
**Georgian Educators' Perceptions and Outlooks on Education, Agriculture, and
Agricultural Education**

Brian Parr

Washington County School System
241 Graceland Lane
Afton, TN 37616
E-mail: parrb@wcde.org

M. Craig Edwards

Oklahoma State University
Department of Agricultural Education, Communications & Leadership
448 Agricultural Hall
Stillwater, OK 74078-6032
E-mail: craig.edwards@okstate.edu

Dennis W. Duncan

The University of Georgia
Department of Agricultural Leadership, Education, and Communication
106 Four Towers
Athens, GA 30602
E-mail: dwd@uga.edu

Abstract

Recent interest in establishing a formal agricultural education system in Georgia has resulted in assistance from the United States. Several American universities have worked in cooperation with the Georgian Institute of Public Affairs and the United States Department of Agriculture toward achieving that goal. The multi-fold purpose of this study was to describe selected characteristics of selected educators in the country of Georgia, their perceptions concerning the "importance of" and their "ability to" perform instructional practices and activities, and to assess their views about trends and the future of education, agricultural education, and agriculture in Georgia. Both qualitative and quantitative methods were used to collect data. The participants attended a four-day professional development seminar in October 2006. Participating educators perceived that the "Rose Revolution" had a positive impact on the quality of education, the quality of life for teachers, and the economic status of farmers in Georgia. Seminar topics that participants indicated held the greatest importance included "brain-based learning," "experiential learning," "student evaluation," and "effective teaching." Participants also believed they held the highest ability to implement principles related to "effective teaching," "instructional objectives," "day-to-day [learning] strategies," and "measuring student and program success." Analysis of data revealed that the educators were eager about opportunities to further expand agricultural education course offerings and programs in their schools.

Keywords: Agricultural Education, Caucasus Region, Georgia, Professional Development of Teachers

Introduction and Background

Georgia is a Eurasian country that was formerly a part of the Soviet Union. It declared independence in 1991 (Microsoft®, Encarta® Online Encyclopedia, 2006). It encompasses a significant portion of the Great and Lesser Caucasus Mountains that form a geologic divide between southeastern Europe and Asia Minor; so, Georgia is a part of the South Caucasus region. About 12% of its land is considered arable. Approximately 25% of its total population of just over 4.5 million is concentrated in the capital city of Tbilisi (Central Intelligence Agency, 2006), and its rural population is estimated to be 48% (Lerman, 2006) or about 2.2 million citizens.

Although independence from the Soviet Union came in 1991 and a democratic government was instituted, the newly elected president served only one year before being removed from office by an opposing militia and replaced by a former Soviet Minister, Eduard Shevardnadze (British Broadcasting Corporation [BBC], 2006; Lynch, 2004). Shevardnadze's 11-year presidency ended in a peaceful demonstration in 2003 known as the "Rose Revolution" following a national election that was thought to be corrupt (Microsoft®, Encarta® Online Encyclopedia, 2006). The result of this demonstration was the election of Mikhail Saakashvili as Georgia's president. It is believed that Saakashvili drew large public support due to his stance against governmental corruption and for proposing a "pure" democratic system for the nation. Saakashvili led the protesters in 2003 with a rose in his mouth, thus the name "Rose Revolution" was popularized (BBC, 2006).

The United States Department of Agriculture (USDA) reported that, "Georgia's economic progress has slowly improved since 2000. However, its economic activity has not reached its full potential . . ." (USDA, 2006, Economic Progress Spurs Investment section, ¶ 5).

According to the BBC, "Once a relatively affluent part of the USSR, with independence Georgia lost the cheap energy to which it had access in the Soviet period. The rupturing of trading ties caused the economy to nose-dive" (Post Soviet Years section, 2006, ¶ 3).

Since the end of the Soviet period, Georgia has remained heavily dependent on Russia for fuel and trade. Recent sanctions have limited this trade greatly and placed an increased financial burden on the country (BBC, 2006). Through the Caucasus Agricultural Development Initiative (CADI), efforts have been made by the USDA's Foreign Agricultural Service (FAS) to improve Georgia's trade capacity and economic development in the agricultural sector (USDA, 2006).

