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- 2) Republic of Georgia students' change in critical thinking dispositions as a result of a week-long leadership training experience
- 3) Research
- 4) This descriptive study measured the change in critical thinking dispositions of Republic of Georgia students following a Future Farmers of Georgia (FFG) leadership training experience (camp) using a retro-post version of the UF-EMI instrument (Irani, Rudd, Gallo, Ricketts, Friedel, & Rhoades, 2007). Findings indicate that the leadership training camp was successful at improving the critical thinking dispositions of the young members. Recommendations include additional leadership training experiences.
- 5) If not accepted, please consider for a poster.
- 6) John Ricketts is in his fifth year at the University of Georgia. In addition to coordinating the agricultural teacher education program he has also taught graduate courses (i.e. Foundations of Leadership) for UGA's Master of Agricultural Leadership program and undergraduate courses such as ALDR 3900 Leadership and Service and FRES 1020 Freshman Seminar in Leadership Development.

Rachael McCall is the Leadership Program Specialist for the Georgia FFA Association. A former state and national FFA officer, Rachael was part of the student team conducting the FFG leadership training camp. She has a degree in Agricultural Economics from the University of Georgia and plans to start law school in the fall of 2008.

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Introduction

Education's purpose is to replace an empty mind with an open one. – Malcomb S. Forbes

The European Republic of Georgia has taken a keen interest in furthering the education of its young citizens and ensuring its independence. Under Soviet control until 1991, this nation of rich culture and history is now a young democracy. Since agriculture accounts for about half of the gross domestic product and employs about one-fourth of the labor force, agricultural and leadership education can help to expand the minds of youth and develop their leading industry (Georgia, 2008). The *Georgia to Georgia* leadership exchange is a special partnership between the University of Georgia (USA), Georgia FFA (formerly known as the Future Farmers of America), and the Future Farmers of Georgia (FFG) in the country of Georgia. During a three-week internship program, a team of collegiate leaders from the USA visited the country and conducted training for student leaders of the FFG. The training was designed to equip FFG members with the tools necessary to make a positive difference in their communities, schools, and homes through sound leadership and decision-making—qualities that require a disposition towards critical thinking. The USA trainers were all former members and officers of the FFA in the United States. The trainers' authentic leadership and agricultural experiences gave them credibility and a platform from which to share leadership ideas and knowledge of agricultural practices with the Georgian students and teachers. The *Georgia to Georgia* leadership exchange empowered FFG members to promote agriculture and leadership throughout their own communities in the Republic in Georgia.

This study of critical thinking as a result of a leadership training activity was especially important for the *Georgia to Georgia* leadership exchange, because the participants of this study represented the leaders of the seven pilot school programs, as well as the new national leaders of the FFG organization. These leaders will be largely responsible for setting vision and direction, as well as implementing new activities, for the young organization. The focus on critical thinking was also important to the leadership exchange, as it indicated the level of acceptance the Georgian students had for the ideas shared by their American counterparts.

Critical thinking is characterized as the reasoning behind actions, logic of decisions, and ability to change one's perspective based on evidence. Critical thinking comes with a certain amount of power, as it allows an individual to determine the accuracy, value, and authenticity of evidence, ideas, and actions (Beyer 1985, p. 276). According to the Foundation for Critical Thinking (2007),

A well-cultivated critical thinker:

- Raises vital questions and problems, formulating them clearly and precisely
- Gathers and assesses relevant information, using abstract ideas to interpret it effectively
- Comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards
- Thinks alternatively within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences

- Communicates effectively with others in figuring out solutions to complex problems (Foundation for Critical Thinking, The Result Section, ¶ 1).

The leadership training camp cultivated critical thinking by challenging students to accept new ideas, think differently about leadership concepts, and make plans that would shape the future of their own organization, beyond the models provided by the National FFA Organization. In order for the conference to be successful, students had to step outside of their comfort zone and experience a different type of learning – experiential [leadership] learning. Experiential learning involves a concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). The leadership training experience/camp that was developed, delivered, and evaluated in this study utilized Kolb’s model of learning (See Figure 1).

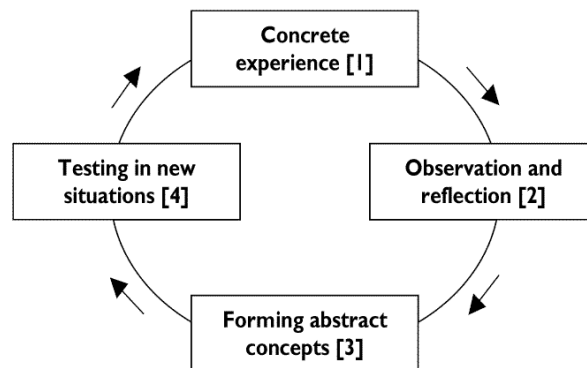


Figure 1. The Experiential Learning Cycle (Kolb, 1984).

