FACTORS ASSOCIATED WITH ADMINISTRATORS' ATTITUDES TOWARD AGRICULTURAL EDUCATION AT THE PRIMARY SCHOOL LEVEL IN BELIZE

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Abstract

The economy of Belize is heavily dependent on agriculture. Because of its importance, attempts were made to integrate instruction about agriculture into the curriculum at the primary school level. The attempts proved to be unsuccessful and prompted this study of implementation barriers. The objectives of the study were to determine the attitudes of administrators in the Belize Ministry of Education toward agricultural education at the primary school level, and factors related with these attitudes. All senior level administrators in the Ministry of Belize were included in the study. The findings suggest that administrators tend to have a moderately favorable attitude toward agricultural education at the primary school level. Factors found to be associated with attitude were age, level of education, and years experience in public education. Based on the findings and conclusions, the principal recommendation was to offer in-service education programs for senior level administrators with the goal of drawing their attention to the economic and educational value of agriculture in Belize.

Agriculture is important to the economy of Belize (USAID, 1988). Most citizens of Belize earn their living from agriculture with important sources of income from fishing, forestry, and livestock (Compton, 1994). Because of Belize's economic dependency on agriculture, the Belize Ministry of Education has attempted to include instruction about agriculture at the primary school level (Green, Eck, Hurwitz, Keith & Massey, 1988). This level was targeted because most of Belize's population only obtains a primary school education (Massey, 1986). Green et al. (1988) suggested that including instruction about agriculture at the primary school level would help the youth of Belize become agriculturally literate and eventually contribute to the economic well-being of the country. Thus, seeking out administrators' attitudes toward agricultural education at the primary school level would strengthen position statements to promote efforts to include instruction about agriculture at the primary school level in Belize.

Literature Base

Although there is limited information on the institutionalization of agricultural education in developing countries (Swanson, Sigman, Koehmen & Rassi, 1981), countries in Latin America and Africa, and Bangladesh and the Commonwealth of Dominica among others are making strides to do so. Macias-Lopez (1990) reported that in Latin America agricultural
education is a relatively new discipline and only limited research is available. In several African countries, efforts have failed to regularize agricultural education within the school system, in part due to lack of policy (Craig, 1990; Galabawa, 1990; Magalula, 1990). Eaton and Bruening (1994) reported that school administrators in the Bangladesh Ministry of Education were taking steps to regularize instruction about agriculture within the school system. The Commonwealth of Dominica was reported to be in the process of integrating instruction about agriculture within the established school curriculum area (Education Sector Plan for Educational Development in the Commonwealth of Dominica, 1994).

Belize, like many other countries, has struggled to systematically include instruction about agriculture in the primary school curriculum. In this effort, the Belize Ministry of Education attempted to include instruction about agriculture in the primary level schools by integrating it into the academic curriculum. In 1975, with the assistance of Cooperation of American Relief Everywhere (CARE), the Ministry of Education introduced the Relevant Education for Agriculture and Production (REAP) program to work toward this goal (Green et al., 1998; Eck, 1986).

Of the 150 rural primary schools of Belize, 55 schools were involved in the REAP program during the first decade of its existence. Unfortunately, as CARE phased out REAP, the program gradually declined (Green et al., 1988). Bennett & Eck (1990) attributed the program's decline and eventual demise to the lack of policy for program continuity, and lack of support by senior level administrators in the Ministry of Education.

Administrative support is vital to the success of educational programs. School administrators provide the human, financial, and instructional support necessary for program development and implementation (Rebore, 1991). Burnett & Miller (cited in Magill & Leising, 1990) suggested that "the role of school administrators in agricultural programs may be a function of their attitude toward these programs" (p.147). Fishbein & Ajzen (1975) indicated that attitudes can be used to predict a person's behavior. Therefore, as efforts are advanced to institutionalize instruction about agriculture at the primary school level in Belize, it is important to determine the attitudes of senior level administrators in the Belize Ministry of Education toward agricultural education at this level.

**Purpose and Objectives**

The purpose of this study was to determine the attitudes of senior level administrators in the Belize Ministry of Education toward agricultural education at the primary school level in Belize, and to determine the association of demographic factors with administrators' attitudes. The following objectives guided the study:

1. Examine selected demographic characteristics of senior level administrators in the Belize Ministry of Education.
2. Determine the attitudes of senior level administrators in the Belize Ministry of Education toward agricultural education at the primary school level.
3. Determine the relationship between attitudes toward agricultural education at the primary school level and selected demographic characteristics of senior level administrators in the Belize Ministry of Education.

**Procedures**

The design of the study was descriptive-correlational research (Ary, Jacobs & Razavieh, 1996). The population under investigation consisted of all senior level administrators in the Belize Ministry of Education during the 1994-1995 academic school year. In this study, senior level administrators are defined as those persons who have administrative responsibilities and a direct impact on educational decisions in Belize. Because the number of senior level administrators in the Belize Ministry of Education was small (N=40), a census study was
employed.

**Instrumentation**

Data were collected using an instrument developed by the researchers to accomplish the objectives of the study. The data collection instrument consisted of two sections.