Agriculture is a major contributor to the Gross Domestic Product (GDP) of the nation. In 2004, Georgia's GDP was \$5.2 billion (Microsoft®, Encarta® Online Encyclopedia, 2006) with agriculture contributing about one-fifth of that total (Lerman, 2006; Microsoft®, Encarta® Online Encyclopedia, 2006). So, agriculture is a staple of the Georgian economy. With its diverse climates and terrain, Georgia has suitable conditions for growing a vast number of crops, and it also enjoys a long growing season. Nearly one-half (47%) of Georgia's workforce is employed in the agricultural sector (Lerman, 2006).

Recent interest in establishing a formal agricultural education system in Georgia has resulted in assistance from the United States. Several American universities have worked in cooperation with the Georgian Institute of Public Affairs (GIPA) and the USDA toward achieving the goals of the Georgian Rural Development Program (GRDP), which is administered through GIPA (2006). One of the goals of this program is to establish agricultural education at the secondary school level.

The Georgian education system is currently under reform and has been

structured so that 75% of the school curriculum is “standard” or consistent throughout the country. The remaining 25% is left to the discretion of individual schools. According to the GIPA’s education specialist for the GRDP, Nestan Tsitsishvili,

As for the secondary schools: although they are tasked to implement National Education Plan in schools, but they still have 25% of free time that is to be developed by the school itself based on the school[’s] priorities. We think it is important that this 25% is used for agriculture lessons for regional and especially for village schools. Thus[,] the knowledge and experience of students in this area will really increase and will be used by pupils in two cases: 1) if a student continues education in a relevant college or university and 2) if he/she works on a personal or someone else’s farm. (GIPA, 2006, pp. 196-197)

A network of institutions specializing in the education of students in agriculture has been developed. This network includes eight K-12 schools that have implemented agricultural education as a part of their curriculum. These schools are referred to as “FFG schools” based on their interest in incorporating the newly-formed Future Farmers of Georgia into the agricultural education curriculum. The institutions serve as “feeder schools” for eight agricultural technical colleges that are similar to two-year, post-secondary institutions in the United States. And, at its center is the Agricultural State University of Georgia (ASUG), which is a four-year post-secondary institution (Figure 1).

University of Georgia (USA) faculty members are assisting FFG schools in the development and implementation of curriculum that would be appropriate for secondary agriculture students. The provision of professional development for

Georgian secondary teachers who teach agriculture is a focal point of that effort.

Conceptual Framework

This project represents the researchers’ initial efforts toward providing in-service education for teachers of agriculture in the country of Georgia. To that end, data were collected to determine the perceived needs of Georgian teachers of agriculture, especially perceptions about their self-efficacy (Bandura, 1995; DeMoulin, 1993) for teaching the proposed agricultural education curriculum and their use of innovative instructional methods. The educators’ views about “importance of” and “ability to teach” using methods they learned as a result of the in-service were conceptualized as “proxies” or indicators of their self-efficacy and related “planned behaviors” (Ajzen, 1991).

The gathering of participants’ perceptions about their professional development needs to guide the future delivery of in-service education topics is supported by earlier researchers (Connors & Brousseau, 1997; Connors, Swan, & Brousseau, 2004; Edwards, Meaders, & Brousseau, 2002; Edwards & Thuemmel, 2000; Thuemmel, Meaders, Mannebach, & Brousseau, 1998) who worked with secondary agricultural educators in another Former Soviet Republic. The approach used in this study was designed to provide guidance for appropriate planning and implementation of future educational programs for Georgian educators who teach agriculture in secondary schools.

