The Journal of International Agricultural and Extension Education is the official refereed publication of the Association for International Agricultural and Extension Education. The purpose is to enhance the research and knowledge base of agricultural and extension education from an international perspective.

Articles intended for publication should focus on international agricultural education and/or international extension education. Articles should relate to current or emerging issues, cite appropriate literature, and draw out implications for international agricultural and extension education. Manuscripts should not have been published or be under consideration for publication by another journal.

Three types of articles are solicited for the Journal: Feature Articles; Commentary Articles; Tools of the Profession Articles.

Feature Articles

Feature articles focus on philosophy, current or emerging issues, and the methodology and practical application of specific research and appropriate technologies, which have implications for developed and developing countries. Feature articles go through the Journal’s blind review process utilizing peer reviewers to evaluate content and readability. Reviewers are usually selected from the membership of the AIAEE. In the blind review process all reference to author(s) is removed before the manuscript is sent to reviewers.

Commentary Articles

Commentary articles state an opinion, offer a challenge, or present a thought-provoking idea on an issue of concern to international agricultural and extension education, including a published article in the Journal. Commentary articles are reviewed by two members of the editorial board for appropriateness and relevance to the Journal, and for readability.

Tools of the Profession Articles

Tools of the Profession articles report on specific techniques, materials, books and technologies that can be useful to agricultural and extension educators in a global context and/or in a country/region. Tools of the Profession articles are reviewed by two members of the editorial board for appropriateness and relevance to the Journal, and for readability.

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# Journal of International Agricultural and Extension Education

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From the Editor

This is a very busy time for the AIAEE organization and for me both professionally and privately. I will explain. First of all this is the end of my second full year as Editor of the Journal of International Agricultural and Extension Education. At this time AIAEE is actively seeking applications for position of Editor (2002-2004). As I enter my final year as Editor, I would like to encourage the scholars within the organization to consider accepting this important responsibility. The Journal continues to be one of the most important and visible aspects of the Association for International Agricultural and Extension Education. If you are interested in learning more about the responsibilities of Editor or would like information about applying please contact me or John Richardson, Chair of the Selection Committee.

AIAEE is also very busy planning the upcoming 2001 AIAEE Annual Conference in Baton Rouge, La. Past-President and Past-Editor Satish Verma has planned another outstanding conference for all AIAEE members. I have had the pleasure of visiting Baton Rouge and Louisiana State University. I highly encourage all members to consider attending. Registration information is included on page 73 of this issue.

Most important of all is this issue includes eight outstanding articles from agricultural and extension education scholars from throughout the globe. Articles address important issues such as sustainability, teaching effectiveness for international students, formal educational programs and perceptions of agricultural researchers. There is also two book reviews by Arlen Etling and Thani Almuhairi starting on page 71. This variety of articles that will be of interest to all AIAEE members.

As Editor, I am always grateful for the time and effort of the individuals who serve as reviewers for papers submitted to the Journal. I am well aware of how busy everyone is with their regular responsibilities. Therefore, I would like to extend my appreciation to those individuals who I call on to assist with the Journal review process. It is my desire to reduce the work load on those reviewers, therefore, I am in need of additional reviewers who can read and evaluate one to three papers per year. If you currently do not serve as a reviewer and are interested please contact me.

If you are not yet aware, I have changed positions since the publication of the Summer Conference Issue of the Journal. In late summer, I accepted a position in the Department of Human and Community Resource Development at The Ohio State University in Columbus, OH. This is a significant move for me professionally. I look forward to working with the many experienced scholars in teacher education, extension education and international agriculture here at Ohio State. My new address and contact information is on page 2.

Finally, by the time you receive this my wife and I will be blessed with our second child. We currently have a 3½ year old son, Daniel. He is eagerly waiting the arrival of his new sibling. I would also like to wish everyone around Happy Holidays and a safe and prosperous New Year.
Case Study on the Sustainability of Pahang Barat Integrated Agricultural Development Project Phase I in Peninsular Malaysia

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Abstract

The overall sustainability of the Pahang Barat “Integrated Agricultural Development Project” (IADP Phase I) in Peninsular Malaysia was investigated by evaluating its integrated environmental, economic and social impact. A questionnaire-interview schedule and set of open-ended questions were used to elicit perceptions of randomly selected 111 respondents about IADP integrated sustainability. Data were analyzed by means of descriptive statistics computer program, SPSS for Windows. Observation on the beneficiaries' sustainable practices and secondary data (statistical figures) taken from reviewed documents and expert agencies were used to support the respondents' perceptions. Based on the results, IADP overall sustainability (environmental, economic and social) was concluded “high.” Prescott-Allen’s postulate that project sustainability can be perceived and compared with conventional data proved relevant to this finding.

Introduction

Overview of the Study Framework

As an area of research, sustainable development has been challenged by many thought provoking questions. These include: How shall we know a development project is sustainable? How shall we measure sustainability of a development project? What indicators should we use? These questions frequently arise due to various interpretations of the words sustainable, sustainability and sustainable development, all of which have been the subjects of international scrutiny since the coming into use in developmental dialogue in the 1980s. Shearman (1990), for example, presented a compelling argument that “it is not sustainability that requires definition or clarification,” rather “it is in its implication” for any given context where applied. The same author maintained that “sustainability” is a process, therefore its implicative meaning should be understood on the basis of the development context in which it is viewed.

Project sustainability study, likewise, has been considered in the past as a separate function of either the environmental, economic or social factor. That traditional approach is no longer adequate because it fails to consider ecological, economic and social interconnections (Robinson, 1991, cited in Duffy et al. 1998). It has also been recently criticized because it puts people (social dimension) outside of the system when, in fact, they are the vital actors in perpetuating project sustainability (Prescott-Allen, 1995; in Trzyna edition 1995; Internet, 1999). O’Connor (1995, in Trzyna edition, 1995) stated, in support, that indicators used in studying project sustainability must give emphasis on the interface between environmental, economic and social factors, and the symbiosis between statistics and models.


With due considerations to the foregoing authors’ thoughts, sustainability of the “Integrated Agricultural Development Project” (IADP Phase I) implemented in the six rural villages of the western districts of Pahang, Peninsular Malaysia was investigated through its
integrated impact on the environmental, economic, and social well-being of the beneficiaries and the villages. “Systemic-User-driven Sustainability Assessment” which employs a method of assessment called “Barometer of Sustainability” (Prescott-Allen, 1995, in Trzyna edition, 1995 and in Internet, 1999) was the reference paradigm. The Barometer is a tool for measuring and communicating progress towards community or project sustainability. It provides a systematic way of organizing and combining indicators so that conclusion can be made about the conditions of people, ecosystems, and the effects of people-ecosystem interactions. Further, the Barometer can be used to compare where people perceived themselves to be in terms of the ecosystem and human well-being and where conventional data (statistics) would place them.

The foregoing concept was operationalized in the study to include the environmental, economic and social dimensions of project sustainability viewed as integrated. Environmental sustainability (Munro, 1995; in Trzyna edition, 1995) is referred to as the maintenance of a good supporting ecosystem which provides the necessities of life, including air, fresh water, food, soil regeneration, good temperatures, plants and the circulation of carbon and oxygen. If these are enjoyed by the beneficiaries for a long period of time, then a project is said to be environmentally sustainable.

Economic sustainability emphasizes employment, income generation, business opportunities, physical infrastructures and farm programs. It includes human resource development, education, health, and housing (Wimberly, 1993). Pearce (1994) pointed to increases in income, improvement in health and nutritional status, educational achievement and access to basic resources (water, electricity, etc.) as indicators of project economic sustainability.

Social sustainability refers to attitudinal change and values transformation among project beneficiaries, as evidenced through active collaboration and participation in project activities. Fingers and Kilcoyne, Jr. (1995, in Trzyna edition, 1995) stated that the indicators of social sustainability consist of an individual beneficiary's involvement or participation in projects and their readiness to change; community building activities such as collaboration among critical actors and the degree of emerging sustainable units; and the individual beneficiary's organizational and societal transformation.

Background of the Problem

Pahang Barat “Integrated Agricultural Development Project” (IADP Phase I) is a Malaysian government project. Six poor villages in the western districts of Pahang State, namely Kuala Santul, Perlok, Paya Luas, Pagar Sasaki and Pelangai were the pioneer recipient villages.

IADP projects were mostly agro-forestry designed for the smallholder farmers that, at that time, comprised the majority of the project area's poor population. The projects general aim was to increase the income-base of poor rural villagers by developing new unutilized land and introducing high yielding and high-valued crops to existing agricultural areas (Quazi, 1985). Since IADP is a prototype project, it is meant to be replicated in other poor rural areas of Malaysia.

IADP Phase I was considered a viable agricultural development project between 1985 and 1998, when the study was conducted. A relevant question that can be asked is, “What made IADP Phase I sustainable within that span of time?” This question spurred the researcher to investigate the overall sustainability of this IADP through a model that integrates the environmental, economic, and social dimensions of sustainability. The results serve to provide a holistic understanding of IADP sustainability, in contrast to the separate function of sustainability previously approached but recently criticized.

Project sustainability (Prescott-Allen, 1995; Internet, 1999) relies on the maintenance of a good environment, economic benefits rendered to the beneficiaries, and social contributions for the improvement of the community. The author likened the condition of the ecosystem (environmental) and human system (economic
and social) integration to the condition of an egg. For an egg to be good, both the white and the yolk must be good, otherwise both will be spoiled.

IADP sustainability was viewed in the same analogy. To be sustainable, IADP must bring economic benefits to the beneficiaries that shall continue to flourish so long as the environment is maintained in a state which supports the economic activities. Further, IADP’s beneficiaries must be socially prepared to acquire good attitudes and values which enable them to become responsible individuals who can perpetuate good environment. This premise becomes the basis for the construct to study the environmental, economic and social factors that contributed to IADP overall sustainability the latter being the dependent variable and the three mentioned factors as independent variables.

**Purpose**

The study's purpose was to identify environmental, economic and social factors and determine their level of contributions to the overall sustainability of Pahang Barat Integrated Agricultural Development Project Phase I implemented in the villages previously mentioned.

**Objectives**

The specific objectives of the study were to:

1. identify environmentally related variables and determine their level of contribution to IADP sustainability.
2. identify economically related variables and determine their level of sustainability among the IADP beneficiaries.
3. identify socially related variables and determine their level of sustainability in relation to the beneficiaries, organization and community practice and transformation.

**Methodology**

**Data Gathering and Analysis**

The research is of the descriptive-exploratory type. The survey method, utilizing questionnaires and open-ended questions administered through an interview-schedule and designed to elicit perceptions of 111 randomly selected respondents from a total of 1096 beneficiaries, was primarily used. The first part of the questionnaire asked about the demographics of the respondents. The second part consisted of questions on three main topics, the environmental (8 variables), economic (8 variables) and social factors of IADP sustainability. The social factors section consisted of two topics, individual beneficiary's participation and transformation (13 variables) and community building and organizational transformation (9 variables). The specific variables were named under the results of the study.

The questionnaire was pre-tested for reliability and resulted in a Cronbach alpha values of environmental factor (.705); economic factor (.802); social factor such as beneficiaries participation and transformation (.805) and community building and organizational transformation (.801). Descriptive statistics through computer (SPSS for Windows) were used to analyze the data gathered through the survey method.

Observation was done by the researcher in the villages for 42 days. It was designed to get information on the status of IADP implemented projects, beneficiaries' project sustainability practices and activities related to IADP environmental, economic and social sustainability. Two field notes of 50 leaves each were used in recording the observed data. Document review was designed to get secondary data (statistical figures) on the IADP environmental, economic and social sustainability. These data were used to support the perceptions of the respondents.

**Measuring Scale**

A five rung scale patterned after Prescott-Alien's (1995, in Trzyna edition, 1995; Internet, 1999) “Barometer of Sustainability” and consisting of not sustainable, potentially not sustainable, intermediate, potentially sustainable and...
sustainable was used for the survey method (questionnaire). Corresponding code numbers of one to five were used, and the mean score of each variable under the three factors (environmental, economic, social) was computed to determine the relative level (low, moderate, high) of difference of perceived sustainability.

For the level of perceived sustainability of the environmental, economic and social factors, cut-off scores were based on the aggregate raw score of the variables under each factor (see Table 1). IADP overall sustainability was based on the combined aggregate raw scores of the environmental, economic and social factors. The raw mean scores served as the basis for deciding the IADP level of environmental, economic, social and overall sustainability.

Results and Discussion

IADP Environmental Sustainability

IADP environmental sustainability was perceived high by the respondents (see Table). Six environmentally related variables were perceived definitely “sustainable,” and two, “potentially sustainable.” The highest perceived sustainability was for “good rainfall pattern” in the project area.

IADP perceived environmental sustainability was supported by the IADP observed environmental sustainability and statistical figures (available upon request) as evidenced through: 1) Soil erosion prevention through proper site selection, terracing of slopes, planting of cover crops and felling of trees; 2) Fertile soil maintenance through sustainable agricultural practices such as intercropping, organic farming, and livestock integration with crops; 3) Water quality and quantity maintenance due to excellent drainage systems, dam construction, pond rotation (for fishery cropping), and the project area still forested (60% of the total land area); 4) Air quality maintenance owing to the agro-forestry project type, maintained forest areas, and pollution controlled industrialization in the project area, for example, air particulate concentration in the project area is well below the Malaysian recommended guidelines of 150ug/m³; 5) Temperature patterns, with annual mean temperature of 27°C and a daily fluctuation ranging from 20°C to 30°C, have not adversely changed from the time IADP was introduced in the project area; 6) Good rainfall patterns still prevailing throughout the year with depth (soil water retention) far exceeding the evapotranspiration rates needed for good crop growth and yield; 7) Diversity of waterliving things, like fish, in the water sources (river, creek) owing to non-contamination of the water sources with toxic elements; 8) Ecosystem balance and biodiversity due to the good state of the environment, as previously discussed, and the existence of wide ranging forested land.