Section one contained a 7-point semantic differential scale ranging from 1 (Unfavorable) to 7 (Favorable) and contained 15 bipolar adjectives. Isaac & Michael (1990) served as a source of reference in developing the structure of the semantic differential scale as the means of assessing attitudes. Respondents were asked to rate the construct, Agricultural Education at the Primary School Level, on each bipolar adjective. Examples of bipolar adjectives included Desirable/Undesirable, Important/Unimportant, Positive/Negative. Using an equidistant line drawn between each paired expression, with the assumption that a mark in the middle represents a response that is neutral, respondents could rate the construct on a scale from 1 to 7. To reduce ambiguity and misinterpretation of the construct, an adaptation of the National Research Council's (1988) definition of agricultural education was provided: Instruction that integrates basic concepts of food and fiber and its related historic, economic, and environmental factors within the established school curriculum. To reduce response set, the direction of the bipolar items was reversed in random fashion. Section two of the instrument was designed to gather personal characteristics of the respondents, including age, gender, education level, years employed in public education, and prior enrollment in courses in agriculture and/or agricultural education.

Face and content validity were established using a panel of five experts in the Department of Agricultural and Extension Education at New Mexico State University consisting of three faculty and two graduate students with knowledge about instrumentation. The instrument was revised to reflect the panel's input regarding clarity of directions. Additionally, the instrument was assessed for reliability through a pilot test using 35 purposefully selected international students at New Mexico State University whose characteristics approximated the subjects under investigation. All pilot test subjects were either graduate or undergraduate students who had administrative experience in the field of agriculture and/or education. From the pilot test data, a Cronbach's alpha coefficient (as a form of internal consistency) was calculated. The instrument yielded a reliability estimate of .88, which was deemed acceptable. Therefore, no changes were made to the instrument.

**Data Collection**

To facilitate data collection, one researcher traveled to Belize to distribute the questionnaire to the subjects. While in Belize and before collecting data, the researcher contacted subjects to solicit their participation and notify them of the forthcoming questionnaire. Because of the slow mail system in Belize, the questionnaires were hand delivered. At delivery, subjects received a packet containing a cover letter structured according to Dillman (1978), the questionnaire, and a self-addressed return envelope. Two weeks after the initial delivery, 90% (N=36) of the questionnaires were completed and returned. In efforts to gather data from the four nonrespondents, the Director of the Vocational Technical Training Unit in Belize made follow-up visits to these individuals. Unfortunately, the attempts were futile and the four questionnaires remained outstanding.

**Data Analysis**

The data were analyzed using SPSS/PC (Version 6.1). Descriptive statistics such as measures of central tendency and variability appropriate for the level of measurement of the data were reported. Correlational analyses such as Pearson Product-Moment, Point-biserial, and Spearman's rho correlation coefficients were used to describe the magnitude and direction of relationships between variables. The magnitude of the relationships was interpreted using Davis'
(1971) conventions. Because this was intended to be a census study, population parameters were used and no attempt was or should be made to extrapolate these data beyond the subjects studied. The fact that responses could not be obtained from all 40 respondents is a limitation.

**Results**

**Demographic Characteristics**

The majority of respondents, 58.3%, were male (Table 1). The average age was 41.4 years with a range from 24 to 63 years. In terms of highest level of education attained, respondents ranged from having a high school diploma (5.6%) to a doctorate (5.6%). However, the largest percentage of respondents reported having a bachelor's degree (44.4%), followed by a master's degree (33.3%), and an associate's degree (11.1%). The number of years of experience working in public education reported by respondents ranged from 3 to 33 with a mean of 18.9 years.

Respondents were asked to report their participation in courses related to agriculture or agricultural education. Of the 36 respondents, 44.4% indicated they were enrolled in agriculture and/or agricultural education courses at some time during their formal education.

**Attitudes of Senior Level Administrators**

Using a 7-point semantic differential scale (1 being unfavorable and 7 favorable), respondents were asked to indicate their attitudes toward agricultural education at the primary school level on 15 bipolar adjectives. Overall, respondents had a mean attitude score of 5.38 (Table 2). The standard deviation from the mean attitude score was .87, with individual scores ranging from 2.2 to 6.6.

**Factors Associated with Attitudes**

To determine factors (demographic characteristics) associated with respondents' attitudes toward agricultural education at the primary school level, correlation coefficients were calculated. The data indicated that gender had a negligible inverse relationship ($\rho_{pb}=-.03$) with respondents' attitudes toward agricultural education at the primary school level (Table 3). Similarly, the number of years respondents worked in public education had a low inverse relationship ($\rho=-.13$) with their attitudes toward agricultural education at the primary school level.