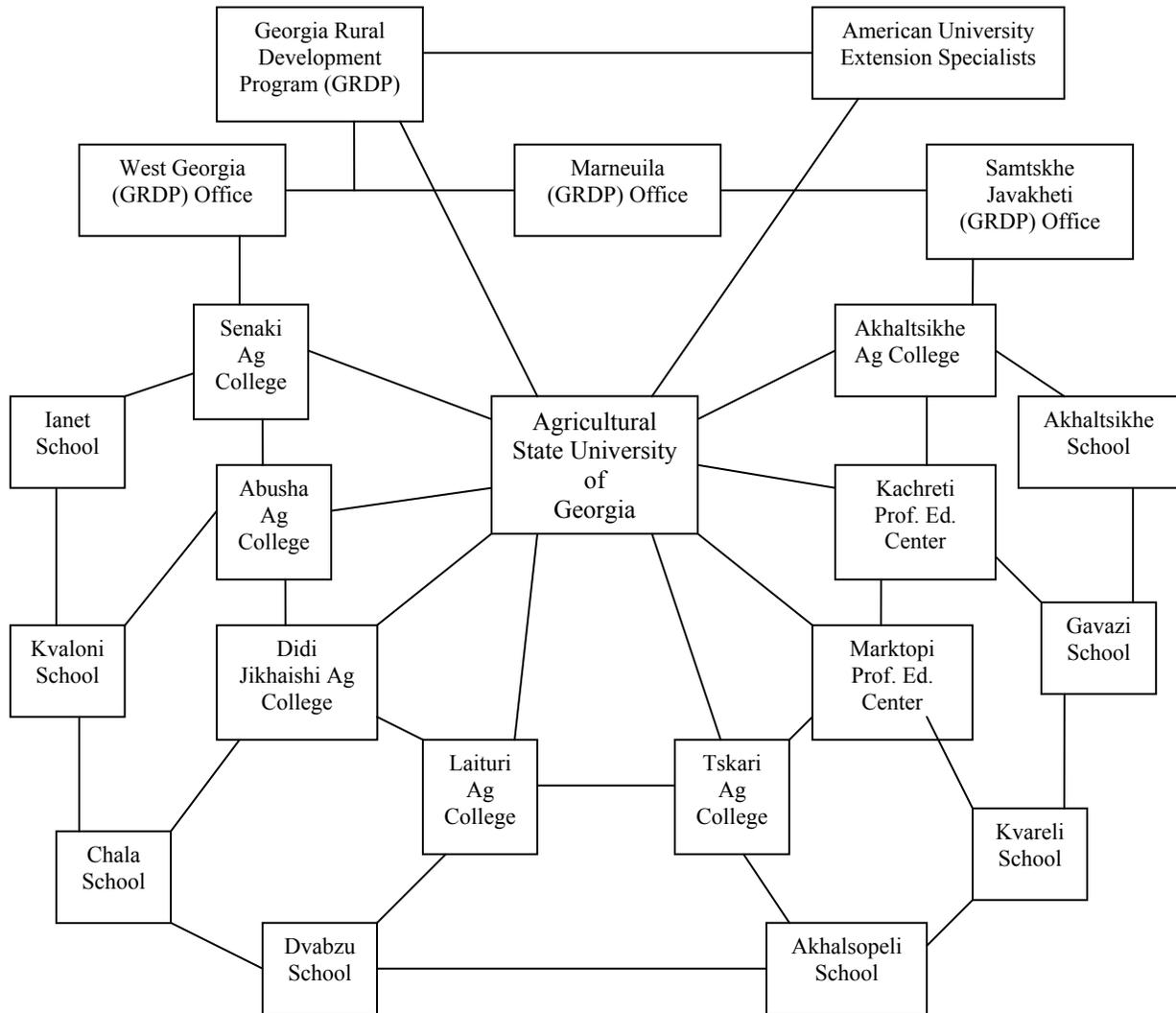


Figure 1. A network of institutions specializing in the education of students for the agricultural sector in Georgia (K. Natriashvili, personal communication, September 9, 2006).

Purpose of the Study

The multi-fold purpose of this study was to describe selected characteristics of secondary level teachers of agriculture in the country of Georgia, to describe their perceptions concerning the “importance of” and their “ability to” perform the instructional practices and activities that were presented during an October 2006 professional development seminar, and to assess their views about trends and the future of education, agricultural education,

and agriculture in Georgia. In addition, findings will be used to better inform providers of professional development regarding the relevance, appropriateness, and anticipated value of future professional development seminar topics and training.