IADP Economic Sustainability

IADP economic sustainability was also perceived “high” by the respondents (see Table). The highest perceived sustainability was for “improved living conditions.” This IADP perceived economic sustainability was supported by the observed economic sustainability and statistical figures (available upon request) taken from expert agencies as follows: 1) Increased farm production of oil palm, rubber, cocoa, livestock, fishery and an expanded project area; 2) Increased monthly income from RM 366 (before IADP) to RM 453 stated in the IADP reports in 1994. The 1998 study showed an even higher increase (RM549.2), which is above Malaysia’s poverty row for a rural community of RM500 in that year (IADP reports, 1998); 3) Improved education of beneficiaries’ children through adequacy of educational facilities in the project area that exceeds the national standard of Malaysia and improvement in the educational achievement of the beneficiaries’ children, evidenced by their high performance in the “Achievement Examination for Elementary School;” 4) Improved nutritional status of the families exemplified by the elimination of severe malnutrition (10% of the children before IADP)
Table 1

**IADP Perceived Environmental, Economic, Social and Overall Sustainability (n=111)**

<table>
<thead>
<tr>
<th>IADP Level of Sustainability</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Sustainability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate (20.1-28.0)</td>
<td>12</td>
<td>10.8</td>
</tr>
<tr>
<td>High (≥ 28.1)</td>
<td>99</td>
<td>89.2</td>
</tr>
<tr>
<td>Mean</td>
<td>32.0</td>
<td>Min</td>
</tr>
<tr>
<td>SD</td>
<td>3.1</td>
<td>Max.</td>
</tr>
<tr>
<td><strong>Economic Sustainability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 20.0)</td>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>Moderate (20.1-28.0)</td>
<td>52</td>
<td>46.8</td>
</tr>
<tr>
<td>High (≥ 28.1)</td>
<td>56</td>
<td>50.5</td>
</tr>
<tr>
<td>Mean</td>
<td>28.7</td>
<td>Min.</td>
</tr>
<tr>
<td>SD</td>
<td>3.9</td>
<td>Max.</td>
</tr>
<tr>
<td><strong>Social Sustainability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Individual Beneficiaries Participation and Transformation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 32.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate (32.51-45.5)</td>
<td>23</td>
<td>20.7</td>
</tr>
<tr>
<td>High (≥ 45.51)</td>
<td>88</td>
<td>79.3</td>
</tr>
<tr>
<td>Mean</td>
<td>49.7</td>
<td>Min.</td>
</tr>
<tr>
<td>SD</td>
<td>5.2</td>
<td>Max.</td>
</tr>
<tr>
<td>2. Community Building and Organizational Transformation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 22.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate (22.51-31.5)</td>
<td>20</td>
<td>18.0</td>
</tr>
<tr>
<td>High (≥ 31.5)</td>
<td>91</td>
<td>82.0</td>
</tr>
<tr>
<td>Mean</td>
<td>34.9</td>
<td>Min.</td>
</tr>
<tr>
<td>SD</td>
<td>3.9</td>
<td>Max.</td>
</tr>
<tr>
<td>3. Overall Social Sustainability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 55)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate (55.1-77.0)</td>
<td>44</td>
<td>39.6</td>
</tr>
<tr>
<td>High (≥ 77.1)</td>
<td>67</td>
<td>60.4</td>
</tr>
<tr>
<td>Mean</td>
<td>80.6</td>
<td>Min.</td>
</tr>
<tr>
<td>SD</td>
<td>7.8</td>
<td>Max.</td>
</tr>
<tr>
<td><strong>Overall IADP Sustainability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 95)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate (9.1-133)</td>
<td>26</td>
<td>23.4</td>
</tr>
<tr>
<td>High (≥ 133)</td>
<td>85</td>
<td>76.6</td>
</tr>
<tr>
<td>Mean</td>
<td>141.5</td>
<td>Min.</td>
</tr>
<tr>
<td>SD</td>
<td>11.8</td>
<td>Max.</td>
</tr>
</tbody>
</table>
in the villages from year 1993 to 1997; 5) Improved health conditions demonstrated by excellent available health facilities in the project area (comparable to the Malaysia’s national standard), and a significant decrease in the incidence of stillbirth (10 cases) and infant mortality (4 cases) from year 1993 to 1997 compared to 35 cases and 15 cases respectively before IADP; 6) Improved economic mobility of the beneficiaries owing to improved roads from farm to villages, villages to town, and an increased number of vehicles (bicycles, 200; motorcycle, 273; motor car, 103; van/lorry, 15) acquired by the beneficiaries compared to before IADP (bicycle, 86; motorcycle, 111; motorcar, 4; and no van or lorry); 7) Improved access to basic needs and resources as revealed by statistical figures (87% of the households have electricity; 77% with pipe water and 63% with telephone at home compared to before IADP (61% with electricity; 51% with pipe water and 10% with telephone at home); and 8) Improved living conditions of the beneficiaries as an aggregate effect of the foregoing discussed variables, and as evidenced by the increased number of purchased home appliances (refrigerator, 194; television, 212; video recorder, 132; gas stove, 164, radio cassette, 165) by beneficiaries over the years compared to before IADP (refrigerator, 60; television, 33; video recorder, 1; gas stove, 89; radio cassette, 65).

IADP Social Sustainability

IADP perceived social sustainability (combined scores of individual beneficiary's participation and transformation, and community building and organizational transformation) was “high” (see Table). This was evidenced by: 1) two of the 13 variables of individual beneficiary's participation and transformation, “sustainable agriculture practice” and “good or profitable farming practice,” were rated as definitely “sustainable” and the remainder “potentially sustainable” and 2) two of the 9 variables of community building and organizational transformation, “better organizational practice, allows openness among members,” and “better organizational management, achievement oriented”, were rated as definitely “sustainable” while the remainder were rated “potentially sustainable.”

IADP observed individual beneficiaries participation and transformation supported the findings on the IADP perceived sustainability as demonstrated in the following: 1) Beneficiaries active participation in various village, district and state level seminars, training and exposure; field trips enabled them to acquire knowledge and skills necessary to become development-oriented (transformed) farmers; (2) Holistic and critical thinking by the beneficiaries in which they view life as interdependent was shown through expressed concern for success of group projects as well as concern for co-beneficiaries' projects; 3) Awareness of sustainability principles and practice was demonstrated by beneficiaries through good project management (terracing of steeper area, for example); 4) Good leadership and management capability was demonstrated by individual and group beneficiaries' initiative to source out needed materials and supplies for their projects; 5) Farming diversification (indicative of knowledge and values transformation) was shown in the integration of other crops with major crops and livestock with major permanent crops; 6) Collaboration among individual beneficiaries was manifested through collective efforts in purchasing materials and supplies, as well as in the confrontation of issues and problems affecting their projects; 7) Changes in farming attitudes were discerned through practices of sustainable agriculture discussed earlier; 8) Development awareness was shown in the beneficiaries understanding of sustainable development, for example, the importance of forests in the environment; 9) Participation in issues and problem discussions; 10) Assertiveness in sharing ideas and opinions; 11) Involvement in decision making; 12) Diverse participation among project members; and 13) Sustainable management and profitable farming practices.

IADP observed community building and organizational transformation supports the IADP perceived sustainability as evidenced through the following practices: 1) Collaboration among critical actors (village leaders, teachers,
professional and religious leaders) in activities concerning the entire village affair, for example, and as already mentioned, sports; 2) Collaboration among existing village organizations demonstrated in the “Village Development and Security Council” (VDSC) set-up that embodies and co-ordinates all village organizations and committees under its umbrella; 3) Participatory project management exemplified in the members active participation in group projects meetings and maintenance; 4) Good leadership in the villages and among existing organizations as demonstrated by the acceptability of all projects’ leaders to members and the villages’ chairmen to their constituents; 5) Good organizational structure shown in the “Village Development and Security Council” (VDSC) that embraces all matters concerning the villages’ development; 6) Good management observed through participatory project management among leaders and members; 7) Organizational responsiveness to members’ needs; 8) Organizational awareness of project sustainability; and 9) Openness among members during meetings to voice opinions, suggestions and problems.

The findings of the study on the IADP environmental, economic, social and overall sustainability attested to Prescott-Allen’s (1999) notion that indicators for assessing the state of people and the environment and progress toward sustainable development must be combined because they encompass a wide range of issues. The issues may include health, population, basic needs, income, employment, business successes, the economy, education, soil erosion, water quality, air quality, protected areas, diversity, food supply, resource usage and so on.

Each of the indicators can show what is happening to the issue it represents. However, unless the indicators are organized and combined in a coherent way, the signals they give will be confusing (Prescott-Allen, 1999). For example, there are 8 indicators for environmental sustainability, some show good performance, others bad, and some are intermediate (in between). How can a decision be made on the state or level of environmental sustainability? The answer is to combine the indicators. If not, the indicators just produce a lot of noise, a jumbled stream of data but no clear message. By combining indicators, we can make them do more than tell us about the particular issues they represent. They can show whether a project, like IADP Phase I, is progressing toward sustainability or improving the well-being of the people and the ecosystem together (Prescott-Allen, 1999).

Conclusion

The perceived and observed findings, supported by statistical figures taken from expert agencies, concluded that Pahang Barat Integrated Agricultural Development Project Phase I level of environmental, economic and social sustainability are all “high.” Further, the integrated effect of these three factors made the entire IADP sustainability also “high.”

Implication

The theoretical implication of the results revealed that the interrelatedness of the environment, economic and social functions in promoting project sustainability cannot be overruled, hence it makes it difficult to take one out of the system because the human sub-system, composed of the economic and social aspects, is a part of the large system that includes the environment. Further, the environmental, economic and social forces of development are integrated in affecting overall sustainability of an agricultural project like the IADP. Prescott-Allen’s (1995, in Trzyna edition, 1995; Internet, 1999) model called “Egg of Sustainability” and “Barometer of Sustainability” approach to assessing project sustainability that integrates the environmental, economic and social factors proved relevant in this study. Hodge (1993, 1995) and Robinson (1991, cited in Duffy et al., 1998) deliver ideas similar to Prescott-Allen’s.

Further, understanding of the context in which “sustainability,” “sustainable,” or “sustainable development” is viewed is important. Sustainability is a process that should be understood in terms of its implicative meaning related to the project’s context. Shearman’s (1990) view of the contextual meaning of
“sustainability” applies in this case. Another is the choice of indicators in assessing project sustainability. O’Connor (1995, in Trzyna edition, 1995) pointed out the necessity to reflect upon the interface between environmental, economic and social issues of project sustainability and the symbiosis between statistics and models. The foregoing theoretical implications were reflected in the study’s theoretical framework.

References


The Qualification of Teaching Effectiveness Research For International Students

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Abstract

Using a focus group approach with international graduate students at The University of Arizona College of Agriculture in the autumn semester of 1998, this study provided cultural qualification to commonly identified variables associated with teaching effectiveness in the American culture. By involving international graduate students in an in-depth discussion of teaching variables, it was found that, in a general sense, the variables chosen for the study are important in other cultures as well. However, the international students in the study preferred more cooperative and less competitive environments. In addition, they preferred a different environment that allows for more interaction and reflection. These findings provide a frame of reference for professors to make the learning experiences for all students richer and more productive.

Introduction:

Research on teaching effectiveness has been going on for many years, during which many teaching variables related to student achievement have repeatedly been identified. Rosenshine and Furst (1971) identified clarity, variability, enthusiasm, task oriented and/or businesslike behaviors, student opportunity to learn criterion material, use of student ideas and general indirectiveness, criticism (negatively correlated), use of structuring comments, types of questions, probing, and level of difficulty of instruction as variables commonly associated to learning. Duncan and Biddle (1974) found similar traits in their review but added that appropriate praise and positive reinforcement were also found to be positively correlated to student achievement. Over the past two decades, research efforts on teaching effectiveness at various levels of instruction have repeatedly verified the basic findings of Rosenshine and Furst, and Duncan and Biddle (Beidler, 1993; Bettencourt, 1983; Croker, 1996; Emmer, 1987; Miller, 1996; Murphy, 1994; Rosenshine, 1995; Streeter, 1986).

In college classrooms, intercultural diversity presents a challenge to the teaching/learning process. The question is whether or not the validated variables function across international boundaries. Generally, American modes of teaching/learning value linear thinking, individualism, competitive processes and a
preference for noetic ways of knowing (Bennett, 1998; Lyons, 1994). Other cultures often have preferred ways of learning that value interdependence, intimate collective learning communities, and contextual ways of knowing. Thus, greater value is placed upon engaging the whole learner in a more affective, tactile, relational, experiential as well as intellectual fashion. The premise behind a more inclusive classroom is not to value one mode of teaching/learning more than another, but to teach in multiple modes to create a learning environment that engages all learners in a holistic way.

**Purpose:**

The purpose of this study was to qualify ten validated teacher traits for University of Arizona international students in the College of Agriculture by use of a focus group. The project was driven by the following questions:

1. How do international graduate students relate to the most effective teaching variables identified in the American culture?
2. What can be done to “qualify” the identified variables for international graduate students?

In other words, this project adds a cultural dimension to the teaching effectiveness research base by offering special insights and parameters for teaching in intercultural classrooms.

**Methods and Data Sources:**

A focus group (Patton, 1990) of ten graduate students attending The University of Arizona College of Agriculture from Tunisia, Mexico, Brazil, Guyana, Germany, Japan and the Czech Republic during the autumn semester of 1998, was asked to discuss their perceptions of ten identified variables. Students were recruited for the project by contacting the departments in the college and seeking their support of the study. Because the team was doing work focused primarily on international graduate students, they became the focus group for the study. Patton (1990) indicates that the object of a focus group is to “...get high-quality data in a social context where people can consider their own views in context of the views of others.” The variables used for the study, which came primarily from the work of Rosenshine and Furst (1971), and Duncan and Biddle (1974), were:

1. Clarity: Cognitive clarity of a teacher’s presentation, as indicated by the organization of the teacher, the way the material is structured and organized, the metaphors and anecdotes used, and the language used by the teacher.
2. Variability: Teachers’ use of a variety of instructional materials, teaching devices, types of tests, level of discourse, and types of student tasks.
3. Enthusiasm: Teachers’ enthusiasm, as indicated by movement, gestures, voice inflections; and teacher questions, especially those calling for interpretation of facts.
4. Task-Oriented and/or Businesslike Behaviors: Degree to which a teacher is task-oriented, achievement-oriented, and/or businesslike, as indicated by the way the teacher prepares for and conducts classroom sessions, encourages students to work hard, and has a need to “get something accomplished.” In other words, teacher behaviors that are all driven by the use of time.
5. Student Opportunity to Learn Criterion Material: Students are “let in on” the expectations of the teacher and may even be involved in determining the actual outcome measures.
6. Appropriate Praise: Praise that is earned (related to the expected outcomes), specific, timely, sincere, and in proportion to the action being praised.
7. Positive Reinforcement: Techniques used to reward or recognize behaviors that are congruent with teacher expectations, such as positive comments, nonverbal cues, and written notes.
8. Criticism (negatively correlated to student achievement): Comments about performance that focus upon “what is not correct.”

9. Use of Structuring Comments: Comments designed to provide an overview or a cognitive scaffolding for what is to happen or has happened, reviewing or summarizing statements, induction (anticipatory) set, and coaching.

10. Types of Questions: Questions that provide a variety of cognitive level responses including what, where, why and how, and questioning techniques, such as reciprocation, redirection, and probing.

Each variable was presented individually to the members of the focus group. They were defined and described for the participants by the research facilitator. The members of the group were then asked to discuss the impact of the variables and describe how each affected them personally. They were also asked to offer suggestions on how each variable might be adjusted, if necessary, to make it sensitive to them and people in their respective cultures.

The researchers recognized that often, greater differences can exist within as much as between cultures. They also noted that “international” is a homogenous term for a wide range of culturally diverse groups. None the less, the individual and collective experiences of the participants in locations and cultures other than the U.S. were determined to be a good basis for the make-up of the focus group.

Because it can be difficult to take notes during a focus group meeting while also facilitating the discussion (Patton 1990), notes were taken independently by the four researchers involved with this study during the course of the two hour discussion. The researchers then “pooled” their findings and performed a content analysis that focused upon the repeated use of specific descriptors and the development of themes.

In general terms, the teaching variables identified in the literature and used for this study were found to be as important to international graduate students as they were to American students. However, the study revealed several themes that represent polarities existing between the American culture and other cultures.

