary approach to teaching methodologies using modern technologies in the teaching process which gives to students a good opportunity to understand material better and more efficiently.  

4. **Observed administrative structure of department, college and/or university which may be applicable to NAUU.** Explain:

   (A) It should be analyzed once again and compared to one that exists at NAUU. A the first glance, there are a lot of useful ideas here for us to apply.
(B) The opportunities for students to have a choice of courses in the Department of Agricultural Economics which would be related to the biggest extent to their future profession and placement.

(C) 1. The student housing, and logistics related to dormitories; also the democratic way to manage student everyday life and recreation facilities are very positively evaluated to be applied at NAUU.
2. Evaluation system for quality of faculty activity.

(D) Using computers in the teaching process and in testing of student knowledge; also to access information resources in the Department of Economics.

(E) 1. The structure of the Department of Animal Science.
2. The structure of the College of Veterinary Medicine.

(F) Organizational structures and teaching methods used in the Department of Agronomy could be applied at NAUU if more computers would be available for use at the NAUU subdivisions.

(G) Organization of activities in the Agronomy Department.

(H) The students have the opportunity to choose not only classes to take but also professors who teach those, or other classes. Hence, a professor has to develop teaching methods constantly. Administration could decide how well one or another faculty member contributes in the teaching process based on class attendance by students, or how many students registered for classes. It wouldn't be bad to clearly distinguish teaching, research and extension.

(I) -

(J) The administrative structure of the University, Colleges and Departments is near to optimum; there are no extra vertical and horizontal linkages, and taking into account the specific features of NAUU, some of its elements could be applied in the departments and units, and at NAUU in general.

(K) The outreach system is developed and used for producers of agricultural products and other community groups. This system could be applied to pass knowledge down to Ukrainian producers of agricultural products and to other groups of the population.

B. Fulfilled the following objective of the visit to ISU, including:

1. Reviewed majors, curricula, and courses in corresponding department. Examples:

   (A) Got acquainted with the Department of Economics and the College of Business—with specialties, courses and curricula.
(B) Department of Economics in the College of Agriculture; teaching programs for BS degree, MS degree, and PhD.

(C) Curricula for BS and MS programs were reviewed at the Forestry Department. Structure and scientific level of MS and PhD dissertations were studied.

(D) Information about the Department of Economics activities was obtained; detailed information about curricula in the Department of Economics and College of Business, and also a short description of courses in the Department of Economics.

(E) 1. Biochemistry and Biophysics Departments
   2. Veterinarian Clinic for small animals at the College of Veterinary Medicine
   3. Feeding and Feeding Physiology units

(F) Zoology and Genetics, Entomology, and Phitopathology Departments were reviewed, and the main subdivision of the Agronomy Department as well.

(G) Curricula for specialist training in Agriculture.

(H) During visits to the Department of Economics and the College of Business we were given an opportunity to review curricula in economic disciplines. Moreover, at the College of Business I was given, on my personal request, short descriptions of the following courses: Finance 354, 454, 452, 554. We had no chance to attend classes because it was the last week of classes.

(I) I got acquainted with curricula and programs in the Department of English and in the Department of Foreign Languages.

(J) All departments in the College of Agriculture and the College of Veterinary Medicine were visited. It should be pointed out to the high level of logistics at the departments, good supply of methodological materials, and democratic condition for students to choose academic courses; high efficiency of gaining knowledge and testing of student records. I got acquainted with the details of curricula and academic programs in the Department of Ag and Biosystems Engineering.

(K) Most of the time I visited the Department of Animal Science. I got acquainted with the curricula for the BS degree, MS degree and PhD program, and also studies methods of teaching the course “Animal Science”.

2. Increased understanding of education system. Explain

(A) Wider computerization of the teaching process is needed and the research process as well. It is necessary to change the ratio between classes that are taught in classrooms and independent studies and laboratories, especially increasing the latter two.
(B) Acquaintance with the Internet system, which gives an opportunity for students to learn a course without attending classes, and for a professor to deeply control student records.

(C) I have a better understanding of the US education system (school, College, University) which is based on the democratic teaching process and wide use of modern computerized technologies.

(D) Wonderful tour to the Middle School to get acquainted with school education system; and also to gain information about the high education structure which was learned from one of the seminars.

(E) 1. Deep consideration of the students' role and their independent work in the educational system.
   2. Extension system and outreach of information.

(F) Well-grounded orientation on intensive self-education, leadership in education and the spiritual culture of the nation.

(G) Complex acquaintance with new forms of education.

(H) Unfortunately, I had a chance to attend only elementary school; but evidently, children learn since their childhood to work independently. The teaching process is oriented on comprehensive child development. Teaching methods are non-standard and informal. Individual approach is used with every student in school. It is very important to be able to work independently in Middle and in High schools, and especially, at the University.