Methods and Data Sources

Both qualitative and quantitative methods were used to collect data from 13 teachers of agriculture (i.e., a purposeful sample) for this descriptive study. The

participants attended a four-day professional development seminar during the fall of 2006. Seminar topics were presented by two faculty members from a four-year land-grant institution in the USA. The seminars were delivered in English and translated into Georgian. The researchers developed a questionnaire that elicited three categories of information: (a) personal/professional data; (b) assessments about the “importance of” and teachers’ self-perceived “ability to” perform the seminar’s topics (i.e., competencies); and (c) perceptions about trends and the future for education, agricultural education, and agriculture in Georgia. This instrument was modified from a questionnaire used previously by American agricultural educators who served as in-service education providers to Lithuanian agricultural educators (Edwards & Thuemmel, 2000).

The descriptors for the “importance” scale were “5” = “Great Importance,” “4” = “Much Importance,” “3” = “Average Importance,” “2” = “Little Importance,” and “1” = “No Importance.” The descriptors for the “ability” scale were “5” = “High Ability,” “4” = “Much Ability,” “3” = “Average Ability,” “2” = “Low Ability,” and “1” = “Negligible Ability.” Cronbach’s coefficient alpha reliability estimates for the rating scales were .88 (importance) and .54 (ability), respectively.

The questionnaire items were reviewed and validated by consensus of the researchers and then translated into Georgian by an English language specialist from the GIPA. Data were analyzed using descriptive statistics, including the calculation of frequencies, percentages, means, standard deviations, and rankings. Following the final session of the seminar, participants were also interviewed by the researchers as a group to clarify various issues and questions that surfaced during the training (Patton, 1990). Participants’ answers were translated into English by the abovementioned language specialist, and a

summary of those translated comments are reported in this manuscript.

Findings/Results

Participants were asked to respond to questions that described selected personal characteristics. The questionnaire revealed that the all female group received their degrees from higher education institutions. Two of the participants held master’s degrees. When questioned concerning the number of years each participant had been in the teaching profession, answers varied from seven to 41. Ten of the 13 participants were classroom teachers, and the other three reported that they were administrators. Although most (92.3%) of the educators taught subjects other than agriculture during their school day, all participants were involved in after-school agricultural education projects. The most popular projects were gardening (i.e., flowers and vegetables) and bee keeping.

When questioned about their teaching loads, nine of the 13 participants (69.23%) reported that they taught 100 or fewer students per day; only one teacher indicated that she taught more than 150 students per day. All participants reported that they taught students who ranged from 13 to 17 years of age, and four indicated they also taught pupils who varied in age from six to 12.

Participants were asked to compare descriptively the quality of education in Georgia following the political events which took place in 1991 with those that occurred in 2003. Less than one-third of participants indicated that education improved following the 1991 events but four-fifths perceived it had improved since the “Rose Revolution” of 2003. Fewer than one in five believed that their life as an educator improved following the events of 1991; however, more than four-fifths indicated that their quality of life as an educator had improved since 2003.

Only one educator indicated that the economic status of farmers in Georgia improved following the events of 1991 but

seven in ten perceived improvement following 2003 (Table 1).

Table 1

Seminar Participants' Perceptions Concerning Trends for Education, Agricultural Education, and Agriculture in Georgia Following Political Events in 1991 and 2003 (N = 13)

Questions	1991	1991	2003	2003
	<i>f</i>	%	<i>f</i>	%
How has the quality of education improved in Georgia (1991 vs. 2003)?				
Much improved	0	0	0	0
Somewhat improved	4	30.8	11	84.6
No change	2	15.4	2	15.4
Somewhat deteriorated	5	38.5	0	0
Much worse	2	15.4	0	0
How has the quality of your life as an agricultural educator changed (1991 vs. 2003)? ^a				
Much improved	0	0	0	0
Somewhat improved	2	15.4	11	84.6
No change	3	23.1	2	15.4
Somewhat deteriorated	2	15.4	0	0
Much worse	4	30.8	0	0
How has the economic status of farmers in Georgia changed (1991 vs. 2003)? ^a				
Much improved	0	0	2	15.4
Somewhat improved	1	7.7	7	53.8
No change	3	23.1	4	30.8
Somewhat deteriorated	4	30.8	0	0
Much worse	4	30.8	0	0

^aNot all participants responded to this question.