1. The international graduate students indicated that the variables clarity, variability, enthusiasm, appropriate praise, positive reinforcement, criticism (negatively correlated to student achievement) and structuring comments by teachers were important to their learning.

2. International students noted that they regard the high level of task orientation as overwhelming. It is perceived as unnecessary busy work. They generally preferred a more unstructured environment that they described as less task (not less content) oriented with more time “to be” and “to reflect.” Task orientation, as perceived by Americans, is generally applied, mostly structured in a linear fashion with emphasis upon repetition and routinization with intent toward institutionalization (Bennett, 1998). For the learner this means creating skills and harnessing knowledge for the intent of building effective environments/organizations.

Mastering a skill and providing results are highly equated with professionalism, and valued for their serious nature and business like manner. Conversely, the international students are often from cultures that value “being.” In such cultures, people are rewarded for articulating personal and historical philosophy. Contextual learning and knowing is viewed as a far more mature and intelligent way of interacting. Developing and maintaining long-term relationships are honored above individual goals and outcomes. In addition, reflecting is considered as essential to any serious endeavor.

Results and Discussion:
3. International students enjoyed the Socratic method often demonstrated by American faculty members. They voiced a preference toward participatory learning. This was noted as not being given the answers, but rather working jointly toward solutions with faculty member and peers.

4. International students noted the value of American modes of teaching. However, their own ways of knowing move beyond the linear modes common to American classrooms. Contextual ways of knowing are generally preferred and have equal, if not more value, to international students than linear and direct communication. Context, simply defined, is the frame of reference or perspective from which student understanding and/or learning are derived.

   Americans tend toward low context while many other cultures tend toward receiving and processing information in high context (Hall, 1981). Knowledge, then, may be absorbed via modes that relate to context and not just to content and/or conclusion. Thus, for international students, knowledge may be transmuted to a wider range of possibilities by opening and engaging the senses, such as the affective, tactile, spiritual, and philosophical.

   Generally, American instructors are trained to deliver information in a lecture format where meaning is mostly transmuted via the spoken word and conditioned by student requests to “please don’t beat around the bush.” It may be a new and uncommon experience for the instructor to learn to recognize and value that international students are making tremendous internal meaning from very subtle behaviors. For example, American instructors’ posture, appearance, inflection of voice, eye contact, informality, use of space and a multitude of other internal contextual references are commonly discarded in low context by the instructors as irrelevant to the direct meaning of the spoken word.

   Faculty members who are interested in increasing international student participation in the classroom may want to create an environment that is conducive to contextual learning. This may be accomplished by infusing kinetic, tactile, and visual examples, as well as teaching with metaphor. Simply stated, faculty members can enhance any lecture (and increase variability) by moving beyond conveying meaning with words alone. Examples include telling stories, providing examples relevant to the learners, introducing objects, artifacts, and visual imagery, having students practice new concepts with movement, touch, and using multimedia.

5. International students generally preferred the use of peer and collective learning modes such as the creation of a learning community where students share resources and work jointly on projects. The American cultural approach, on the other hand, tends to be highly individualistic and often competitive. American students are resistant to group projects where grades are administered collectively. Consequently, faculty members often opt for instructional designs deplete of cooperative learning methods. Students often graduate without the essential communication, participation, and perception skills necessary to work successfully on joint projects.

The presence of international students in the classroom offers faculty members an opportunity to pair international and domestic students in the forming of learning communities where an environment of cooperative learning is experienced and perceived in multiple contexts. These created learning environments, if constructed carefully by the faculty members, provide students with the opportunity to experience “difference” in a safe environment. The students can grapple with the multiple ways of perceiving and knowing, while creating a preferred learning environment for international students. Current cooperative learning techniques, as espoused by Angelo (1998) and Johnson and Johnson (1993),
provide a wealth of experience and expertise to draw upon when incorporating cooperative learning into the classroom.

6. Faculty roles and responsibilities were viewed by international students in vast and varying ways from being the absolute expert to being a facilitator of the learning process. The differing views appeared to be based upon cultural influence and personal experiences.

It is important for American faculty members to realize and acknowledge that international student attitudes toward them can be quite different from those of American students. At times, when teaching methods may be problematic for some international students, it can be difficult for them to bring it to their professors’ attention, especially in class, for they do not wish to appear rude or improper. It is thus imperative, in order for international students to feel comfortable, that they have an opportunity to voice concerns to their professors, and that American faculty members are approachable. This means that they need to be both easily accessible and readily available for public or private consultation, while still being able to maintain professional distance. For example, professors who announce to the students that they are welcome to come by even if it isn’t during posted office hours, and/or that they may make contact via e-mail or telephone if they need anything, are particularly welcome “invitations” for international graduate students.

Educational Implications:

While the general research findings related to teaching effectiveness are important for international graduate students, the polarities that surfaced during this study offer unique insights to making the teaching variables more effective for them. In reviewing these insights, it becomes clear that the lessons learned suggest other approaches that would be good strategies for all students. The already solid indicators of teaching effectiveness can be made even more powerful by enhancing them with strategies preferred by international students. However, with a culture that emphasizes linear approaches focused upon individualized efforts driven by task orientation and competition, achieving acceptance of the needed adjustments in instruction by professors will be a difficult issue to resolve.

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Challenging what is, achieving what could be

Quality indicators used to recognize and reward extension professionals should be viewed in the context of the existing extension organization as well as that organization’s vision of what it wants to become. Extension leaders and professionals must be aware that quality will be judged not solely by the outcomes achieved, but also by the process that is followed in working to achieve organizational goals. It becomes important to measure and document not only what is accomplished, but also the substance of the extension professional’s contribution to the activity completed. Involvement of users of extension in evaluating the success of the organization, its people and contributions fits the Deming model of TQM which integrates evaluation into the ongoing process.

This article strives to provide a framework that describes outreach and engagement as they will relate to extension and advisory services in the new millennium. To begin framing this discussion, a vision of a high performing extension organization will be sketched. A brief discussion and description of outreach and engagement is offered and the concept of quality indicators to assess process and outcome quality is introduced.

The 21st century organization – high performing

This sketch of a high performing organization is based on research conducted by Ludwig while developing her 1993 paper for the European Seminar on Extension Education and enlightened by the writing and discussion of a broad range of educators and extension professionals over the past six years. (Mustian, 1999; Levander, 2000; Rivera, 2000). It strives to project those factors which are common to extension organizations across the globe.

To become high performing, the structure of extension organizations will become more fluid rather than continuing in a traditional hierarchical structure. Reducing the number of layers in the administrative hierarchy will allow for quicker response times in a rapidly changing world. Core activities will be accomplished through project teams and contracting with individuals and other organizations to perform key operational and program activities. The Extension organization will be staffed by a combination of specialists and generalists who have the necessary knowledge and technology to quickly adapt. A spirit of innovation and entrepreneurship will be fostered. A working knowledge of the global marketplace, global issues relating to the environment, food supply and understanding other cultures will become increasingly important in educating and assisting local clientele. High performing extension organizations will place a priority on internal learning and development of their professionals as well as outreach to clientele. Investment in human capital to prepare technically competent and inspired leaders and extension educators should not be overlooked. Collaborative efforts with other agencies and experts minimize duplication of services and address issues which because of their complexity and breadth extend beyond the ability of any one organization.
Extension/Advisory Services will become even more externally oriented organizations, developing strategies to identify clientele needs as the audience continues to change location, characteristics, demographics and information-seeking habits. Some of these clients may live in other parts of the world. The advent of distance education and impact of communication technology provides challenges and opportunities for Extension organizations to offer programming to an expanding audience.

Extension in its work for the public good will focus upon its ability to make a greater impact on problems and opportunities brought about by changes in the global economy, the environment, family structures, demographics, values and resources. Communications for technology transfer or to ensure compliance with policies will be replaced by efforts to foster interaction, negotiation and collective action. For example, in eastern European countries, transformation of collective agricultures is occurring. In western European countries, the armies of public extension workers employed by ministries of agriculture and farmer’s organizations have disappeared or been privatized as emphasis shifted from efficient production of commodities to multifunction users for greenspace.

Outreach and engagement clarified

In the United States, with its land grant education system, discussion about extension using the terms outreach and engagement is beginning. The concept warrants consideration even though most extension professionals across the globe are not university faculty, but are often employed by advisory services, farmers’ organizations or the government. University faculty who educate future professionals can reflect on the measures of success they instill in students and the emphasis placed on evaluating the quality of work performed. Faculty can also examine their own contributions or potential for university outreach and engagement activities.

Outreach/engagement as discussed in this article can be viewed as: meaningful and mutually beneficial collaboration with partners in education, business, public, and social service. It represents that aspect of teaching that enables learning beyond the campus walls, that aspect of research that makes what we discover useful beyond the academic community, and that aspect of service that directly benefits the public. (President’s Council for Outreach and Engagement, 1998.)

The diagram shown in Figure 1 and based on one developed by Bruns (1998) describes the functions of outreach and engagement. Bruns (1998) indicates two continuums are used in the matrix to differentiate outreach and engagement. One continuum, the vertical on the chart, relates to the intellectual challenge of the activity. The horizontal continuum is based on relationship. If an activity can be plotted on both these continuums it would represent authentic outreach or engagement. The location on the matrix helps in determining whether the activity is outreach or engagement.

Outreach activities are characterized by a relationship that appears to be one-way with the university faculty member/extension professional addressing an issue and giving to the community or people involved. For agricultural extension, the role of professional as a source of technical information to communicate forms is an example. Outreach activities are more likely to represent a routine challenge to the professional. Engagement happens as the professional begins working with people in the community related to the issue in a symbiotic way. With engagement, the professional brings back to the extension organization or university what is learned and allows it to influence his/her future work and enrich the work of colleagues. This learning impacts research agendas, courses taught or discussions with others on campus. It certainly should have an impact on the future extension programming offered or curriculum developed. Engagement offers a higher level of intellectual demand and challenge and enables the extension professional to function more effectively in a change agent role.
Both outreach and engagement are important and are used to meet different situational needs. Technical consulting services consistent with the mission of the organization for many extension systems are the main focus of extension activities. Technical services include routinized services ranging from soil testing, to environmental assessments, to dissemination of informational materials or conducting training sessions. Lynton (1996, p. 19) offers the following examples of engagement activities that require the best in professional expertise: providing technical assistance to a small enterprise, developing new approaches to science curriculum of local schools, analyzing alternative land use policies for local government, and giving organizational advice to community groups.

Quality indicators: Criteria for high performing extension professionals

For outreach and engagement to be valued as contributing to a high performing organization, it is necessary to have clear criteria for assessing extension workers’ accomplishments and contributions to organizational goals. Figure 2, at the conclusion of the article, graphically represents the concepts being presented. Mustian (1999) in his paper on the changing evaluation paradigms for agricultural and extension education emphasizes the need for extension professionals to focus on program models where outcomes on the basic function and emphasis is placed upon results.

Miller and Sandman (1999) address scholarship for agricultural and extension educators who make up the AIAEE organization citing works by Bryer (1990), Rice and Richlin (1993) and describing for overlapping dimensions of discovery, application, integration and teaching. Glassick, Huber and Maeroff (1997) conducted research defining these dimensions of scholarship. Six standards were identified and are proposed as forming the basis for extension's quality indicators. They include: clear goals, adequate preparation, appropriate methods,
significant results, effective communication of results and reflective critique. A brief description is provided below along with examples.

**Clear Goals** - articulated and integrating the needs of the target audience with the expertise of the professional and mission of the organization:

- Illustration of how goals are related to needs assessment
- Documentation of how goals for outreach/engagement relate to the extension professional's expertise and/or responsibilities
- Clarification of how outreach/engagement relates to the mission and vision of the unit
- Ability to evaluate social, economic and environmental impacts or outcomes

**Adequate Preparation** - evidence that the person doing the outreach/engagement has appropriate training and/or knowledge to be involved with the effort

- Use of current theory, research, literature or technology is evident
- Needed resources are available or are obtained
- Area of focus identified
- Grants, contracts or donations to support outreach/engagement
- Participation in curriculum development and/or teaching teams
- Professional awards or recognition for contributions
- Implementation of new curriculum, requests to teach in area of expertise

**Appropriate Methods** - selection, development and use of appropriate approaches to achieve or exceed the established goals.

- Samples of creative methods or materials developed to conduct outreach/engagement
- Narrative description about how the engagement methods were modified to meet changing program delivery circumstances
- Peer evaluation of outreach/engagement teaching
- Letters of evaluation from clientele

**Significant Results** - efforts will lead to significant activities and outcomes. Impacts on the intended audience and/or knowledge gained for the organization will be evident. Outcomes gained as well as activities completed are clear.

- Documentation of impact on intended audience
- Documentation of new methods (publications, video presentations, computer software), teaching
- Results show depth and impact in areas of expertise

Effective communication of results or knowledge gained through the effort are communicated to others, both stakeholders and colleagues. Through this communication extension professionals learn from critique.

- Recognition as an expert beyond geographic area of responsibility.
- Peer reviewed written materials and oral presentations about significant results
- Unpublished reports and papers
- Documentation of how program materials or design is being used by others
- Documentation of regular communication with stakeholders

**Reflective Critique** - self-critique by the professional. The knowledge gained through reflection can then be used in development of future programs.

- Documentation of how activities impact future extension work
- Documentation of how outreach/engagement leads to development of a comprehensive program to address a stakeholder need
- Documentation of role of outside partners in reflective critique
- Documentation shows ongoing evaluation of outreach/engagement efforts to provide
As we move toward 2010, those involved in Extension outreach and engagement cannot forget the process of change that is followed in accomplishing organizational goals. Lyton's (1996) work forms the basis for the process skills identified below:

**Diagnosis** - through analysis of the situation and identification of unique aspects a definition of the problem can be identified and availability of sufficient resources identified.

- Personal narratives on steps taken and rationale
- Trend statements describing magnitude of the issue
- Survey or needs assessment instruments and results
- Summary of financial and other resource contributions
- Calculation of opportunity cost in terms of resources (i.e. people, projects, revenues)
- Evidence of creative use of multiple types and sources or resources

**Design** - setting of clear objectives, gaining agreement by stakeholders that the goals are valuable and choosing the most appropriate approach. Choice of approach requires recognition and accommodations for a variety of learning styles, educational levels or differences in ways of decision making.

- Describe conclusions drawn from diagnosis of the situation
- Identify and describe opportunity to change the situation
- Provide information about nature and extent of clientele involvement in the process
- Planning documents, initial time tables and instructions to participants
- Work samples
- Feedback on the clarity of the project and objectives

**Delivery** - begins with the implementation of programs and projects, but also includes monitoring and reflecting on progress achieved. Describing unexpected developments and the responses triggered and assessing learning outcomes by participants, colleagues and communities is another stage in the delivery process. Finally, delivery should include development of mechanisms for sustainability.

- Number of partners or collaborative arrangements
- Identification, participation and retention of all stakeholders
- Examples of formative evaluations, minutes of meetings
- Letters, testimonials, media coverage
- Modified project plans and schedules
- Interim reports or committee updates

**Outcomes Gained** - Outcomes include meeting the specific goals of the project and determining stakeholder satisfaction: Were the results valuable? Did participants apply the knowledge and could they successfully deal with similar problems in the future?