Literature Review

Students may think critically about specific content areas (i.e. leadership development) or they may utilize their critical thinking disposition in a variety of contexts (Ricketts & Rudd, 2005). This study measured students’ disposition to think critically about a variety of contexts following a week-long leadership training camp. Critical thinking is an important component of leadership education, as critical thinking allows a leader to make objective, informed decisions that affect and influence his/her followers. Figure 2 represents hypothesized components and processes of leadership curriculum for youth (Ricketts & Rudd, 2002). This study specifically evaluated the critical thinking development of Georgian youth as a result of leadership training using the leadership education curriculum model below.

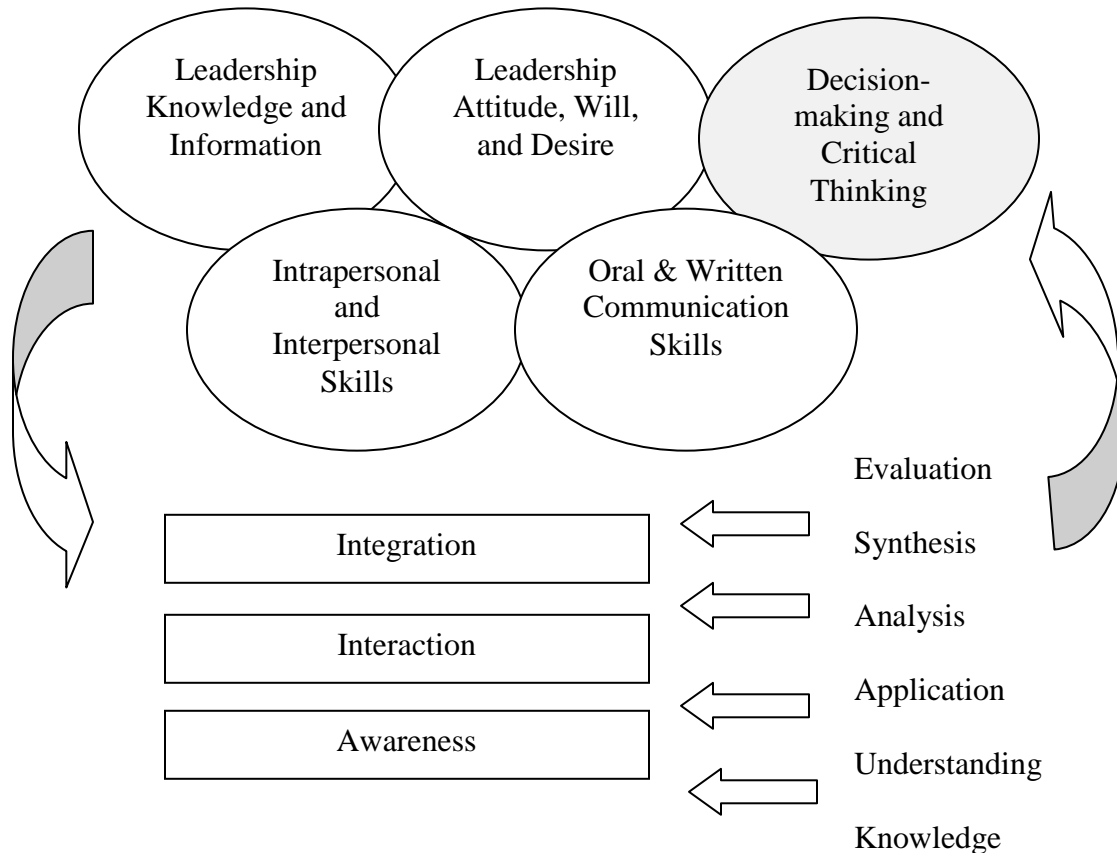


Figure 2. Model for Youth Leadership Curriculum adapted from “A Comprehensive Leadership Education Model to Train, Teach, and Develop Leadership in Youth,” by J. C. Ricketts and R. D. Rudd, 2002, *Journal of Career and Technical Education*, 19(1), Retrieved February 26, 2008.