Regarding the outlook for agricultural education during the next five years, all but one participant predicted improvement. None of the educators perceived that agricultural education would deteriorate over the next five years. Eight of the 11 educators who had children responded that they would encourage their children to pursue a career in agriculture. And, five of the participants indicated that they would encourage their children to pursue careers in agricultural education

(Table 2). Nine of the participants reported that they “always” encouraged their students to pursue a career in agriculture, and three said they “sometimes” encouraged their students to pursue agricultural careers. Nine participants reported that they “always” encouraged their students to pursue a career in agricultural education; only one educator indicated that she did not encourage her students to pursue careers in agricultural education (Table 2).

Table 2

Seminar Participants' Views Concerning the Future of Agricultural Education and Their Levels of Encouragement Offered to Youth About Entering the Agricultural Sector in Georgia (N = 13)

Questions		%
How will the quality of agricultural education change during the next five years?		
Much improved	6	46.2
Somewhat improved	6	46.2
No change	1	7.7
Somewhat deteriorated	0	0
Much worse	0	0
Will you encourage your son or daughter to pursue a career in agriculture?		
Yes	8	61.5
No	0	0
Maybe	3	23.1
I do not have children	2	15.4
Will you encourage your son or daughter to pursue a career in agricultural education?		
Yes	5	38.5
No	0	0
Maybe	6	46.2
I do not have children	2	15.4
Do you encourage your students to pursue careers in agriculture?		
Yes, always	9	69.2
Yes, sometimes	3	23.1
Yes, but seldomly	1	7.7
No	0	0
Do you encourage your students to pursue careers in agricultural education?		
Yes, always	9	69.2
Yes, sometimes	2	15.4
Yes, but seldomly	1	7.7
No	1	7.7

As shown in Table 3, the overall mean "importance" rating for all seminar topics was 4.77 or slightly more than two-thirds way between "much importance" and "great importance." The highest rated topics based on importance were "Brain-based learning research: What is it and how can it be used to improve student learning?" and "Evaluating student achievement: How can formative assessment strategies, including

the use of rubrics, be employed to modify instruction to improve student performance?" Both topics received a mean importance score of 4.92 ($SD = .27$). Topics that followed closely with mean importance scores of 4.77 were "What is effective teaching?" ($SD = .56$), and "What are effective strategies for measuring student and program success?" ($SD = .42$) (Table 3).

Table 3

Seminar Participants' Ratings and Rankings of Importance and Self-Perceived Ability for In-Service Education Topics Provided During the 2006 Seminar for Georgian Agricultural Educators (N = 13)

In-service Education Topics	Importance				Ability			
	N	M	SD	Rank	N	M	SD	Rank
Brain-based learning research: What is it and how can it be used to improve student learning?	13	4.92	.27	1 ^a	13	3.85	.66	11
What is effective teaching?	13	4.77	.56	4 ^a	13	4.08	.73	9
Experiential learning: Where and how to begin?	13	4.85	.36	3	11	4.55	.50	1
Why teach the concepts, skills, and competencies included in our courses?	12	4.42	.64	10	13	3.92	.47	10
What is an effective way to develop and organize measurable instructional objectives?	13	4.62	.62	7 ^a	13	4.15	.53	4 ^a
How are programs, courses, and lessons organized effectively?	13	4.46	.63	9	13	4.31	.61	3
What are day-to-day strategies that help ensure effective instruction?	13	4.69	.46	6	13	4.15	.53	4 ^a
How are appropriate course syllabi developed?	13	4.62	.49	10 ^a	13	4.15	.53	4 ^a
Evaluating student achievement: How can formative assessment strategies, including the use of rubrics, be employed to modify instruction to improve student performance?	13	4.92	.27	1 ^a	13	4.15	.86	4 ^a
Academic rigor: How to achieve and sustain it?	13	4.38	.62	11	13	4.15	.66	4 ^a
What are effective strategies for measuring student and program success?	13	4.77	.42	4 ^a	13	4.46	.50	2
Overall Mean		4.77				4.16		

^aThis topic received equal rating with at least one other in the seminar; tied ranks are displayed.

The participants' overall mean "ability" rating for all topics was 4.16 or slightly more than "much ability" to perform or implement the seminar topics (or competencies) into their teaching. The highest rated topic per participants' perceptions of their "ability" to implement was "Experiential learning: Where and how to begin?" ($M = 4.55$, $SD = .50$). The topic

rated lowest by participants regarding their "ability" to perform was "Brain-based learning research: What is it and how can it be used to improve student learning?"; however, participants still indicated that their ability to accomplish that topic was well above "average ability" (i.e., $M = 3.85$, $SD = .66$).