- Personal assessment of impact on participants
- Impact on public policy, commercial, societal or professional value
- The individual's work or product
- Activities in the local Extension unit
- Description of how new insights were shared and disseminated to colleagues
- Any final reports prepared Opportunities for new collaborations
- Revenue generated or increased support for outreach
- Co-authored reports and presentations
- Activities and processes institutionalized
- Networks activated, cross-disciplinary linkages activated

**Reflection and Correction** - Obtaining new insights from the project that enhance the extension professional's capabilities in teaching or creative efforts and contribute to the mission of extension are integral parts of the process. Making necessary corrections is a part of the process of assessing outcomes for continuing impact. Drawing appropriate inferences to inform future work and sharing with colleagues occurs.
• Specific discussion of new insights gained
• Assessments of the work by clientele, colleagues and experts in the field
• Adjustments in methods or focus
• Identification of future areas for study
• Non-productive practices discontinued
• Empowerment of others
• Catalyst for changes

Look from the inside out

In studying Figure 2, visualize a multi-dimensional and dynamic model. Look first at the center core. Here the reviewer is reminded of the goal of achieving a high performing Extension organization in the 21st century. Process skills of: diagnosis, design, delivery, outcomes gained, reflections and corrections are the building blocks leading to outcomes judged to be successful by participants, educators and observers. The dynamics of the process become complex when the multiple roles and assignments of extension professionals are considered. The six standards shown in the outer circle indicate quality indicators of a high performing extension professional. These are impacted by the process skills. Viewed as three over-riding factors which influence all aspects are the environmental factors of changing societal forces, political climate and complexity of problems. Changing societal forces includes technological advances, changing demographics and the impact of business, government and the international economy. Political climate refers to the responsibility of extension workers to provide satisfactory reasons and explanations for activities to funders, collaborators, stakeholders and society. Involvement of potential users in the needs assessment and planning processes helps extension professionals focus on the external environment and identify emerging problems. Complexity of problems points to the need for extension to develop interdisciplinary teams to address the issues. The need for applied research will increase as will the need for networking within the extension organization to promote interdisciplinary efforts and a flexible method for independent units to develop and maintain linkages.

Figure 2. Quality Indicators of a High Performing Extension Organization
This paper has tried to provide a framework that describes a high performing extension organization in the new millennium. It would not be complete without a discussion of environmental factors which influence and impact extension organizations across the globe.

Documenting the quality of Extension work will be essential in high performing extension organizations in the new millennium. The challenge remaining for each reader is how do you visualize your country’s extension organization in 2010 and beyond and what can you do to assist in the change process?

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Nominal Group Technique: Human Resource Development Competencies for the Swaziland Sugar Industry

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Abstract

The study identified current and projected Human Resource Development (HRD) competencies. The population was all HRD managers (in agriculture, training, personnel, human relations/resources) in the Swaziland sugar industry. The methodology for data collection and analysis was the Nominal Group Technique (NGT). Major findings were development of a profile of 79 competencies in 13 competency areas/categories both current and projected. Potential areas of collaboration between the sugar industry and educational enterprise(s) in training and research were also identified. It was concluded that competencies identified resembled those in developed economies. Further, sugar industry HRD managers need to be retrained/graded in selected competency areas, particularly in the labor management, short- and long-term planning, and interactive skills areas.

Introduction and Context

Human Resource Development (HRD) professionals around the world need the competencies necessary to meet the challenges of working in a global environment. A rapidly changing economic environment is calling for new HRD competencies including creativity, innovation, ability to lead change, facilitating adaptability, resolving group conflicts; and unlocking human diversity in a contemporary team-based work environment. "A fundamental managerial problem is to develop human competence at work in a way that enables an organization to remain viable" (Sandburg, 2000, p. 9), thus the need for efficient ways to manage training and development in organizations. Subsequently, more and more, training and development are becoming crucial elements in the corporate world as firms begin to realize that employees are resources who must be maintained and developed; and this investment in human resources is just as important as the investment in physical resources.

Human resource decisions influence organizational performance; they either improve efficiency or contribute to total revenue growth. "Human resources, both as labor and as a business function, has traditionally been viewed as a cost to be minimized and a potential source of efficiency gains" (Becker & Gerhart, 1996 p. 780). Reductions in employment continue to be a major aspect of strategies in restructuring operations and reducing labor costs that remain the single largest operating costs in many organizations (p. 780). This remains the one single challenge to human resource managers.

The changes taking place in the new South Africa have given rise to a situation where neighboring countries, like Swaziland, have had to revisit their human resource development strategies in the corporate sector. Prior to 1994, short-term training of human resource managers for the Swaziland sugar industry predominantly took place in South African institutions. However, the need to provide managerial training to black South Africans has minimized opportunities for the corporate sector in the neighboring countries, like Swaziland, to send their HRD managers to South African institutions. Affirmative action in South Africa is expected to include the training needed to address educational and skill imbalances" between Blacks and Whites (McFarlin, Coster & Mogale-Pretorius, 1999, p. 66). South African companies cannot put unqualified blacks in high...
positions as a reward for past atrocities committed against them during the apartheid regime.

Statement of the Problem

Studies conducted on competencies required of HRD professionals in different cultures and countries may yield different results because of cultural orientations. Competencies required of HRD professionals in the United States may differ from those required in other cultures (Marquardt & Engle, 1993, in Rothwell & Kolb, 1998). “White South African managers pushed what was largely a Third World workforce to accept First World productivity standards and value systems. Not surprisingly, Western efforts at modernization - merit pay systems, formal grievance procedures, etc. - have largely failed in African countries, mainly because local cultural values were ignored (McFarlin, Coster & Mogale-Pretorius, 1999, p. 65). A study to determine current and projected HRD competencies was considered worthwhile. For Swaziland sugar is the major foreign exchange earner with the industry being the second largest employer to government.

Purpose of the Study

The purpose of the study was to determine the current and projected HRD competencies, current and projected in the sugar industry in Swaziland. No such study had been conducted before. The following research questions guided the study:

Research Question 1: What specific human resource development competencies do HRD managers in the sugar industry need?

Research Question 2: What is the perceived importance of each of the needed human resource development competencies in the sugar industry?

Research Question 3: What are the upgrading/retraining in-service human resource development needs for serving personnel in the sugar industry?

Research Question 4: What are the top 10 emerging trends in human resource development in the sugar industry?

Research Question 5: What collaboration/partnership can be fostered between the educational enterprise(s) and the sugar industry?

Methodology

Design

The procedure employed in data collection and analysis was the Nominal Group Technique (NGT). The NGT was developed by Andre L Delberg and Andrew H. Van de Ven in 1968 (Scott & Deadrick, 1982 and Pashiardis, 1993). The NGT is a diagnostic strategy for training needs analysis designed to help generate maximum input from group members while limiting dysfunctional personal conflict within groups. One of its major features is the way it regulates group inputs and decision selections (Gepson, Martinko & Belina, 1981).

The NGT is a structured group meeting of 5 to 12 persons that follows a precise format with the facilitator as a neutral receiver of group ideas thus controlling the group process. In this way, the facilitator attempts to distance an idea from the person generating it. The leader does not contribute to the master list items (O'Neil & Jackson, 1983). A formal description of the mechanics and sequence in the NGT is as follows:

Step #1 Outlining of the NGT rationale, assumptions, and method;

Step #2 Presentation of the task nominal (research) question or issue

Step #3 Silent, individual generation of ideas

Step #4 Master list construction (round-robin listing)

Step #5 Item clarification
Step #6 Merger of overlapping or congruent items

Step #7 Evaluation and/or rank ordering of items.

Subject Selection, Data Collection, and Analysis

The NGT workshop participating managers were drawn from the Swaziland sugar industry and consisted of: (a) agriculture, training, personnel, and human relations managers from each of the three sugar mills totaling nine persons; (b) one manager from the Swaziland Sugar Association and one from the Swaziland Cane Growers Association, making a total of 11 NGT workshop participating managers. Data collection followed the seven-step sequence and procedures for conducting an NGT outlined above.

The data analysis procedure used to answer question one was the computation of frequencies of the identified competencies. To answer question two, mean and standard deviation values were computed to determine the perceived importance of each competency. The scale used was a Likert-type: 6 = most important to 1 = least important. An identification and ranking of competencies/competency areas for retraining/upgrading answered research question three. Research question four of top 10 emerging trends in the HRD was answered by ranking. Finally, question five involved ranking the areas of collaboration/partnership between educational enterprise (UNISWA) and the sugar industry.

Findings

The NGT workshop findings constituted a profile of specific HRD competencies in response to the nominal question: What human resource development competencies are needed by the Swaziland sugar industry? Research Question 1. Seventy-nine competencies were identified and categorized into thirteen competency areas (see Table 1 and 2). Competency areas identified, but without specific competencies, were: (a) General knowledge; (b) Health and safety; (c) Good memory; (d) Tolerance; (e) Project management; and (f) Recruitment.

Research Question 2. Computed frequencies and mean values of competencies and competency areas were presented in Tables 1 and 2. Overall, selected competencies with the highest rating/ranking were: (1) Communication; (2) Budgeting and control; (3) Setting performance standards; (4) Supervisory skills; (5) Confronting poor behavior; (6) Time management; and (7) Commitment to work (See Tables 1 and 2).

Research Question 3. The top 10 upgrading/retraining needs were identified as follows: a) Computer/information technology; b) Setting performance standards; c) Managing training and development; d) Facilitating; e) Consultancy management; f) Organizational development; g) Labor management; h) Recruitment; i) Handling industrial relations; and j) Employee development.

Research Question 4. In a total of 34 emerging trends in human resource development, the top 10 were (in descending order): Information technology; (b) Business management; (c) Marketing; (d) Environmental awareness; (e) Industrial relations; (f) Health and safety; (g) Labor management; (h) Counseling/social welfare; (i) Outsourcing; (j) Global markets/World marketing.
### Table 1

**HRD competencies for the Swaziland sugar industry as determined by managers**

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<tr>
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<td>Industrial relations</td>
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<td>Maintaining discipline</td>
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<td>Human psychology</td>
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<td>Performance management</td>
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<td>Employment regulating statutes</td>
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**A. Labor Management**

**B. Dynamism and Innovation**

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Table 1 (continued)

HRD competencies for the Swaziland sugar industry as determined by managers

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Rating Scale:
1<sup>st</sup> in importance: 6  
2<sup>nd</sup> in importance: 5  
3<sup>rd</sup> in importance: 4  
4<sup>th</sup> in importance: 3  
5<sup>th</sup> in importance: 2  
6<sup>th</sup> in importance: 1

*: Competency was inadvertently missed in ranking / rating

**: Competency areas identified but without specific competencies.
Table 2

HRD competency areas for the Swaziland sugar industry as determined by managers

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<td>Information Management</td>
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Rating Scale: Level of importance: 6 = most important, 5 = 2nd most important, 4 = 3rd most important, 3 = 4th most important, 2 = 5th important, 1 = least important.
Research Question 5. Fifteen possible areas of collaboration were: (a) Collaborative joint research opportunities; (b) Providing work-based training; (c) Fostering a client (industry) service provider (University of Swaziland); (d) Collaborative workshops and seminars; (e) Joint committee of the sugar industry and the University of Swaziland; (f) Small holder skills development; (g) Industry development; (h) Industry technical assistance; (i) Enhance the University of Swaziland links with other universities; (j) Industry participation in reviewing/structuring programs; (k) Periodic meetings with industry on program suitability; (l) Monitoring of graduate supplies by University of Swaziland; and (m) Open days for industry to address students on job opportunities and entry requirements.

Discussion

From the early 1990s, there has been a rise in the need to increase skills among middle managers. This has come about as a result of the advent of (a) the quality movement, (b) the dependence on teams, and the incidence of organizational flattening with the resultant elimination of middle management positions (Klagge, 1998, pp. 481).

In total, 17 skill categories/competency areas with 120 specific skills were identified by Klagge (1998). The categories (competency areas) with the highest rating were (a) Change management, (b) Navigating the organization, (c) Personal communications, (d) Conflict resolution, (e) Leadership, (f) Ethical/Legal issues.

Personal managerial competencies highlighted in Martin and Staines (1994) were (1) Managing people, (2) Breadth of awareness, (3) Sensitivity to others, (4) Drive (5) Leading by example, (6) Having a concern for performance standards, and having self-confidence (p. 30). Managerial competencies emerging from this study resemble those identified in Martin and Staines.

In a rapidly changing economic environment characterized by globalization and deregulation of markets, strategic management of the human resource is of utmost importance in an organization. To maintain a competitive edge, organizations must continually improve their performance by reducing costs, innovating products and processes, improving quality and productivity, and increasing speed to market (Becker & Gerhart, 1996). Clarke (1999) identified future demands on human resource management as follows: (1) Flexibility, (2) Cost effectiveness, (3) Continual learning (4) Developing leadership (p. 311).

Projected HRD competencies in Mainland China were noted as: (Rothwell & Kolb, 1998, p.83) : (1) Analyzing performance problems, (2) Analyzing training needs, (3) Selecting employees, (4) Benefits planning, and (5) Compensating employees.

Raising the rate of productivity growth through improved human resources development is the key to the economy's efficiency. A revitalized relationship between industry and the educational enterprise(s) is critical to the future. The key to economic development is job training and retraining. Educating and upgrading workers for jobs makes business and industry more competitive with a well-trained workforce. The linkage between industry and education is one way to improve productivity and enhance the country's competitive edge (Orr, 1990). Fifteen possible areas of collaboration between the Swaziland sugar industry and the educational enterprise (University of Swaziland) were presented by managers. The willingness of business and industry to collaborate with educational enterprise(s) was also confirmed by Rothwell and Kolb (1998) with 79% of the respondents expressing their willingness to take students for internships, and pay them.
Conclusions and Implications

The findings of this research showed an element of overlap between what HRD managers in the Swaziland sugar industry and in other countries regard as important. The data also confirmed some of the findings drawn from the literature on HRD competencies (Rothwell & Kolb, 1998). Five points are worth highlighting.

First, the NGT, as a group decision-making model, can indeed be employed in an industrial setting of a developing economy as an HRD training needs assessment strategy. HRD managers in the Swaziland sugar industry were enabled to develop and prioritize HRD competencies of importance to the industry.

Second, HRD managers emphasized the importance of labor management, dynamism and innovation, communication, organizational visioning/planning, and change management/leadership. These categories or competency areas were similar to those identified and considered important by Klagge (1998).

Third, HRD managers were of the opinion that there was need for short courses/workshops to sharpen and re-skill them for the twenty-first century global market.

Fourth, the emerging global economy demands that HRD competencies and, subsequently, policies be understood in the light of cross-cultural adaptability. HRD professionals around the world need competencies of vigor to meet the challenges of a turbulent economic order. Thus, being able to forecast HRD trends is of utmost importance.

Fifth, as training costs continue to rise and the world economy of the twenty-first century approaches fast, partnerships and collaborative training will increase. These training arrangements will become an approach to meet the training and retraining needs of business and industry and the world of work in general.