Student development of critical thinking engenders foundations needed for a democracy and the tools needed for independent and life-long learning (Saskatchewan Education, 1989). As part of this study, Georgian students were exposed to parliamentary procedure training, and they democratically elected the first set of National FFG officers as part of the leadership training camp. Leadership experiences such as these ought to foster development of critical thinking disposition.

Developing critical thinking should allow students to continually build on their knowledge and to make more deliberate decisions. Leadership training that is cognizant of critical thinking produces individuals who value knowledge, learning, and the decision-making process. Students need to develop critical thinking in order to move their learning beyond rote memorization and submissive acceptance to true understanding (Saskatchewan Education, 1989).

The critical thinking dispositions that might allow youth to move into more active, truth-seeking leadership include *cognitive maturity*, *engagement*, and *innovativeness* (Irani, et al., 2007). Irani, et al. (2007) developed a three-construct measure, which at least conceptualizes the dispositional aspect of the critical thinking component of the aforementioned leadership

education model. These constructs were formed out of a factor analysis of the dispositions touted by renowned critical thinking researcher, Peter Facione (1990). Facione conducted a national Delphi study of experts in all areas of academia, psychology, and philosophy. He discovered the dispositions of analyticity, self-confidence, inquisitiveness, maturity, open-mindedness, systematicity, and truth-seeking. Following factor analyses of Facione's dispositions, a critical thinking research group from four universities determined that the aforementioned three factors of cognitive maturity, engagement, and innovativeness were more comprehensive and explanatory of critical thinking dispositions (Irani, et al., 2007).

Engagement, Cognitive Maturity, and Innovativeness are usually measured via an instrument referred to as the EMI: Critical Thinking Disposition Assessment. According to Ricketts and Rudd (2005):

The Engagement disposition measured students' predisposition to look for opportunities to use reasoning; anticipating situations that require reasoning; and confidence in reasoning ability. The Innovativeness disposition measured students' predisposition to be intellectually curious and wanting to know the truth. The Cognitive Maturity (Maturity) disposition measured students' awareness of the complexity of real problems; being open to other points of view; and being aware of their own and others' biases and predispositions (p. 33).

Ricketts (2005) analyzed student leaders of the National FFA Organization and found positive relationships between critical thinking and (a) leadership experiences (i.e. public speaking contest, parliamentary procedure events, conventions) and (b) leadership training (i.e. leadership courses, leadership workshops, etc.). As a result of the study with leaders in the FFA, Ricketts recommended more youth be exposed to formal leadership training activities, encouragement of youth to participate in non-formal leadership activities, and additional research to establish the relationship between critical thinking and leadership development.

This study of the change in critical thinking disposition as a result of a formal leadership training camp responds to the recommendations of Ricketts (2005). The purpose of the *Georgia to Georgia* leadership exchange was to equip and inspire Future Farmers of Georgia members to make a positive difference through leadership training, resource sharing, and intercultural dialogue. The evaluation of critical thinking development will provide insight regarding the accomplishment of these purposes.

Purpose and Objectives

This study was conducted to determine whether the methods and concepts introduced to students during the leadership training experience changed the students' critical thinking dispositions. Specifically, the following objectives guided this study:

1. Describe students' critical thinking disposition scores prior to the FFG leadership training experience.
2. Describe students' critical thinking disposition scores after completing the FFG leadership training experience.

3. Describe the change in critical thinking disposition scores as a result of the FFA leadership training experience.

Methods

The leadership training experience/camp in this study was developed for the newly established FFG. The leadership training event is one of several initiatives being supported by the United States Department of Agriculture (USDA), World Link, Inc., a private, non-profit organization whose purpose is to provide international cross-cultural exchange opportunities for students and educators, the Georgia Institute of Public Affairs (GIPA), and the University of Georgia.

The treatment (X) for this study was the aforementioned four-day leadership training camp in which Georgian FFG members ($N = 28$) participated in leadership education and activities that revolved around the following themes:

- (1) Characteristics of a Good Leader,
- (2) Characteristics of a Good Team,
- (3) Officer Roles, Responsibilities, and Team Maintenance/Functioning, and
- (4) Planning.

Seven schools attended the leadership camp yielding a population of $N = 28$ with each school represented. The majority of FFG members participating in the study was male ($f = 16$). Throughout the conference students discovered the importance of character, commitment, leading as a team, and goal setting. Many of the activities focused on the significance of communication, decision-making, accountability, and commitment. After being introduced to the traditional role each officer plays on a FFG officer team, the students studied the significance of responsibility, conducting successful meetings, and using parliamentary procedure. The agenda for the leadership training camp follows:

Day 1 – Focus: Me

An introduction to leadership and exploration of characteristics of a good leader.