Group Exit Interview Results

In a group “exit interview,” participants were asked a series of questions concerning their motivation to participate in the newly developed agricultural education system. Responses to the question about motivation included, “genuine interest in children and their future,” “building interpersonal skills within my students,” “to raise the standard of living for my village,” “to develop leaders,” and “to distinguish my school.” None of the participants reported that they received additional monetary compensation for teaching agriculture classes. One teacher reported that she received a reward in the form of discounted honey that was produced at the school.

Participants also explained that all Supervised Agricultural Experience (SAE) projects were conducted on school property and without financial contribution from the students. Three participants responded that their students benefited financially from the sale of plants grown as an SAE project, and one educator said her students were “paid” in plants for their involvement.

Conclusions

When questioned about the quality of education in Georgia since 1991, participants’ answers varied from “much worse” to “somewhat improved.” The average response to this question fell between “somewhat deteriorated” and “no change.” However, perceived improvements in the quality of education in Georgia were substantially greater when only considering change since 2003 (i.e., following the “Rose Revolution”). An overwhelming majority of participants (12 of 13) reported that the quality of education had “somewhat improved” since 2003. This trend held true throughout the data comparing effects of the political events of 1991 with those that took place in 2003.

Nearly one-half of the participants reported that their professional lives had deteriorated to some extent following the end of the Soviet era in 1991; however, most

expressed that their lives had improved following the Rose Revolution of 2003. Similarly, most of the participants indicated that the economic status of farmers declined after 1991 but believed that the events in 2003 had improved the economic status of farmers. What is more, educators perceived that the “Rose Revolution” had a positive impact on the quality of education in their country, the quality of life of teachers, and the economic status of farmers. And, a majority of participants also expressed that the political upheaval and “sea change” of 1991 had little positive effect on these aspects.

The participants were very optimistic about the future of agricultural education in Georgia. Nearly one-half predicted that agricultural education will be “much improved” during the next five years. And, a majority of participants indicated that they encourage their students to enter the agricultural sector and to pursue careers in agricultural education.

Based on the responses from the exit interview, the educators who had volunteered to teach agriculture classes were not motivated monetarily. Their responses showed that a sense of pride and intrinsic motivation to serve the future generations of Georgia were the largest motivational factors in their choices to become teachers of agriculture. Dudwick’s (2003) work contradicts their perspective; for example, she reported that teachers “tried to make themselves indispensable by organizing after-school clubs without asking for compensation” (p. 221). However, her work was drawn primarily from qualitative interviews conducted with Georgian teachers in the 1990s, which preceded the Rose Revolution.

Topics that the participants indicated held the greatest importance included “brain-based learning,” “experiential learning,” “student evaluation,” and “effective teaching.” Participants also believed they held the highest ability to implement principles related to “effective

teaching,” “instructional objectives,” “day-to-day [learning] strategies,” and “measuring student and program success.” Although “brain-based learning” was rated the most important topic/competency of the seminar, teachers also perceived that they were least able to incorporate brain-based learning into their instructional practice. However, participants’ summated ratings of their “ability” to implement selected seminar topics may be questionable due to the low reliability estimate found for that construct.

Implications and Recommendations for Future Practice and Research

Lerman (2006) analyzed the impact of land reform in Transcaucasia, including Georgia, after dissolution of the Soviet Union and its relationship to growth in the agricultural sector and the “improved well-being of the rural population” (p. 112). He concluded that policy implications for rural Georgians, many who are impoverished, included “investing in rural infrastructure and services,” for example, “farmer-owned service cooperatives” (p. 122), and that these and similar institutions could improve agricultural producers’ understanding and implementation of “quality control[s], compliance with international standards, and other marketing difficulties” (p. 122), thus making the sector more competitive. Consistent with Lerman’s conclusions is the need for a coherent and articulated approach to educating and training Georgians to staff and lead its agricultural sector. And, requisite to that aim is a significant underlying premise: teachers of agriculture in Georgia, including those at the secondary level, must be highly professionalized both in content knowledge and pedagogy.