The findings of this study make a contribution to the literature in management with a perspective from a developing economy. It is indeed important that HRD professionals represent themselves by way of their body of knowledge and their perspective. A very limited body of knowledge exists in HRD with a perspective from the Southern African Development Community as an emerging regional economic entity.

References


Farmers' Control of Program Planning for a Sustainable Agriculture Program in Ontario, Canada

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Abstract

This paper considers issues related to farmers' control of program planning for nonformal extension education. Discussion is based on an anthropological study of a $10 million Canadian sustainable agriculture education program that was initiated, created, and controlled by a coalition of farm organizations, supplanting a traditional role of government. Theories of participatory extension education provide the framework for consideration of issues in the case. Political and social aspirations of farmer-planners influenced five program elements: (a) staffing, (b) content, (c) instruction, (d) evaluation, and (e) composition of planning group. Forms of extension education favored by learners can be understood as proposals for reconfiguring power relationship among farmers, their organizations, and government.

Introduction

Participation interests extension educators because the right forms are anticipated to improve the learning experience individually and collectively. Participatory approaches to program planning are grounded in theories of democratic education advanced by John Dewey (1938) and Paulo Freire (1970). This paper explores the issue of participation of farmers from the perspective of adult educators who value democratic, participatory approaches to extension education. Discussion is based on a study of a large-scale sustainable agriculture program in Ontario, Canada, for which farmers, rather than government, provided leadership. The study shows that learners advocate educational objectives that advance their political, social, and organizational goals. Additionally, the study shows that farmers favored educational objectives that were at odds with objectives typically advanced by scientific-technical institutions. These observations support the idea that participatory program planning can be a venue that allows farmers to negotiate power with contemporary institutions of adult education, such as extension. Although the study was conducted in a country in which industrialized forms of agriculture dominate, the lessons parallel knowledge learned from work in developing countries related to mismatch of assumptions and needs of institutions and farmers. In the same vein, the work underscores the importance of social and cultural dimensions to the development of sustainable farming systems. Authors who at one time focused on developing country contexts are applying these lessons fruitfully in unexpected contexts like European agriculture and industrialized agriculture in the Pacific Rim (see for example Röling & Wagemakers, 1998). Knowledge from the South has come North.

Participatory Adult Education and Sustainable Agriculture

Agriculture continues to experience a crisis that includes rapid financial and structural changes and an awareness of farming's enormous influence on ecosystem health (Environmental Canada (EC), 1991; National Research Council (NRC), 1989). The effects on environment are complex; nevertheless, negative impacts of common agricultural practices are well documented, especially contamination of surface and ground water (NRC, 1989). In North America, programs that seek to change farmers' agricultural practices in the direction of environmental stewardship have produced lackluster results when compared to the severity of the problem (Locke et al., 1990; NRC, 1989). Development specialists Robert Chambers
(1997) and Niels Röling and Annamarie Wegemakers (1998) argue that to be effective, scientific-technical institutions must value authentic participation of farmers and rural people in programs for sustainable development. Environmental programs that are cooperatively defined by farmers and scientists mobilize local knowledge and are anticipated to change farmers’ practices more effectively than technology transfer programs of the past (Röling and Wegemakers, 1998). Chambers (1997), Norman Uphoff (1988), and others also value participatory processes for their ability to build the capacity of individuals and organizations to act powerfully on their own behalf in cooperation with others, a philosophy consistent with tenets of democratic extension education.

**Theoretical Framework**

Literature and Theoretical Framework Decisions made during program development affect learning profoundly. It is toward this phase of adult and extension education that the paper is directed. Additional papers address training of participatory facilitators, use of farmers local knowledge, and other elements of the study (Grudens-Schuck, 2000a, 2000b, 1998, 1997).

Program planning is where agendas are set and resources allocated (Cervero and Wilson, 1994; Heron, 1989). Commonly, planners’ interests compete with learners’ needs, resulting in educational designs that muffle learners’ influence (Welton, 1995). Cervero and Wilson (1994) urge adult educators to attend to power dimensions in planning, including participation, as ethical practice. Extension systems in North America are part of the web of institutions and organizations that seek to affect farmers’ behaviors in areas related to the environment as well as in production and financial planning. Interaction and local control figure prominently in the system, making extension a North American experiment in democratic education (Blackburn, 1994). Nonetheless, critics call for greater service and responsiveness, and shared control. A 1999 landmark report on the U.S. land grant system, authored by the National Association of State Universities and Land-Grant Colleges (NASULGC), urges its members to pursue extension activities with greater “respect for partners” and “joint academic-community definitions of problems, solutions, and definitions of success” (NASULGC, 1999). In agriculture, Niels Röling and Annamarie Wegemakers (1998) emphasize participatory learning and adaptive management as a means for refreshing farmer education “in times of environmental uncertainty” (p. 5). In Australia and New Zealand, Landcare is a celebrated example of a farmer-directed grassroots organization dedicated to environmental...
improvement in agriculture (Lockie, 1995). In the Landcare organization, farmers determine the nature and scope of programs, utilizing facilitators and coordinators to “foment synergy” rather than transmit content matter (Campbell, 1998).

Although desirable, adult and extension educators describe shared control of program planning as challenging (Heron, 1989; Wallace, 1999). Anthropologist Thomas Dichter (1989) describes the push and pull of involving villagers in participatory development in a way that echoes the struggle in industrialized countries as well:

We listen to our target group’s assessment of what they need, but we also make a more or less independent investigation of what they need. We cannot afford, in effect, to get stuck in some romanticized vision of cultural sensitivity.... rural people have so often been coached into a view of what the constraints on their greater prosperity are that they may now share that view of their own impoverishment. (pp. 132-133)

Methods

The author directed the intensive case study of the Ontario Environmental Farm Plan program from 1995 to 1998, with one-year resident fieldwork in Guelph, Ontario, in 1996-97. The study used cultural anthropology combined with participatory action research to produce an ethnography (Grudens-Schuck, 1998). An ethnography is a cultural account which pays close attention to language, behavior, settings, and the connections among them (Geertz, 1973). The author overlaid a participatory action research framework on the ethnographic approach to bring more rigor into the study of social processes and to provide opportunities for democratic practice through research (Deshler and Grudens-Schuck, 2000; Greenwood and Levin, 1998). Ethnographic research methods included 36, two-hour interviews; direct observation of 13 Farm Plan workshop sessions with total attendance of 195 farmers; and 53 distinct events involving 256 hours of participant observation of farms, organizational meetings, farm shows, and field days. Methods also included document review of current and pilot editions of the Farm Plan workbook and other internal documents. A five-member planning group composed of insiders and the author negotiated selection decisions, gathered data at critical reflection sessions, and collaboratively planned and presented reports. Insiders included a workshop facilitator, two farm organization staff, and a ministry extension educator, all responsible for ongoing Farm Plan activity.

Results

Farmers influenced five features heavily, resulting in a program that differed in important ways from conventional extension and government programs in developed countries.

Staffing featured grassroots educators consistent with a confidentiality policy.
A prominent feature of the program was employment of a cadre of grassroots facilitators drawn from the ranks of local farm families; most had not considered themselves educators previously. Grassroots educators were employed by Ontario Soil and Crop Improvement Association (Soil and Crop), a farm organization with prior experience in third party delivery of government programs (Dyszk, 1991). Farm leaders claimed that grassroots education and recruitment would be better able to involve farmers in “threatening” issues like environmental improvement. This claim figured prominently in committee discussions and in Farm Plan publicity. Farm leaders also designed the program to be confidential, an uncommon feature of environmental farm planning programs at the time (Ervin and Smith, 1996). Grassroots facilitators were the only personnel who could link a farmer’s name with his or her farm plan (OFEC, 1991/1995). The farming background of Soil and Crop facilitators also figured prominently in workshops. In an interview, one facilitator explained why he told farmers in the workshop that his own farm was rated an “an
environmental disaster” using the Farm Plan assessment. He described how he used his authentic personal experience to gain “buy in” (e.g., commitment) from farmers, and to relieve fears about reporting environmental problems. He said:

I am quite ready and willing to admit it [poor environmental rating]. I don’t believe that for a second there is anything incriminating about this program. I want to get that message across loud and clear. . . . I don’t feel at risk. I want them to get that feeling.

Some bitterness existed among extension educators regarding farm leaders’ decision to plan and publicize the program as “farmer-driven and farmer-led.” An extension educator remarked in an interview if he encouraged farmers to attend Farm Plan workshops. He said, bitterly,

At the beginning, we got told fairly bluntly, Don’t do that. We don’t want the perception that it’s an OMAFRA (Ministry) program. . . . Since it’s the environment, they (Farm Plan) don’t want to be perceived as a government program. They want to be perceived as a farmerrun program.

Instruction featured participatory techniques. Soil and Crop facilitators used participatory educational techniques in Farm Plan workshops. During participatory exercises, farmers developed their own reasons for taking charge of environmental problems, engaged each other in development of solutions, and challenged each others’ assessments of hazards. Extension staff did not, on the whole, disparage participatory education and some had been trained in participative techniques. Extension staff were, however, more likely to talk about participatory methods as “ice breakers” or as techniques for making instruction more fun, toward an outcome of increased compliance. Soil and Crop staff, on the other hand, were able to articulate a more nuanced account of participatory education that valued the process by which farmers overcame dependency and resistance with respect to environmental stewardship (Grudens-Schuck, 2000b). One Soil and Crop facilitator exclaimed:

“It’s not my workshop. It’s these people’s workshop. It’s my job to facilitate it. And that’s why I do shut up. They do the talking.”

Content emphasized experiential learning. The Farm Plan workbook is composed of 23 chapters of environmental assessment checklists and an Action Plan based on Farm*A*Syst farmstead assessment (Mulla, Everett and DiGiacomo, 1998). Farm Plan’s emphasis on active learning and control by farmers distinguishes the workbook from other environmental farm planning programs led by government and extension (Ervin and Smith, 1996). Notably, the program expected farmers rather than scientific experts to complete the 23-chapter assessment and Action Plan (OFEC, 1994). The research documented that when facilitators introduced the large, glossy workbook, farmers sighed, frowned, or joked. “It’s a ton of stuff,” was a typical remark. The data suggest that the decision to require farmers, not experts, to complete the workbook was rooted in farm leaders’ belief that all farmers in Ontario were capable of learning and combining scientific knowledge with local, practical knowledge (Grudens-Schuck and Hill, 1997). Farm leaders also believed that farmers would learn best by becoming involved in and responsible for environmental activity. Through experiential education, farm leaders also intended to counter what they saw as complacency among some farmers and increased nervousness among others, resulting in dependency on government with respect to environmental decision making. A farm leader suggested that farmers had become mired in a set of defeatist assumptions about the feasibility of environmental activities that contributed to passivity. In an interview, he stated:
If it looks like the only solution is to build a big manure storage, then the farmer is going to sit there and say, ‘Well, I can’t afford it. So I am not going to do anything.’

**Evaluation utilized peer review processes and data collection.**

Among conventional forms of evaluation (Helmut Loewen, 1995; InfoResults, 1993), the Farm Plan program created two additional assessment processes which directly served farm leaders’ interests: peer review and aggregate data. Farmers were encouraged to submit completed Action Plans for anonymous review of “appropriateness” to committees called Peer Review. Submission was voluntary, but necessary to receive the incentive grant. Soil and Crop hired over 200 local farmers to staff Peer Review committees. The Peer Review policy was philosophically consistent with the program’s confidentiality policy and with the grassroots staffing decision. The Peer Review system also pressed the issue of ownership of the program by the farming community on a county-by-county basis.

In another form of assessment, farm leaders required Soil and Crop facilitators to collect anonymous data from Action Plans called “aggregate data.” Included in these data were farmers’ responses to a section called “Barriers to Action,” a checklist which allowed farmers to document reasons why they declined to fix a particular environmental problem (OFEC, 1994). This feature mobilized farmers’ local knowledge of the financial, social, and technical feasibility of environmental improvements. Farm leaders used the data to support positions on allocations of government and university research funds and extension priorities. The Barriers to Action section supported Soil and Crop facilitators when they asserted that farmers could take control of their Farm Plan, even to the extent of declaring specific environmental improvements not a personal priority.

**Mainstream farm organization and extension dominated planning.**

It is notable that farm leaders planned privately, using organizational resources available to them, then advanced their ideas through a professional policy booklet that startled ministry officials when it was released (Grudens-Schuck, 2000a; Fagen, Kennedy and Van Den Broek, 1992; OFEC, 1991/1995). Extension staff subsequently entered into a period of cooperation with farm leaders to plan aspects of the program, principally the workbook and technical guides. Extension and farm leaders also worked together on technical committees to write each of the 23 chapters.

Extension and the farming organization coalition formed a partnership regarding programming, with membership negotiated between them. Analysis showed that environmental and organic farming organizations (groups with a mission beyond hunting and game conservation) remained uninvolved in the coalition, uncommon for a sustainable agriculture program. According to a member of one of the uninvolved organizations, mainstream farm leaders “pulled their wagons in a circle” when they composed their learner-directed program planning team. It is important to note that prior to the Farm Plan program, the ministry had composed a discussion group including a spectrum of production approaches (conventional, mainstream, organic) and environmentalist activity (activist, conservationist, preservationist), but leaders involved in Farm Plan rejected this group as a basis for cooperative planning.

**Discussion**

This paper presents findings about learners’ involvement in program planning. Participation is crucial to solving the environmental crisis, yet is described by practitioners and theorists as rare and difficult. One noteworthy finding is that farmers provided significant leadership for program planning, involving extension after setting goals and curriculum guidelines. Specifically, the study documented five dimensions of extension education that were
strongly affected by learners: (a) staffing, (b) content, (c) instruction, (d) evaluation, and (e) composition of planning group. One may apply two sorts of analysis, one social and cultural, and the other from within the critical tradition of adult education. First, circumstances of the case lead to the thorny issue of how to conceptualize both the turn-about from expert-led to learner-led and the effects of farmers' control of Farm Plan curriculum. Chambers (1997) and others suggest that under circumstances of rapid change and increasing distance of professionals from constituents, putting clients in the driver's seat allows changes to be based on timely and important social and cultural information. One can view farmer-to-farmer staffing in this light, including the peer review process; both rely upon farmers' practical knowledge of local environmental conditions, social and fiscal dimensions of farming, and local use of technologies (Grudens-Schuck and Hill, 1997).

"Direct line" social and cultural theory, however, fails to account for political bids apparent in farm leaders' strategies for Farm Plan education. Here one benefits from analysis possible within the critical tradition in adult education. For example, the confidentiality policy manifests the farming community's concern about the regulatory dimensions of environmental education, despite extension's historic emphasis on education. Aggregate data and the Barriers to Action also demonstrate farm leaders' desire to document protest by farmers related to cost, feasibility, and political decisions related to environmental improvements. Moreover, by asking farmers to do more than they believed possible with respect to environmental assessment, farm leaders manifested their goal to decrease farmers' dependency on government and scientific-technical institutions. The amount of work that the program expected farmers to complete for Farm Plan is well outside the organizational culture of extension. More often, extension educators are coached to make tasks easy for farmers, with the unstated behaviorist assumption that compliance with unpalatable rules requires a tangible reward.