Conversely, age ($\rho=.11$), level of education ($\rho_r=.10$), and prior enrollment ($\rho_{pb}=.07$) in agriculture and/or agricultural education courses had a positive relationship with respondents' attitudes toward agricultural education at the primary school level.
Table 1
Characteristics of Senior Level Administrators in the Belize Ministry of Education (N=36)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>15</td>
<td>41.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>21</td>
<td>58.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>41.4</td>
<td>8.43</td>
<td>24 - 63</td>
<td></td>
</tr>
<tr>
<td>Highest Level of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>2</td>
<td>5.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate</td>
<td>4</td>
<td>11.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelors</td>
<td>16</td>
<td>44.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td>12</td>
<td>33.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctorate</td>
<td>2</td>
<td>5.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Experience in Public Education (years)</td>
<td>18.9</td>
<td>9.73</td>
<td>3 - 33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2
Attitudes of Senior Level Administrators in Belize Toward Agricultural Education at the Primary School Level (N=36)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Education</td>
<td>5.38</td>
<td>.87</td>
<td>2.2 - 6.6</td>
</tr>
</tbody>
</table>

Note. Attitude scale is based on: 1=Unfavorable to 7=Favorable.

Table 3
Relationship Between Attitudes Toward Agricultural Education at the Primary School Level and Selected Demographics (N=36)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Correlation Coefficient</th>
<th>Magnitude&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>ρ&lt;sub&gt;pb&lt;/sub&gt;=-.03&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Negligible</td>
</tr>
<tr>
<td>Age</td>
<td>ρ = 0.11</td>
<td>Low</td>
</tr>
<tr>
<td>Years in Public Education</td>
<td>ρ = -.13</td>
<td>Low</td>
</tr>
<tr>
<td>Highest Level of Education</td>
<td>ρ&lt;sub&gt;s&lt;/sub&gt; = .10&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Low</td>
</tr>
<tr>
<td>Enrollment in Agricultural Courses</td>
<td>ρ&lt;sub&gt;pb&lt;/sub&gt;= .07&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Negligible</td>
</tr>
</tbody>
</table>

Note. Attitude scale is based on: 1=Unfavorable to 7=Favorable.

<sup>a</sup> Based on Davis’ convention (1971).
<sup>b</sup> Coded: 0=Female; 1=Male.
<sup>c</sup> Coded: 1=High School; 2=Associate; 3=Bachelors; 4=Masters; 5=Doctorate.
<sup>d</sup> Coded: 1=No; 2=Yes.
Conclusions and Recommendations

Information about agricultural education in developing countries is limited. The literature available suggests that efforts are being made to include instruction about agriculture in existing curricula with varying rates of success.

Administrators are central to any educational endeavor. The success or failure of any program rests upon the decisions and support offered by its administrators. The Belize Ministry of Education has been unsuccessful in systematically reinstating instruction about agriculture at the primary school level since the REAP program was phased out in the early 1970s. Agriculture is too important in Belize to leave idle the efforts to seek support for instruction about agriculture at the primary school level. Toward this effort, the following conclusions and recommendations are offered. The results of this study reveal that senior level administrators in the Belize Ministry of Education possess a moderately favorable attitude ($µ = 5.38$) toward agricultural education at the primary school level. As such, there is margin for improving attitudes of senior level administrators in the Belize Ministry of Education. One strategy to adjust senior level administrators' attitudes toward agricultural education at the primary school level in a more favorable direction is to offer in-service education programs. At these in-service education programs, the attention and focus of senior level administrators should be drawn to the importance of agriculture to the economy of Belize, agricultural literacy as an educational issue, and the long-term benefits to its citizens by educating the youth about agriculture through the integration of agricultural education into the curriculum beginning at the primary level.

A second strategy could be that individuals or groups of individuals attempting to initiate instruction about agriculture at the primary school level in Belize should seek out administrators who possess characteristics that were positively associated with attitudes toward agricultural education at the primary school level. Older male or female senior level administrators with high education levels and those who have taken coursework in agriculture or related areas should be targeted. In working with these senior level administrators, efforts should be exerted to pursue and develop policy that supports and delivers agricultural education at the primary school level.

Senior level administrators who possessed a higher number of years in public education were found to have a negative attitude toward agricultural education at the primary school level. These senior level administrators should be specifically targeted for in-service education.

An overall strategy to influence positively all senior level administrators' attitudes toward agricultural education at the primary school level would be to showcase exemplary agricultural education programs within and outside Belize.

It is recommended that stakeholders, administrators, and policy makers in Belize use these findings, conclusions, and recommendations as a foundation for making decisions in the move to revitalize agricultural education at the primary level.

While failed attempts to implement agricultural education at the primary school level can be attributed to a myriad of factors, this study showed that administrative attitude can be a potential barrier. Research should be continued to identify other barriers that go beyond the scope of this study that have kept the Belize Ministry of Education from pledging its full support for instructional programs so central to the economy. Research questions should focus on teachers to study factors such as attitudes, teacher training, and competencies. Additionally, curriculum availability and development, and Ministry of Education budgetary issues should be investigated as plausible barriers.
References


Eck, D. (1986). Relevant Education for Agriculture and Production (REAP). Conference on Science Education Research in Latin America and the Caribbean, University of the West Indies, Port of Spain, Trinidad.


Massey, R. (1986). The relevant education for agriculture and production nine-year formative evaluation. CARE. Belize, Central America.