(I) I got acquainted with the US educational system visiting the High School, ISU, but, unfortunately, I didn’t have a chance to visit and get acquainted with the Elementary and Middle schools.

(J) I got acquainted with the US educational system in detail. It is oriented on formation of a personality, beginning from school age. It should be noted the importance of universities as educational centers of science and culture. All this enables one to train specialists depending on social demand, and to do high quality research.

(K) There is a very serious approach in schools to establish the personality of the students. Then this approach to develop student personality is strengthened in high schools and in professional schools. Special emphasis is made on professional responsibility and decision making.

3. **Increased knowledge of agriculture and agribusiness.** Examples:
(A) A visit to a dealer unit and producers showed to us the final result. They have a high level of efficiency. The organizational system in all fields of activities is very useful for us to study in detail and to implement it in Ukraine.

(B) Visit to farms in Iowa; visit to a bank, Community College, assembly plant at John Deere.

(C) I got acquainted with the agricultural system in Iowa which is based on farming. I got ideas about how farms are organized, having different types of orientation: swine farm, dairy farm, and crop growing farms.

(D) Information about perspective development of US agriculture; visits to farms and also a dealer Center.

(E) Dairy farm, fish hatchery, swine farm

(F) Complex evaluation for farming systems and effective introduction of new knowledge in farming at all levels of education.

(G) Establishment of contacts on issues of systematic analysis of soil and agro-chemical supply.

(H) A organized three-day Iowa State trip. We had an opportunity to get acquainted with agriculture and agribusiness. The most cognitive opportunity for me was the visit to the State Bank of Lawler. The credit system for farmers is wonderful, but, unfortunately, at the present time it is impossible to implement it in Ukraine for a number of reasons.

(I) I got acquainted with the US farming system and bank operations.

(J) I am impressed by the organizational structure of agricultural production which is designed without unnecessary administrative links and distribution organizations; by the system of agricultural service—dealer service for farmers.

(K) I didn’t learn anything new in agriculture for me from a technology point of view; however, I considerably increased my awareness of responsibility in fulfillment of those or other technological skills.

C. Fulfilled personal objectives of the visit

(A) Acquaintance with:
   1. Well organized teaching process at the Middle school
   2. Methodology used in the teaching process
   3. Advanced ways of farming in agricultural production: visiting farms, dealer organization, and a tractor assembly plant
(B) 1. Acquaintance with US system of high education. This helps to estimate the defects of the Ukrainian education system and find ways for its improvement.
   2. Personal development as an instructor; better understanding of academic courses, management, marketing that should be taught in market economy.

(C) 1. Textbooks in Forestry Economics, management and business were acquired.
   2. Got acquainted with the culture and lifestyle of the people of Iowa.
   3. Functional structure of Forestry was studied; got acquainted with wood processing and furniture manufacturing at private enterprises, and timber production in private forest areas.

(D) 1. Learned teaching methodology used by ISU professors.
   2. Learned ISU structure of student organizations.
   3. Got information and also books about course structure in enterprise, and ways of doing research in enterprise area.

(E) 1. How the teaching level for courses is determined. I got acquainted with curricula and programs.
   2. Established partner relationships with the professors at counterpart departments.
   3. Got acquainted with the life of farmers, Iowa producers of agricultural products.

(F) 1. Got acquainted with curricula at counterpart departments.
   2. Deeply learned plant protection under conditions of soil protection ways of soil tillage.
   3. Studies some research reports on ecological basing and optimizing corn protection, soybeans and perennial grasses and other agricultural crops from harmful organisms.
   4. Got acquainted with new agricultural machinery for soil tillage, planting equipment and harvesting machinery for agricultural crops.

(G) 1. Acquaintance with curricula.
   2. Visit to departments related to my professional interest.
   3. Studied some research papers related to research themes of my interest.

(H) 1. Work at the library.
   2. Meeting with friends made during my first visit to ISU.

(I) 1. As a result of this trip, I made acquaintance with wonderful people and high qualified specialists.
   2. Learned a lot of interesting things about US education, student life, studying and students' attitudes about work.
(J) 1. Figured out US education system, US agriculture system, university administrative structure, teaching process, research organization and extension services.
2. Studied curricula and programs at the Department of Ag Engineering and Biosystems; got acquainted with teaching methodology and using computers in the teaching process and research.
3. Visited Compressor Control Corporation, Hydro Unit Plant, Tractor Assembly Plant of John Deere, Export-Import Firm, and Combine Assembly Plant of John Deere. Personal contacts were established with representatives of firms in terms of joint cooperation in establishment at NAUU teaching centers for studying and advertising equipment manufactured by John Deere and Import-Export Firm with the assistance of ISU.

(K) 1. Objectives were achieved: studied programs for training specialists carrying BS, MS and PhD degrees.
2. Made plans to study outreach system for passing accumulated knowledge to producers of agricultural products and commodities. I got acquainted with details of extension at different levels (state, county).
3. Got acquainted with organizational system of forming and doing research at ISU.