Finally, one must consider the finding that farmer-driven aspects of the Farm Plan resulted in exclusion of organic and activist environmentalist groups. There is an instrumental explanation, suggesting that greater diversity would have prevented the unlikely occurrence of the Farm Plan program taking flight (Applebea, 1993). On the other hand, democratic theory enables one to say that learners exhibit dependencies and stereotypical assumptions about self and others even when they become planners. Moreover, according to adult educators in the critical tradition, exclusionary characteristics are a normal part of the development of the autonomy of most groups (Heron, 1989; Welton, 1995). Nevertheless, imperfection does not constitute failure. Conversely, a perfect outcome with respect to participation and openness may have served, communicatively, to stimulate purism rather than appreciation of gains in the messy context of sustainable development in the context of industrialized North America. Overall, Farm Plan is a demonstration of farmers successfully advancing sustainable agriculture while working with extension in ways that reconfigured power relationships.

Notes

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2. CDN is Canadian currency, about 60% of U.S. value at the time of the study.

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Perceived Similarities and Differences Between Pre-vocational and Modern Agriculture Programs in Swaziland: Implications for Curriculum Reform

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Abstract

A descriptive survey study to determine the perceptions of agricultural education professionals toward two agricultural programs revealed that these programs (modern and pre-vocational agriculture) were similar in terms of objectives that relate to practical teaching, in stimulating positive attitudes toward agriculture, in providing a basis of further training, in demonstrating that farming is a profitable business, in encouraging self-reliance and resourcefulness of useful skills, and in creating awareness of opportunities and challenges in agricultural development. Differences were observed in the statements that, “pre-vocational agriculture enables pupils to gain practical experiences in medium/large scale farming,” and that “pre-vocational agriculture assures students of employment when they complete school.” Modern agriculture did not. Also, pre-vocational agriculture provided more practical training than did modern agriculture. Respondents agreed that modern and pre-vocational agriculture be integrated into one program, to: strengthen training of students in practical, entrepreneurial and management skills; improve the use of physical, human and financial resources; improve the image and quality of pre-vocational agriculture, and to develop a strong relevant curriculum with all the contents of agriculture while in high school. The major conclusion drawn from the study was that there are similarities between the two agriculture programs offered in Swaziland high schools and the two programs should be merged into one high school program.

Introduction

Agriculture and agriculture-related industries in Swaziland comprise the largest economic activity besides the manufacturing sector. Agriculture generates about 12% of the country’s gross domestic product and contributes 75% to net export earnings (Economic Development Plan, 1997/98 - 1998/99). A large part of the manufacturing sector processes agricultural products such as sugar, citrus fruits, pineapples, cotton, meat, maize, and timber. Agriculture is the second contributor to the country’s domestic product (GDP) and the largest employer offering jobs to 21,000 people, followed by manufacturing (17,000 people), and then distribution (12,000 people). Agriculture absorbs approximately 75% of the total indigenous workforce through subsistence and commercial farming, and together with forestry accounts for more than 40% of the total wage employment. This indicates how important agriculture is to the Swaziland economy.

Since agriculture is an important segment of the country’s economy, it is essential that preparation for employment, as well as associated training, retraining, and upgrading be a top priority for the educational programs. Thus, the rapid increase in technology of agriculture/Agribusiness is also a factor demanding a corresponding increase in the training level of managers, youth and other employees. Accurate and timely information regarding agricultural employment in Swaziland becomes key in decision-making for planning and conducting educational programs to prepare young people/school leavers for self-employment and employment in major industries.
Immediately after independence in 1968, the government of Swaziland acknowledged the need of providing students and individuals with the knowledge, skills and attitudes necessary for them to meet their responsibilities as citizens of their community, regions and nation in an increasing interdependent and complex society. The government also realized that development of agricultural industry was inextricably linked to educational advancement, and, therefore, introduced agriculture programs into the school system.

The “Modern” agriculture program in Swaziland was introduced in the early 1970's with the overall aim of changing attitudes of students so that agriculture can be regarded in a positive light, as a profitable, worthwhile and enjoyable way of life when properly practiced (Dlamini, 1982; Gooday, 1974). The “Pre-Vocational” agriculture program was meant to improve the practical skills of students for possibilities of self-employment, and was introduced in the late eighties. Both programs are offered in the high schools of Swaziland. In light of developing an agricultural program that is applicable to a wide range of occupations in agriculture, researchers pointed out that development should encourage the reinforcement of any skills that would help students for further training (Gerard, 1987); and for living on a farm or find employment out of agriculture (Andelt et al, 1997). However, are the two programs similar or different? And is it cost-effective to run two programs that appear to be similar in a developing country?

2. To describe the perceptions of agriculture education professionals regarding integrating modern and pre-vocational agriculture into one program.

3. Describe the relationships among the following variables: modern agriculture, pre-vocational agriculture, skill development, resources, image, general considerations and the following factors (or independent variables): highest levels of education attained, number of years in your present occupation, number of years involved with modern agriculture, number of years involved with pre-vocational agriculture instruction/teaching and age.

Methodology

A descriptive survey method of research was used in this study.

Population and sample

The target population of the study was agricultural education professionals consisted of O-level agriculture teachers, college/pre-vocational instructors, school agriculture coordinator and school administrators (N = 96). A systematic sampling method was utilized to draw a representative sample of seventy-six (n = 76) agriculture education professionals from the directory, following Krejcie and Morgan (1970) formula for determining sample size.

Instrumentation

The researchers developed a questionnaire for the study based on literature and their experiences. The questionnaire was divided into three parts. Part A consisted of fifty-two (52) statements pertaining to the similarities and differences between modern and pre-vocational agriculture. Respondents were requested to indicate their level of agreement on a one to six point Likert type scales. The scale was anchored as follows: 6 = Strongly Agree; 5 = Agree; 4 = Slightly Agree; 3 = Slightly disagree; 2 = Disagree; 1 = Strongly disagree. Part B of the
questionnaire consisted of thirty-four (34) statements requesting respondents’ perception regarding integrating modern and pre-vocational agriculture programs into one. Respondents were requested to indicate their level of agreement on a one to six point Likert type scales indicating their perceptions regarding integrating modern agriculture and pre-vocational agriculture into one program. The scale was anchored as follows: 6=Strongly Agree; 5=Agree; 4= Slightly Agree; 3=Slightly disagree; 2=Disagree; 1=Strongly disagree. Part C of the questionnaire had ten (10) statement requesting information on personal characteristics of respondents. Characteristics were: sex, qualifications, present occupation, number of years involved in agriculture education, age, school location, numbers of years involved with pre-vocational agriculture, whether agricultural education professionals studied agriculture in high school or not; and home location.

Validity and reliability of the instrument

A panel of seven (7) experts made up of agriculture education academic staff at the University of Swaziland and pre-vocational educationists from the Ministry of Education reviewed the instrument and attested to its content validity. To establish reliability of the instrument thirty-five (35) teachers not participating in this study was conducted. Cronbach’s Alpha reliability coefficients were computed for each of the six domains, and were found to range between .83 and .92.

Data collection procedures

A self-administered questionnaire, designed by the researchers, based on the review of appropriate literature and experience of the researchers was used to gather data for the study. The data were collected by the researchers throughout the four regions during the month of October 1999.

Data analysis

Frequencies, means, correlations were used to describe data. The t-test was used to determine differences. The statistical package for social sciences (SPSS, 1996) was used to analyze data. An a priori alpha level of .05 was used to determine statistical significance.

Findings

The findings of this study are organized according to the three objectives of the study.

To compare perceptions of agriculture education professionals regarding similarities or differences of modern and pre-vocational agriculture programs

Data presented in Table 1 show respondents perceptions regarding the similarities or differences between modern and pre-vocational agriculture programs, offered in Swaziland's high schools. Respondents were requested to respond, comparatively, to the 26 items regarding similarities or differences between the two programs. The t-test was used to compare mean perceptions of respondents. Results revealed that similar perceptions were observed on 15 while differences in perceptions were observed on 11, of the items.

Large and practical differences (sample mean differences of 2 points and above in this study) were observed on only three statements. The three statements were: the program is vocational oriented; have courses that are beneficial for higher achieving students; and help students make money while studying through home projects. In all three statements the pre-vocational agriculture program received the highest mean ratings. The remainder of the statements did not provide meaningful differences.

However, overall results revealed that there was no significant difference (t = -6.46; p<.05) in mean perceptions of respondents regarding the relationship between modern and pre-vocational agriculture programs offered parallel in Swaziland's high schools.
### Table 1

**Comparison of respondents' perceptions regarding modern and pre-vocational agriculture programs in Swaziland**

<table>
<thead>
<tr>
<th>Program</th>
<th>Modern Agriculture</th>
<th>Pre-Vocational Agriculture</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>1. is a scientific area of study</td>
<td>5.32</td>
<td>.79</td>
<td>4.47</td>
</tr>
<tr>
<td>2. is a blend of scientific principles and agriculture practices.</td>
<td>5.17</td>
<td>.83</td>
<td>4.85</td>
</tr>
<tr>
<td>3. is a highly technical field of study.</td>
<td>3.96</td>
<td>1.22</td>
<td>4.65</td>
</tr>
<tr>
<td>4. is able to demonstrate the business aspect of farming.</td>
<td>4.24</td>
<td>1.28</td>
<td>5.52</td>
</tr>
<tr>
<td>5. is able to create awareness of career opportunities in farming and associated technologies.</td>
<td>4.35</td>
<td>1.20</td>
<td>5.33</td>
</tr>
<tr>
<td>6. is able to lay a foundation for further academic studies in agriculture.</td>
<td>5.28</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>7. is able to provide a basis for understanding the role and methods of extension agencies.</td>
<td>4.03</td>
<td>1.27</td>
<td>4.64</td>
</tr>
<tr>
<td>8. enables students to complete high school and still meet college requirements.</td>
<td>5.29</td>
<td>1.21</td>
<td>3.55</td>
</tr>
<tr>
<td>9. enables students to complete high school and still meet university requirements.</td>
<td>4.07</td>
<td>1.42</td>
<td>5.08</td>
</tr>
<tr>
<td>10. enables students to complete projects that constitute good preparation for University study in agriculture.</td>
<td>5.04</td>
<td>1.20</td>
<td>3.72</td>
</tr>
<tr>
<td>11. enables students to complete projects that constitute good preparation for college study in agriculture.</td>
<td>4.99</td>
<td>1.13</td>
<td>3.95</td>
</tr>
<tr>
<td>12. enables students to complete projects that constitute good preparation for vocational study in agriculture.</td>
<td>3.92</td>
<td>1.30</td>
<td>5.26</td>
</tr>
</tbody>
</table>
Table 1 (continued)

Comparison of respondents’ perceptions regarding modern and pre-vocational agriculture programs in Swaziland

<table>
<thead>
<tr>
<th>Program</th>
<th>Modern Agriculture</th>
<th>Pre-Vocational Agriculture</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. should become more scientific</td>
<td>4.52</td>
<td>4.23</td>
<td>.162</td>
</tr>
<tr>
<td>14. is more practical oriented.</td>
<td>3.89</td>
<td>5.61</td>
<td>.91</td>
</tr>
<tr>
<td>15. is more balanced in academic and practical orientation</td>
<td>4.51</td>
<td>4.11</td>
<td>1.41</td>
</tr>
<tr>
<td>16. have courses that are beneficial for higher achieving students</td>
<td>4.74</td>
<td>3.58</td>
<td>1.42</td>
</tr>
<tr>
<td>17. is vocational oriented.</td>
<td>3.30</td>
<td>5.50</td>
<td>1.09</td>
</tr>
<tr>
<td>18. eliminates segregation among teachers in terms of intellectual capabilities</td>
<td>3.69</td>
<td>3.60</td>
<td>1.58</td>
</tr>
<tr>
<td>19. enables pupils to gain practical experience in medium/large scale farming</td>
<td>3.46</td>
<td>5.07</td>
<td>1.15</td>
</tr>
<tr>
<td>20. seeks to build on the knowledge and experience pupils gained through modern agriculture</td>
<td>4.38</td>
<td>4.80</td>
<td>1.30</td>
</tr>
<tr>
<td>21. help students gain more self-employment skills.</td>
<td>3.51</td>
<td>5.57</td>
<td>.98</td>
</tr>
<tr>
<td>22. help students make money while studying through home project.</td>
<td>2.84</td>
<td>5.22</td>
<td>1.37</td>
</tr>
<tr>
<td>23. assist students to gain business ideas.</td>
<td>3.89</td>
<td>5.37</td>
<td>.96</td>
</tr>
<tr>
<td>24. improves the students’ ability to keep records.</td>
<td>4.49</td>
<td>5.16</td>
<td>1.08</td>
</tr>
<tr>
<td>25. minimizes emphasis on theoretical agriculture</td>
<td>3.61</td>
<td>5.25</td>
<td>1.19</td>
</tr>
<tr>
<td>26. assures students of employment when they complete school</td>
<td>2.88</td>
<td>4.18</td>
<td>1.85</td>
</tr>
<tr>
<td>Overall</td>
<td>4.20</td>
<td>4.71</td>
<td>.74</td>
</tr>
</tbody>
</table>

*Statistically significant at $P \leq .05$;
Rating Scale: 1=Strongly Disagree; 2=Disagree; 3= Slightly disagree; 4= Slightly agree; 5= Agree; 6= Strongly agree.
To describe perceptions of respondents regarding integrating modern and pre-vocational agriculture

Responses on whether modern and pre-vocational Agriculture should be integrated into one program are shown in Table 2. Descriptive statistics of means, standard deviation and frequencies were used. Results revealed that respondents agreed that the two programs should be integrated into one as this would: further develop the skills of students; improve the image of the Pre-Vocational program; be cost-effective; improve management; and optimize the use of human and material resources.

To describe the relationships between independent and dependent variables

To describe the magnitude of relationships, Davis’s scale was used (Table 3). Results, in general, revealed negligible ($r = .07$) to low ($r = -.28$) associations between the independent variables ($V_7$, $V_8$, $V_9$, $V_{10}$, $V_{11}$, $V_{12}$, $V_{13}$ and $V_{14}$), and each of the six domains (dependent variables): modern agriculture, pre-vocational agriculture, skill development, image, resources and general considerations. Positive high correlations were observed between gender and the image of pre-vocational agriculture, and general issues regarding the agriculture programs. The low associations indicated that the independent variables did not influence the perceptions of respondents regarding the relationship between modern and pre-vocational agriculture programs. Thus, eliminated as confounding the perceptions of respondents. However, the variable gender needs to be interpreted with caution, given its strong associations with other variables.

Table 2

<table>
<thead>
<tr>
<th>Perceptions of respondents regarding the integration of modern and pre-vocational agriculture programs</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrating Pre-vocational and Modern agriculture would:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. improve the image of the Pre-vocational program</td>
<td>4.96</td>
<td>.91</td>
<td>73</td>
</tr>
<tr>
<td>2. further develop the skills of students</td>
<td>5.16</td>
<td>.72</td>
<td>74</td>
</tr>
<tr>
<td>3. Optimize the use of human and material resources</td>
<td>4.43</td>
<td>.89</td>
<td>71</td>
</tr>
<tr>
<td>4. Be cost-effective and would provide improved management</td>
<td>4.82</td>
<td>.88</td>
<td>74</td>
</tr>
</tbody>
</table>

Rating Scale:
1 = Strongly Disagree; 2 = Disagree; 3 = Slightly disagree; 4 = Slightly agree; 5 = Agree; 6 = Strongly agree
Table 3

Inter correlations between independent and the dependent variables.