Georgia is at an exciting stage of rebirth as it modernizes and improves its secondary agricultural education system as well as the higher education institutions that serve the agricultural sector. The current education system still retains some elements of the influence of centralized-control (Ruffio & Barloy, 1995) as imposed by its

former socialist governments. So, new approaches to teaching and learning mark a turning point in the history of Georgian education and for its agricultural and food system. The rural populace may benefit significantly from the diffusion of basic and advanced agricultural knowledge and skills initiated in the FFG schools and then expanded and refined at the post-secondary level. To that end, providers of professional development need to be informed about the value of their efforts, so that future programming is responsive and effective (Waters & Haskell, 1989; Witkin, 1984).

The data collected in this study revealed that Georgian teachers of agriculture at the secondary-level were eager and excited about the opportunity to further expand agricultural education in their schools. However, the data also demonstrated that 12 of the 13 seminar participants were not formally trained in agriculture or agricultural education. To help these teachers develop more fully into effective agricultural educators, more in-service education is recommended.

Moreover, the researchers should review their content and delivery for the topic about “brain-based learning,” which the educators considered most important (Table 3) but they perceived themselves having the least ability to use or implement. A review of all items, vis-à-vis participants’ perceptions of their abilities to use, also may be warranted because of the relatively low reliability estimate yielded for this domain (i.e., .54). Interestingly, Edwards and Thuemmel (2000), who used a similar but not identical instrument, produced an estimate of .79 with Lithuanian agriculture teachers who, too, required translation. So, did “language,” the need for translation, or the role of “context-bound meaning” play a role in the discrepant reliability estimate? Or, was the estimate less than “desirable” due to what Field (2005) attributes to “the diversity of the constructs being measured” (p. 668)? The investigators should consider

these and other possible factors when refining their instrument.

In addition, agricultural education teachers should be provided appropriate curriculum materials that have been translated into Georgian to use in their classes as well as further instruction about how to use these learning resources effectively. To that end, 300 pages of learning resources, ranging from animal science to gardening, were taken from the state of Georgia (USA) agricultural education curriculum library and translated into the Georgian language. It was distributed to teachers who participated in the seminar described. Follow-up consultations were planned to answer educators' questions about these materials and their use. (During the follow-up consult, researchers intend to determine which agricultural textbooks may benefit Georgian agricultural education students most and, subsequently, request that the appropriate textbook[s] be translated into the Georgian language.)

It is the intention of the GRDP to create a seamless system of agricultural education beginning in the secondary schools; then, progressing to various two-year technical colleges and, finally, to the Agricultural State University of Georgia (ASUG) (Figure 1). Formal training in agriculture at post-secondary institutions is growing in popularity. Rusudan Dzidzishvili, Dean of the Agronomy faculty, ASUG, stated,

As for the incoming contingent of students: it is fascinating, but this year an unimaginable fact happened for the first time in the history of the agrarian university. Namely, none of the universities except the agrarian faculty filled their incoming classes right. The agrarian faculties finished admitting students at the very first cycle of enrollment. We were interested to find out what was the reason, because in general the agrarian university and the agrarian

profile have not had enough applications from students for years. The analysis showed that farming is winning back its place in the Georgian mentality and people are starting to understand that their land is the most important thing. (GIPA, 2006, pp. 201-202)

In long term planning for this goal, leaders of the ASUG should consider formally implementing a teacher preparation program for aspiring agricultural education teachers. Although in-service programs, such as the one described here, are beneficial to educators who may teach various courses that contain agricultural topics, more emphasis should be placed on the *systematic* preparation of secondary agricultural education teachers, i.e., creation of a baccalaureate level, pre-service degree program at the ASUG or elsewhere in Georgia.

It is recommended that this newly formed system of agricultural education implement assessment and evaluation measures—formative and summative—to determine programmatic success and to guide future initiatives. A longitudinal study should be established to track students who matriculate from the secondary agricultural education program to determine if it made a significant difference in their career and educational choices, their performance at the post-secondary level, their entry into the agricultural sector, and their early-career job performance.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Bandura, A. (Ed.) (1995). *Self-efficacy in changing societies*. Cambridge: Cambridge University Press.