D. Other accomplishments and expected outcomes

(A) All experiences gained during this visit are useful and will be introduced according to NAUU conditions for use in practice.

(B) Relationships were established with the Department of Economics at the College of Agriculture for development of new teaching programs, for training specialists in Economics for working in market economy conditions. Determined the ways for development of joint research.

(C) Established tight relations with some professors in the Forestry Department which gives a hope on continuing creative cooperation.

(D) Got acquainted with the International Office operations, its experience in working with foreign delegations and a Project realization.

(E) Got acquainted with student life.

(F) Cooperation should be continued, particularly in winter wheat, barley, corn and other crop protection in soil conservation farming, and also in working with new forms of land use.

(G) Scientific-practical institutions in the education system.

(H) -
(I) Acquaintance with America, its people and its culture took place. There is something to think of, to work on, and to try to apply.

(J) The visit to ISU enabled me to learn America better, and to gain a lot of information which has to be comprehended, and after than, anything is useful to apply at NAUU.

(K) Extension service will be established at NAUU that will be based on ISU extension service experience.

E. Comments regarding the ISU/NAUU Linkage Project

(A) It is very useful, necessary, and it calls for continuation in different fields and directions.

(B) The Project was initiated from a critical necessity to stir up and make efficient specialist training for the agrarian sector of economics in a market economy.
Steps for realization of the Project are following:
1. Adaptation of curricula
2. Coordination of teaching programs
3. Student exchange
4. Master degree specialists training
It gave an opportunity to get close to ISU level in specialist training, and enabled us to spread out the ISU experience in the Ukraine. Project objectives were fulfilled successfully.

(C) The Linkage Project between two universities—partners is very useful. It provided a new approach to revising of curricula and teaching programs; showed necessity of further NAUU education system development which would be based on computerization of the teaching process, and on re-orientation of University education on fundamental training of students. The Project should be continued on distance learning issues and extension system to apply them in Ukraine.

(D) I would like to express my gratitude to my American colleagues for excellent organization of our visit to ISU and their warm welcome and understanding.

(E) The Project is extremely important for bringing together the US and Ukraine education systems, mutual understanding between scientists, students, and professors. The Project was completed successfully, the objectives were achieved, but the project should be continued, working on particular teaching programs and their contents.

(F) I have great gratitude to all organizers and managers of the Project. It is necessary to develop different forms of further cooperation at the University level, and at departmental and laboratory levels as well.

(G) To continue cooperation in the field of agricultural specialist training.
(H) -

(I) -

(J) The Project was finished by signing a Memorandum about curricula administration and a mutual summary agreement between ISU and NAUU on specialist training. The Project should be continued and oriented in the direction of development of continuing education, extension system development at NAUU which could be based on ISU experience.

(K) There are no doubts that the ISU/NAUU Linkage Project was a big step toward reform in agricultural education in Ukraine. Practically, the Project was a base for big changes in administrative structure, in curricula and teaching programs, and also in teaching methods at NAUU. The further cooperation between ISU and NAUU would be simply necessary to continue reforms in agricultural higher education in Ukraine.
REFERENCES


ACKNOWLEDGEMENTS

I am grateful to many people who have enabled me to complete my advanced studies in the United States at Iowa State University in Ames. First, I am indebted to my major professors, Doctors Larry L. Bradshaw and Richard P. Manatt, for their guidance throughout my program of study. I am also grateful to them for providing many excellent opportunities to explore Educational Administration from different angles. Thanks also to my committee members: Dr. Robert Strahan who advised me in the area of statistical analysis and helped me to improve the quality of exposition of this dissertation; Dr. Harold Crawford who helped me in numerous ways to gain valuable experience in the College of Agriculture as an administrator, particularly in the ISU/Ukraine program; and Dr. Tao Chang who agreed to join my committee and support my research.

I am thankful to the Department of Industrial Education and Technology for accepting me into the program so that I could pursue the doctoral degree program at Iowa State University. The collaborative efforts of the Department of Professional Studies has also provided me with additional support to gain expertise in Educational Administration. I have learned so much in the class I have taken. I am also indebted to the Dean of the College of Education for support of my studies and a wonderful position to assist in its International Education Programs.

Although he has passed on from this life, I am truly honored to have been a student of Dr. Bill Wolansky. His support and guidance of international students is legendary. I will never forget his kindness to invite me and my family into his home and heart.
Finally, I am truly blessed to have a wonderful supportive family. To my wife, Mary, words are mere tokens of the joys we have shared through our adventures over many years. To my sweet daughter, Tamara, may you have as many or more blessings in your future as your parents have enjoyed. You have graced our lives with your inquisitiveness and zest to live and learn. The future is yours to embrace.
IMAGE EVALUATION
TEST TARGET (QA-3)

150mm

6"

© 1993, Applied Image, Inc. All Rights Reserved