Welcome/Get to Know You Activities

Session 1: Defining Leadership Styles

Session 2: Setting Vision and Creating School Vision Statements

Session 3: Defining and Applying Character Qualities of a Leader

Reflections: Care-packages and Letters from Partner Schools

Day 2 – Focus: We

A combination team building initiatives and the discussion of the qualities necessary for leaders and high-performing teams.

Session 1: Teambuilding Initiatives

Session 2: Discovering Team Accountability

Session 3: Practicing Team Communication

Session 4: Demonstrating Commitment to the Team
Recreation: Campfire, S'mores, Traditional Georgian Singing and Dancing

Day 3 – Focus: Do

A closer look at officer roles and responsibilities and how to maintain a successful organization.

Session 1: Officer Roles & Responsibilities

Session 2: Running a Successful Meeting - Order of Meetings, Voting, Parliamentary Procedure

Session 3: Writing and Presenting a Successful Speech or Presentation

Field Trip: Historic Castle/Beach

Reflections: Sea-side Café in Batumi

Day 4 – Focus: Serve

Understanding the planning process and working in school teams to develop plans for school and community activities.

National Officer Candidate Speeches and Election

Session 1: Identifying Needs in School and Community & Brainstorming Activity Ideas

Session 2: How to Plan Projects and Activities

Session 3: Putting It All Together: Creation of a Plan of Activities/Planning Time

Celebration Banquet and Announcement of National Officers

Recreation: Dance

Day 5 – Closing

Conference Closing/Wrap-Up Remarks Led by New National Officer Team

This was a descriptive population study that utilized a one-group retrospective-posttest design ($X O_1 O_2$). According to Rohs and Langone (2006), the retrospective-posttest is a more accurate than the traditional pre-test/posttest. Using this type of self-reported assessment, participants are asked to respond twice following the treatment. The first response (column) asked participants to report their disposition prior to the treatment (leadership training camp). The second response (column) asked participants to report their disposition as a result of the treatment (Howard, Ralph, Gulanick, Maxwell, Nance, & Gerber, 1979).

On the last full day of the leadership training camp, students consented to complete the retrospective-posttest version of the EMI: Critical Thinking Disposition Assessment (Irani, et al., 2007). The standard EMI instrument has undergone extensive content and face validity checks from experts in the field. The adapted version was also approved by six critical thinking experts from five different land-grant institutions. Reliability of the original EMI ranges from ($\alpha = 0.79$ to 0.94) for the various constructs (Irani, et al). Reliability of the adapted version, as used in this study, ranges from ($\alpha = 0.79$ to 0.93) (Ricketts, Pringle, & Douglas, 2007). In addition, the adapted EMI was translated to the Georgian language, which has a literary tradition dating back

to the 5th Century A.D. (Georgian language, 2008). Data was entered into Excel, and means and standard deviations were calculated via Excel to determine retro, post, and change in critical thinking dispositions scores as a result of the leadership training experience. The EMI took about twenty minutes to complete. The assessment contained twenty-six questions, each relating to one of the three constructs: engagement, cognitive maturity, and innovativeness.

Findings

Objective one sought to describe critical thinking dispositions prior to the leadership training experience and objective two sought to describe dispositions following the experience. FFG member-participants of the leadership training camp had lower Engagement ($M = 42.25$; $SD = 5.39$), Cognitive Maturity ($M = 28.14$; $SD = 4.71$), Innovativeness ($M = 24.71$; $SD = 4.56$), and Total EMI ($M = 95.11$; $SD = 12.34$) critical thinking dispositions at the outset of the event compared to the completion of the leadership training activity (Table 1). Participants reported critical thinking disposition mean scores of 47.75 ($SD = 7.45$), 32.82 ($SD = 6.66$), 28.11 ($SD = 4.92$), and 108.68 ($SD = 17.90$) respectively for Engagement, Cognitive Maturity, Innovativeness, and Total EMI score.