- British Broadcasting Corporation. (2006). *Country profile: Georgia*. Retrieved January 1, 2007, from http://news.bbc.co.uk/2/hi/europe/country_profiles/1102477.stm#media
- Central Intelligence Agency (CIA). (2006). *The world fact book, Georgia*. Retrieved October 13, 2006, from <https://www.cia.gov/cia/publications/factbook/geos/gg.html#Geo>
- Connors, J. J., & Brousseau, J. A. (1997). Teachers' perceptions and uses of instructional technology in selected vocational agriculture schools in Lithuania. *Proceedings of the Association for International Agricultural and Extension Education*, 13, Session E, 1-5.
- Connors, J. J., Swan, B., & Brousseau, J. A. (2004). Lithuanian agriculture teachers' perceptions on agricultural production, economics, environment, and social responsibility issues. *Journal of International Agricultural and Extension Education*, 11(2), 25-33.
- DeMoulin, D. F. (1993). Efficacy and educational effectiveness. In J. R. Hoyle & D. M. Estes (Eds.), *NCPEA: In a new voice* (pp. 155-167). Lancaster, PA: Technomic Publishing Company, Inc.
- Dudwick, N. (2003). No guests at our table: Social fragmentation in Georgia. In N. Dudwick, E. Gomart, A. Marc, & K. Kuehnast (Eds.), *When things fall apart: Qualitative studies of poverty in the Former Soviet Union* (pp. 213-257). Washington, DC: The International Bank for Reconstruction and Development.
- Edwards, M. C., & Thuemmel, W. L. (2000). Perceptions and assessments of selected topics by Lithuanian teachers who participated in agricultural education in-service seminars in 1999. *Journal of International Agricultural and Extension Education*, 7(2), 27-36.
- Edwards, M. C., Meaders, O. D., & Brousseau, J. (2002). Lithuanian agricultural educators' perceptions of selected inservice education programming: Implications for future inservice delivery. *Journal of International Agricultural and Extension Education*, 9(3), 61-67.
- Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Thousand Oaks, CA: SAGE Publications Inc.
- Georgian Institute of Public Affairs (GIPA). (2006). *Conference "perspectives of agricultural development in Georgia" Bakuriani, March 24-25, 2006*. Retrieved December 21, 2006, from http://www.grdp.ge/data/activities/bakuriani_2006.pdf
- Lerman, Z. (2006). The impact of land reform on rural household incomes in Transcaucasia. *Eurasian Geography and Economics*, 47(1), 112-123.
- Lynch, D. (2004). *Engaging Eurasia's separatist states: Unresolved conflicts and de facto states*. Washington, DC: United States Institute of Peace.

- Microsoft®, Encarta® Online Encyclopedia. (2006). *Georgia (country)*. Retrieved October 13, 2006, from [http://encarta.msn.com/encyclopedia_761556415/Georgia_\(country\).html](http://encarta.msn.com/encyclopedia_761556415/Georgia_(country).html)
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: SAGE Publications, Inc.
- Ruffio, P., & Barloy, J. (1995). Transformations in higher education in agricultural and food sciences in Central and Eastern Europe. *European Journal of Agricultural and Extension Education*, 2(2), 11-20. Retrieved January 11, 2007, from <http://www.bib.wau.nl/ejae/v2n2-2.html>
- Thuemmel, W. L., Meaders, O. D., Mannebach, A. J., & Brousseau, J. A. (1998). Perceptions of teachers and administrators from selected vocational agriculture schools in Lithuania. *Proceedings of the Association for International Agricultural and Extension Education*, 14, Session J, 1-11.
- United States Department of Agriculture, Foreign Agricultural Service. (February, 2006). Initiative uses technical assistance and trade capacity building to jumpstart economic development in the Caucasus. *FAS Worldwide*. Retrieved December 21, 2006, from <http://www.fas.usda.gov/info/fasworldwide/2006/02-2006/CADI.htm>
- Waters, R. G., & Haskell, L. J. (1989). Identifying staff development needs of cooperative extension faculty using a modified Borich needs assessment model. *Journal of Agricultural Education*, 30(2), 26-30.
- Witkin, B. R. (1984). *Assessing needs in educational and social programs*. San Francisco, CA: Jossey-Bass, Inc.