<table>
<thead>
<tr>
<th></th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
<th>V6</th>
<th>V7</th>
<th>V8</th>
<th>V9</th>
<th>V10</th>
<th>V11</th>
<th>V12</th>
<th>V13</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>--</td>
<td>.71</td>
<td>.33</td>
<td>.36</td>
<td>.23</td>
<td>.30</td>
<td>.19</td>
<td>.07</td>
<td>.02</td>
<td>-.08</td>
<td>-.15</td>
<td>-.28</td>
<td>-.31</td>
</tr>
<tr>
<td>V2</td>
<td>.33</td>
<td>--</td>
<td>.53</td>
<td>.37</td>
<td>.32</td>
<td>.67</td>
<td>.67</td>
<td>.09</td>
<td>.11</td>
<td>.13</td>
<td>.13</td>
<td>.11</td>
<td>.14</td>
</tr>
<tr>
<td>V3</td>
<td>.36</td>
<td>.53</td>
<td>--</td>
<td>.38</td>
<td>.55</td>
<td>.67</td>
<td>.67</td>
<td>.09</td>
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<td>.14</td>
<td>.13</td>
<td>.11</td>
<td>.14</td>
</tr>
<tr>
<td>V4</td>
<td>.30</td>
<td>.37</td>
<td>.32</td>
<td>--</td>
<td>.67</td>
<td>.67</td>
<td>.67</td>
<td>.09</td>
<td>.11</td>
<td>.14</td>
<td>.13</td>
<td>.11</td>
<td>.14</td>
</tr>
<tr>
<td>V5</td>
<td>.19</td>
<td>.10</td>
<td>.10</td>
<td>.67</td>
<td>--</td>
<td>.80</td>
<td>.80</td>
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<td>V6</td>
<td>.07</td>
<td>-.11</td>
<td>-.11</td>
<td>-.03</td>
<td>-.10</td>
<td>.73</td>
<td>.73</td>
<td>.10</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
</tr>
<tr>
<td>V7</td>
<td>.02</td>
<td>-.10</td>
<td>-.10</td>
<td>-.09</td>
<td>-.11</td>
<td>.69</td>
<td>.69</td>
<td>.10</td>
<td>.14</td>
<td>.11</td>
<td>.14</td>
<td>.14</td>
<td>.14</td>
</tr>
<tr>
<td>V8</td>
<td>-.08</td>
<td>.13</td>
<td>.13</td>
<td>.11</td>
<td>.14</td>
<td>.20</td>
<td>.20</td>
<td>.17</td>
<td>.11</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>V9</td>
<td>-.15</td>
<td>-.28</td>
<td>-.31</td>
<td>-.07</td>
<td>-.17</td>
<td>-.14</td>
<td>-.14</td>
<td>.11</td>
<td>.00</td>
<td>-.24</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>V10</td>
<td>-.05</td>
<td>-.09</td>
<td>-.09</td>
<td>.05</td>
<td>.81</td>
<td>.83</td>
<td>.89</td>
<td>.64</td>
<td>.63</td>
<td>.68</td>
<td>.25</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>V11</td>
<td>-.01</td>
<td>-.09</td>
<td>-.09</td>
<td>.06</td>
<td>.06</td>
<td>.03</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>V12</td>
<td>-.10</td>
<td>-.03</td>
<td>-.04</td>
<td>-.15</td>
<td>.13</td>
<td>.13</td>
<td>.02</td>
<td>.02</td>
<td>.02</td>
<td>.02</td>
<td>.02</td>
<td>.02</td>
<td>.02</td>
</tr>
</tbody>
</table>

Dependent variables: V1 = Modern agriculture (interval); V2 = Pre-vocational agriculture (Interval) V3 = Resources (Interval); V4 = Skill development (Interval); V5 = Image of Pre-Vocational agriculture (Interval); V6 = General considerations (Interval).

Independent variables

V7 = number of years in present occupation (interval); V8 = number of years involved with modern agriculture instruction (Interval); V9 = Age (Interval); V10 = number of years involved with pre-vocational agriculture instruction (Interval); V11 = Highest level of education attained (ordinary: 0 = pre-vocational certificate; 1 = Diploma; 2 = Bachelors; 3 = Masters); V12 = Gender (Nominal); V13 = Whether you studied agriculture in high school or not (Nominal); V14 = Residence (Nominal).

Conclusions and Implications to Curriculum Reform

There are similarities between the two agricultural programs offered in Swaziland high schools. The similarities are in terms of objectives that relate to practical teaching, stimulating positive attitudes toward agriculture, providing a basis for further training, demonstrating that farming is a profitable business, encouraging self-reliance and usefulness of skills, creating an awareness of opportunities and challenges in agriculture development. However, Pre-vocational agriculture program provided more practical training than the modern agriculture program.

Respondents agreed that the two programs should be integrated into one because it would strengthen the training of practical skills, and help students gain more self-employment skills for small and medium scale farming; help students start small business while studying; improve the use of physical, human and financial resources; improve the quality of pre-vocational agriculture; eliminate segregation among students in terms of intellectual capabilities; make the benefits of the Schools Agriculture Program observable by Swazi society; remove the stigma that pre-vocational agriculture is for less academically inclined students; and facilitate the development of positive attitude toward commercial agriculture as a potential career amongst students. Furthermore, integration would cut down the cost of running two programs and improve management; strengthen the training of students in practical farming skills; entrepreneurial skills; management skills; improve the use of physical and personnel resources, and enhance the image of agriculture in the Swazi community.

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The conclusion that an integrated program could strengthen the training of students in practical, entrepreneurial and management skills were also in agreement with Andelt et al. (1991), and implied that students could be self-employed or employed in agriculture related-industries when they finish high school. Furthermore, this could also imply reduction in the rate of youth unemployment and improvement of the country's economy.

Modern and pre-vocational agriculture programs should be integrated into one program. The benefits of integrating the two are: the new curriculum will benefit from both programs as agricultural resources (classrooms, sheds, tools, gardens, laboratories) usually available in a school would be used by all students taking agriculture. An integrated agriculture program would strengthen the teaching of practical, entrepreneurial and leadership skills and all students taking agriculture will receive similar certificates.

The Ministry of Education should design an integrated agriculture program for high school that has useful skills such as practical, leadership, entrepreneurial, self-employment and business management. The curriculum content should include courses, such as, animal husbandry, crop husbandry, poultry production, farm structures, fencing, environmental conservation, farm machinery, lawn care, management, horticulture, business farming, record keeping, aquaculture, bee keeping, agriculture marketing, calf-rearing, career opportunities, practical projects, leadership and cooperatives' development.

A team of agriculture teachers is needed to organize and supervise: projects (research and home projects), young farmers' organizations, school regional agriculture competitions and field demonstrations. These extended school agriculture programs would enhance the image of agriculture in Swazi schools. A favorable image of the agriculture program is more likely to be supported by the public and business communities and encourage their children to learn agriculture in school as a means of making a living, and enable students to gain confidence in practical skills and management as they would be in-charge of specific projects.

References


Participatory and Empowerment Methods Used by Peace Corps Volunteers in Developing Programs for Village Women in Africa*

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Robert A. Martin, Professor and Head
David L. Williams, Professor
Department of Agricultural Education and Studies
Iowa State University, Ames

Abstract

The purpose of this study was to identify the participatory and empowerment methods used in developing programs for village women in Africa. Interviews with 15 female Returned Peace Corps Volunteers (RPCVs) were conducted to provide a database for the study. The findings revealed that the RPCVs did use participatory and empowerment methods to involve women in developing village programs. Among the methods used were serving as a facilitator, establishing credibility, training local leaders, focusing on needs of women, identifying participants, providing assistance in planning programs, using indigenous training techniques, expediting involvement, accommodating participants, and identifying local impact measures.

Introduction and Framework

Including women in the program development process in developing countries has become a priority in recent years (Stamps, 1990; World Bank, 1994). Participatory and empowerment principles have the potential to help women develop programs to solve the problems they face and improve the quality of life for themselves and their families. Individuals tend to feel committed to a program to the extent that they participate in planning it, and the productivity of people is enhanced when they are empowered to make decisions about matters that affect them (Kindervatter, 1979; Ross, 1967). When participation is paired with empowerment, the recipients are not only involved in the process of helping themselves but they also have control over local decisions and allocation of available resources. By doing both, village programs will be stronger because with participation, in time the people develop skills to help themselves, and with empowerment, they learn how to make decisions and to manage self-help programs (Brydon & Chant, 1989; Kardem, 1991).

Participation is a process whereby individuals develop their own abilities to solve problems. Skills in problem identification are developed, clients are allowed to determine their goals and their ability to make choices is enhanced. Moreover, participation allows people the opportunity to "develop traits of character, qualities of leadership, and knowledge of issues and concerns that enable them to be productive citizens and to achieve progress in a changing society" (Rothwell, Sullivan & McLean, 1995, p. 385). Participation allows for grassroots identification of needs as well as recognition of scientific and cultural changes that may help solve problems (Prawl, Medlin & Gross 1984).

Empowerment is a process that increases the capacity of a group to influence the future of its members (Bryant & White, 1982).

Empowerment includes allowing people to have control over programs, activities, and decisions that affect them. The benefits of empowerment

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can take many forms, such as building self-confidence, sharpening critical thinking, enhancing group cohesion, improving self-reliance, improving decision-making capabilities, and promoting change through collective action (Young, 1993).

The United Nations (1989) concluded that assisting women in the development process could have a major impact on the development of a society. Among the impacts reported from the use of participation and empowerment approaches are the following: (1) improved economy for women; (2) raised status for women; (3) expanded leverage for women in negotiations; (4) established discipline of working together; (5) expanded self-control and self-determination; (6) initiated local control; (7) developed at the village's pace; (8) used indigenous plans; (9) increased the capacity of a community to solve problems; (10) developed the will to change; and (11) created greater access to resources and markets (Kindervatter, 1979; Danes, Winter & Whiteford, 1985; Alton, 1988; Stamps, 1990; Rao, Anderson & Overholt, 1991).

Hui (1985) stated that the best way for Western societies to help developing nations is to teach them how to help themselves — how to solve problems. A Chinese proverb provides a training philosophy: “Go in search of people. Begin with what they know. Build on what they have” (Hui, 1985, p. 5). When participation is stressed, programs can help train local leaders and facilitate a process whereby community problems and needs are addressed by local people (Jones, 1986).

Facilitators for women’s programs in developing countries should, as much as possible, be female (Brydon & Chant, 1989). Midgley (1986) reported that women project workers are effective when they work closely with women in the community to earn their respect. Young (1993) stated “women must take control of their lives, they must work collectively and do things for themselves, they must set their own agendas, and they must change things to fulfill their needs” (p. 158). This description of empowerment could also describe participation. Thus, participatory and empowerment schemes may be viewed as synonymous. Programs that allow village women to make decisions for themselves (i.e., empowerment) encourage participatory, self-help tactics. Women’s self-esteem is uplifted when they are personally involved in something positive within their village (O’Kelly, 1979). “Once women have been exposed to new ideas, and have access to information and other resources, they tend to use their imagination and initiative to take the next step” (ICAI, 1987, p. 145).

Purpose and Objectives

The purpose of this study was to identify participatory and empowerment methods used by RPCVs in planning and conducting development programs for village women.

Methods and Procedures

This qualitative study used an interview format with open-ended questions to collect data from 15 RPCVs. The participants were selected from over 140,000 former Peace Corps Volunteers in the United States using the following criteria: (1) returned to the United States since 1988; (2) had a Peace Corps assignment in agriculture; (3) worked in the Middle East or Africa; (4) female; and (5) waived the right to privacy so they could be interviewed. Using these criteria, a Peace Corp computer search reduced the number of RPCVs to 155 and provided the researchers with addresses and phone numbers. A letter describing the study along with a pre-paid, return postcard requesting information about their availability for an interview was mailed to each. Forty-four completed postcards were returned; 20 of the RPCVs met the criteria for participation and agreed to be interviewed during the established time frame. Five had to be eliminated because their locations were not accessible by Greyhound Bus, the means used by the interviewer to travel to the various cities to conduct the interviews. Thus, the database for
this study was supplied by 15 RPCVs, all with Peace Corp experience in Africa.

An open-ended interview schedule was developed to collect data for the study. Interview questions were generated from a review of the literature. Conversations with RPCVs not included in the target population and experts in qualitative research were helpful in designing the interview schedule to enhance validity. Two pilot interviews were conducted with RPCVs not included in the sample, and adjustments were made to facilitate data collection. The final interview schedule included 21 discussion questions, 11 short-answer questions and 22 quick-answer questions. Example questions are (1) How did you organize meetings for women (discussion question)? (2) Is it necessary for the facilitator to be considered “part of the community” to get things done (short-answer)? and (3) Can a participatory program for women also include their children (quick-question)?

Each of the 15 PRPCVs selected for the study was contacted to schedule a time to complete the interview at their place of residence. During the interviews, the interviewer read from the interview schedule and allowed respondents time to answer each question fully. A cassette tape recorder was used to record the interviews, which took about 70 minutes each to complete. The audio taped interviews were transcribed to provide a database for the study. Analysis was completed to identify themes within the data.

Findings

The findings are reported as themes describing common threads observed in the data.

Theme 1: Be a Facilitator. The interviewees frequently described their role in program development as that of a facilitator, working to initiate “a process” that allowed village women to do something about their condition. As a facilitator, RPCVs helped women identify their needs and worked to get the women involved in seeking solutions to problems in an organized manner. The need to design programs so that women are empowered to make decisions for themselves was emphasized.

Theme 2: Establish Credibility. The need to establish credibility among the women before attempting to initiate programs was emphasized by the respondents. Credibility was established with the village women by listening to them, spending time getting to know them, asking them questions, learning the local language, and working side by side with them. Several interviewees said that it took them months to develop the rapport and respect needed to gain the involvement of village women in planning and conducting programs. Gaining the support of local leaders was identified as critical in village programming.

Theme 3: Train Local Leaders. The RPCVs reported serving as trainers, frequently using skits of a mock village to give women practice in using participatory and empowerment methods. These telescopic women would write what they had learned in local settings and later come back together to discuss their experiences. The interviewees emphasized the need for patience, recognizing that with time and proper programming, participants can be trained and leaders developed. Several of the RPCVs mentioned that training in participatory and empowerment techniques would have been helpful in their Peace Corp assignment; however, few had received such training.

Theme 4: Focus on Women’s Needs. Virtually all of the interviewees thought that the needs of women should be paramount in developing programs. The problems that plague a village were discussed by the women in a group setting and a consensus was reached about the concerns to be addressed by the program. Groups commonly needed help in setting priorities and allocating available resources. Programs that produce money or other resources were reported as being attractive to village women, and such programs can serve as a core from which other empowerment activities can grow. Interviewees agreed that local resources should be used as much as possible in conducting programs.
Theme 5: Identify Participants. The interviewees reported involving village women in deciding who should be in the participatory group. Normally this meant that all females interested in the program were invited to participate. Some RPCVs reported using subgroups to target specific populations (e.g., religious, and tribal) to engage women in collective efforts to solve village problems. Interviewees reported using social contacts and informal communications in the village to identify participants and encourage women to become involved in self-help programs.