Table 1. *Retrospective-Posttest Critical Thinking Dispositions Scores (N=28)*

| | <i>M</i> | <i>SD</i> |
|------------------------------------|----------|-----------|
| Engagement | | |
| Retrospective | 42.25 | 5.39 |
| Post | 47.75 | 7.45 |
| Cognitive Maturity | | |
| Retrospective | 28.14 | 4.71 |
| Post | 32.82 | 6.66 |
| Innovativeness | | |
| Retrospective | 24.71 | 4.56 |
| Post | 28.11 | 4.92 |
| Total EMI: Critical Thinking Score | | |
| Retrospective | 95.11 | 12.34 |
| Post | 108.68 | 17.90 |

Objective three sought to determine the change in critical thinking dispositions as a result of the leadership training experience. Given the reported range differences (Irani, et al., 2007) for each construct, change in critical thinking dispositions is reported as a percentage. Engagement scores increased positively, 10.23%. Cognitive Maturity positively increased by 11.83%. Innovativeness increased by 9.99% and Total EMI scores improved by 10.65% (Table 2). Given that this is a population study, it would not be appropriate to make inferences about the significance of the changes.

Table 2. *Percentage increase for critical thinking disposition scores as a result of the FFG leadership training experience (N=28)*

| | <i>Percent Change</i> |
|--------------------|-----------------------|
| Engagement | 10.23% |
| Cognitive Maturity | 11.83% |
| Innovativeness | 9.99% |
| Total EMI Score | 10.65% |

Conclusions/Implications

Critical thinking disposition scores of pre and post experience would be classified as weak disposition scores (Bisdorf-Rhoades, Ricketts, Irani, Lundy, & Telg, 2005), but the only other published study investigating the critical thinking dispositions of non-American participants using the EMI determined that international students scored significantly lower in the critical thinking dispositions of Engagement and Innovativeness, as well as total disposition score (Irani, Rudd, Friedel, Gallo-Meagher, & DeFino, 2004).

Though the scores were low, the FFG leadership training experience/camp in the Republic of Georgia was impactful. Students developed in all areas of critical thinking disposition (Engagement, Cognitive Maturity, Innovativeness, Total EMI) by an average of ten percentage points. Because this was a population study lacking a control group, researchers wonder if the change in critical thinking can be attributed to leadership content which ought to foster critical thinking (i.e. parliamentary procedure) or the effectiveness of the experiential learning methodology (Kolb, 1984), which is a foreign concept to a Georgian educational system still influenced of decades of rote lecture and memorization.

Upon completing the leadership training conference, students experienced the most growth in the area of cognitive maturity – the disposition related to understanding that things are more complex than they at first seem. Leadership training encourages students to reconsider previously held ideas and encourages critical thinking. This news is encouraging for FFG members with the hope of leading their country into a new era of democracy and freedom.

Recommendations

FFG members and leaders seeking to enhance the critical thinking disposition of youth in Georgia need to continue focusing on leadership education that infuses critical thinking; however, training should also be provided that overtly teaches critical thinking to the young leaders. Friedel, Irani, Rudd, Gallo, and Eckhardt (2006) discovered that overtly teaching for critical thinking significantly influenced critical thinking. Perhaps combining experiential leadership learning with specific content modules related to the “nuts and bolts” of developing critical thinking would develop dispositions more fully.

The retrospective-posttest version of the EMI: Critical Thinking Disposition Assessment (Irani, et al., 2007) was effective in determining impact of the leadership training experience.

However, caution should be exercised in evaluating these results as assessments are new to the Georgian students; students' unfamiliarity with such surveying techniques and the translation process may introduce more error than usual in this study. Although the retrospective-posttest evaluation is reportedly more accurate (Rohs & Langone, 2006), perhaps a true pretest-posttest, complete with randomized treatment and control groups, should be additionally delivered for future leadership training experiences for FFG members in the Republic of Georgia.

Based on the results from the assessments, future leadership trainers should continue to ask questions that reflect higher order thinking skills during the workshops, probe for more meaningful answers, and utilize reinforcement techniques to ensure concepts are well understood. Critical thinking instruction requires time in order to be effective; therefore, continued administrative support and commitment are necessary for long-term success. Unfortunately, funding that supported the *Georgia to Georgia* leadership exchange is limited. Therefore, it is also recommended that FFG participants of this study become the trainers for other FFG members in their school and/or region utilizing the content and methods learned at the leadership training camp.

It is recommended that future FFG leadership training events continue to utilize experiential learning methodologies. It is also recommended that randomization and control groups be included in future studies to determine the specific contributors to the critical thinking dispositions development. If future studies determine that the experiential leadership learning activities are continuously as impactful, the long-term effects of similar FFG leadership training camps could contribute to personal, organizational, and perhaps even national achievements in leadership and agriculture. The sustainability of the leadership training camps and the FFG will depend upon leaders who are able to adopt the dispositions of critical thinking.

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