Theme 6: Provide Programming Assistance. RPCVs reported that village women were not familiar with program planning techniques used in the West, but they did have their own approach to planning that featured some transferable skills. Planning needs to be done slowly and in-depth until women are familiar with the process. Training in how to break activities into smaller tasks with time frames for implementation was used. Role-playing was used to provide practice with various elements of the planning process, allowing the women to gain experience and develop the confidence needed to implement programs. Virtually all the interviewees thought that the women should do their own planning because the women knew their situations better than anyone else. They emphasized that the facilitator can help by asking “why” questions in the planning process (e.g., Why is this happening? Why is this an alternative solution?).

Theme 7: Use Indigenous Training Techniques. The respondents reported using communication and training techniques familiar to the women. Sitting down and talking during relaxed social occasions during the day was a popular method of communicating with village women. Telling stories, performing skits, demonstrating, and role-playing were methods frequently used by the RPCVs in training village women. Using analogies was another effective technique. For example, when explaining photosynthesis, one interviewee stated that she talked about the leaves of a plant being like the mouth of a person and that the sunshine is like food. When village women take the leaves off a crop plant (for food) then the plant cannot eat and grow as it should.

Theme 8: Expedite Involvement. Interviewees reported that involvement is the key to participatory and empowerment programs for village women. Using local leaders, delegating work assignments to members of the group, and providing the support needed to get things done were methods commonly used to reach this goal. Side-by-side work with clients and continuous reminders of the desired outcomes of the program were strategies used by the RPCVs to involve women in program planning. To help women experience empowerment, interviewees reported involving village women early on in making minor choices (e.g., time and place of meetings and breaks) followed by more complex decisions later in the planning process.

Theme 9: Accommodate Participants. The data revealed that it was not easy to get village women to enroll in development programs because they simply did not have time to participate. They had to care for their children, work in the fields, care for the ill and the elderly, and perform many domestic duties. The respondents reported scheduling meetings at a time and place convenient to the village women. The interviewees reported providing accommodations for children to allow more time for women to work together. Interviewees were unanimous in stating that women should not be paid money to be involved in self-help programs.

Theme 10: Identify Local Impact Measures. Respondents reported difficulty in evaluating village programs based on Western standards and emphasized that the participants should be the ones to decide on impact measures. Developments at the village level tended to move at a slow pace, making it difficult to measure progress in a limited time frame. The RPCVs considered women working together to solve common problems as one indicator of success for participatory programs. The data also revealed that village women readily critiqued their programs, a local phenomenon from which
formative evaluation could grow. The need for successful participatory and empowerment programs to serve as models surfaced in several of the interviews. Some interviewees reported that their evaluation merely entailed recording yields, counting attendance at meetings, or documenting how much money was made from program activities.

Conclusions and Recommendations

The use of participatory and empowerment methods in village programming can benefit those who are willing to help themselves (Steady, 1993). The findings of this study concur with earlier works (Midgley, 1986; Jones, 1986; Kindervatter, 1987; FAO, 1981). RPCVs frequently served as a facilitator, trainer, and encourager in planning, conducting, and evaluating development programs for village women. They worked closely with the village women to earn their trust, and over time, they mentored village women to function as local leaders among their peers. Kindervatter (1987) stated that a good facilitator would respect the knowledge and the experiences of women and help them feel comfortable about expressing problems and sharing their ideas.

In planning programs for village women, RPCVs used methods that included conducting needs assessment, training local leaders, identifying participants, and involving the women in the planning process. According to the FAO (1981), the involvement of women in defining their problems serves as a source of motivation for them to do something about their situation.

At the program implementation stage, RPCVs reported scheduling meetings at a time and place convenient for the village women, providing accommodations for children, facilitating open discussion among group members in selecting priority programs, involving local leaders, and working closely with program participants. The use of local women to manage programs, the use of indigenous communication channels, and the use of local resources to support program activities were other methods used by the RPCVs in conducting self-help programs for village women. Kindervatter (1987) described grassroots programs as a rope that links women together to help them put their skills to effective use, and Scrinshaw (1982) emphasized the importance of using local resources whenever possible.

The RPCVs reported the use of indigenous evaluation strategies in assessing program impact, and they emphasized the difficulty of measuring progress in a limited time frame. Women working together to plan and conduct village programs using local resources is an indicator of the success of village programs (Alton, 1988; Stamps, 1990).

In many ways, the findings of this study concur with the thoughts of the early Extension pioneer, Seaman A. Knapp: What one hears may be doubted, what one sees may also be doubted, but what one does cannot be doubted (Vines & Anderson, 1976). Participatory and empowerment activities involve village women in the process of helping themselves, action that can not be doubted. Consideration should be given to including participatory and empowerment experiences in training programs for Peace Corps Volunteers and others who plan to work with women in self-help village programs. The findings of this study should be used to help plan such a training program.

References


Perceptions of Agricultural Researchers And Extension Agents Regarding Needed Linkages in Maize Technology Development in the Ashanti Region of Ghana

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Abstract

Effective linkages between agricultural researchers and extension agents are vital for successful technology development and delivery to meet the needs of farmers. This paper presents the results of a study aimed at assessing the perceptions of agricultural researchers and extension agents regarding the importance (relevance), adequacy and needed linkage activities, and the major problems affecting linkages between researchers, extension agents and farmers. The data for this study were obtained from 28 maize researchers and 47 randomly selected extension agents in maize technology systems in Ashanti Region of Ghana using validated and pretested questionnaires. The needs assessment formula developed by Borich (1980) was applied to determine the needed activities.

Introduction

Linkage activities are organizational procedures used to establish, maintain or improve communication relationships among individuals or units in a system. In agricultural system, effective linkages among researchers and extension agents are vital for successful technology development and delivery (Amalu, 1998; Zinnah, 1994; Merrill-Sands, Kaimowitz, Sayce and Chater, 1989; Eponou, 1993). The National Agricultural Extension Project (NAEP) and National Agricultural Research Project (NARP) have the mandate of forging stronger links between farmers, extension agents, and researchers in both agricultural technology development and transfer programs in Ghana. Cognisance of inadequate funding and scarce resources to cover linkage all activities in Ghana, there was need to conduct a study to choose the most relevant and needed linkage activities. Moreover, linkages are about people and linkage activities are performed by individuals. As Bennel (1990) notes, negative feelings and perceptions, lack of trust and mutual respect, lack of empathy among researchers and extension agents often abound in research and extension organizations and often limit important linkage activities. However the situation in Ghana was not known. This study was conducted to fill that vacuum.

Objectives of the Study

The general objective of the study was to assess the perceptions of agricultural researchers and extension agents regarding needed linkages in maize technology development in the Ashanti Region of Ghana. The specific objectives were as follows:
1. Identify and describe the background and demographic characteristics of researchers and extension agents;

2. Determine differences and similarities in perceptions of researchers and extension agents as to the level of importance of selected linkage activities;

3. Determine differences and similarities in the perceptions of researchers and extension agents as to the level of adequacy of the selected linkage activities;

4. Assess the needed linkage activities as perceived by extension agents and researchers; and;

5. Identify the major factors constraining the linkages between researchers and extension agents.

Methods and Data Sources

Face-to-face interactions were held with the regional extension officers, training officers, subject matter specialists and the research extension liaison coordinator. The essence of this interactions was to identify the activities meant for forging close links among extension agents and researchers.

Two separate but similar questionnaires based on the objectives of the study and meant for extension agents were prepared, validated and pretested. These were used to collect the data for this study from all the 28 maize researchers and 47 extension agents in 4 randomly selected maize growing districts in the Ashanti Region of Ghana through personal contacts by the authors.

The relevance of the linkage activity indicated the perceived importance of the activity to the respondents' job. These were scored on a 5-point Likert scale, with 5 indicating 'very high relevance', 4 'high relevance', 3 'average relevance', 2 'low relevance', and 1 'very low relevance'. Similarly, the perceived extent of adequacy of the linkage activities to respondents in facilitating the interaction between farmers, extension agents and researchers was scored on a 5-point Likert scale, with 5 representing 'very high adequacy', 4 'high adequacy', 3 'average adequacy', 2 'low adequacy', and 1 'very low adequacy'. The Cronbach's alphas of 0.88 and 0.87, respectively for extension agents' adequacy and relevance scales; and 0.82 and 0.88, respectively for researchers' adequacy and relevance scales indicated that the scales on the instruments were reliable. Descriptive statistics were used to describe the data. T-test was used to determine significant differences between the perceptions of researchers and extension agents. An alpha level of 0.05 was established a priori for each test.

The formula developed by Borich (1980) was applied to determine the needed linkage activities. This was applied as $NL=(R-A)CR$, where $NL$ is the discrepancy or needed linkage activity score, $R$ is the respondents' (extension agents or researchers) perception of the relevance of the linkage activity, $A$ is the respondents' perception of the adequacy of the linkage activity in facilitating the interaction between farmers, extension agents and researchers, and $CR$ is the average relevance of the linkage activities as rated by all respondents in a particular group. In this study, if a respondent group perceived a linkage activity to be of low adequacy but rated it to be highly relevant to their job, then this was identified as a need. The wider the discrepancy score, the greater the need to give that respondent group the highest priority in that linkage activity.

Results

Background and demographic characteristics of researchers and extension agents

The results of the study showed that the research group was endowed with highly educated personnel specialized in different areas of maize research. The research respondents were mainly research officers (60.7%), while about one-third (28.6%) were technicians. The majority (89.3%) were males and had a working experience of
between 5 to 9 years. Generally, the researchers had a minimum educational qualification of a masters degree and most of them were from a farming background. The educational qualification of extension agents was relatively low when compared to researchers. The majority (70%) held only a post secondary school certificate. Only one of them had a masters degree. More than three-quarters (81%) of the extension agents were males. Half of them were below 41 years old. About 43% indicated that they had worked for between 5 and 9 years.

**Importance of linkage activities**

Researchers rated the importance of the linkage activities generally higher than the extension agents (Table 1). Both the extension agents and researchers considered ‘joint surveys’ to assess the needs of farmers to be the most important linkage activity. Besides visits to monitor research activities (mean = 2.49) and production and testing of training materials (mean = 2.94) which were perceived to be of average importance by extension agents, all the selected linkage activities were perceived to be highly important (mean > 3.0) in forging the link among extension agents and researchers.

Significant differences (p<0.05) existed between the perceptions of researchers and extension agents regarding the importance of some of the linkage activities. While researchers perceived priority setting and planning, conduction of on-farm trials, production and testing of training materials, monitoring, and review of the impacts of research activities to be highly relevant, extension agents on the other hand regarded these activities to be of average importance.

**Adequacy of linkage activities**

Generally, researchers perceived the level of adequacy of the linkage activities to be high, while the extension agents indicated that the linkage activities were low (Table 2). The highest rating for adequacy of linkage activity by both researchers and extension agents was collaboration in on-farm adaptive trials. Except for setting up of farmers’ mini-demonstrations and visits to monitor extension activities, strong significant differences (p<0.05) existed in the perceived adequacy ratings of the linkage activities by both groups. Specifically, while researchers perceived program priority setting and planning, visits to monitor extension activities and review of the impact of extension activities to be of average adequacy, extension agents perceived these as in adequate.

**Needed linkage activities**

All the respondents indicated that they need the selected linkage activities (Table 3). However, extension agents showed a greater need for these linkage activities as compared to researchers. These results are very important and point to the need to forge stronger research-extension linkages with a major emphasis on increasing direct extension agents participation in linkage activities. Based on the discrepancy scores, it appeared that extension agents need to be involved in joint surveys to identify farmers’ needs, joint planning and priority setting and review of the impact of extension activities. On-farm adaptive trials were perceived to be the least needed linkage activity. The discrepancy scores on the other hand showed that researchers are highly in need of joint surveys to assess farmers’ problems, joint production and testing of extension training materials, collaboration in field days and joint program priority setting and planning. Researchers perceived joint training workshops/seminars/courses to be the least needed linkage activity.
Table 1

Means, Standard Deviations, and T-values of the importance of Joint Linkage Activities as Perceived by Researchers and Extension Agents

<table>
<thead>
<tr>
<th>Linkage activities</th>
<th>Respondents</th>
<th>N</th>
<th>Mean</th>
<th>S.d</th>
<th>T-values</th>
<th>T- Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey to assess farmers' needs</td>
<td>Researchers</td>
<td>28</td>
<td>4.29</td>
<td>1.18</td>
<td>0.57</td>
<td>0.57</td>
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<td></td>
<td>Extension agents</td>
<td>47</td>
<td>4.13</td>
<td>1.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program priority setting and planning</td>
<td>Researchers</td>
<td>28</td>
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<td>1.19</td>
<td>2.47</td>
<td>0.01*</td>
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<td>1.27</td>
<td></td>
<td></td>
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<td>Conduction of field days</td>
<td>Researchers</td>
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<td>4.21</td>
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<td>3.76</td>
<td>1.28</td>
<td></td>
<td></td>
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<tr>
<td>Training workshops/ seminars and courses</td>
<td>Researchers</td>
<td>28</td>
<td>4.10</td>
<td>1.03</td>
<td>1.19</td>
<td>0.24</td>
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<td>1.15</td>
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<td>Researchers</td>
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<td>1.15</td>
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<td>1.34</td>
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<td>Production/ testing of training materials</td>
<td>Researchers</td>
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<td>Researchers</td>
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<td>Visits to monitor extension activities</td>
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<td>1.43</td>
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Note: Means computed ranged from 5 = "very high relevance", 4 = "high relevance", 3 = "average relevance", 2 = "low relevance" and 1 = "very low relevance" on the relevance scale; * T-test is significant (p < 0.05)
## Table 2

**Means, Standard Deviations, and T-values of the adequacy of Joint Linkage Activities as Perceived by Researchers and Extension Agents**

<table>
<thead>
<tr>
<th>Linkage activities</th>
<th>Respondents</th>
<th>N</th>
<th>Mean</th>
<th>S.d</th>
<th>T-values</th>
<th>T- Prob</th>
</tr>
</thead>
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<tr>
<td>Survey to assess farmers' needs</td>
<td>Researchers</td>
<td>28</td>
<td>3.29</td>
<td>1.32</td>
<td>2.59</td>
<td>0.01*</td>
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<td>1.21</td>
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<tr>
<td>Program priority setting and planning</td>
<td>Researchers</td>
<td>28</td>
<td>3.32</td>
<td>1.02</td>
<td>3.57</td>
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<td>2.23</td>
<td>1.04</td>
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<tr>
<td>Conduction of field days</td>
<td>Researchers</td>
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<td>3.36</td>
<td>1.16</td>
<td>2.03</td>
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<td>Researchers</td>
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<td>3.82</td>
<td>0.95</td>
<td>2.96</td>
<td>0.04*</td>
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<td>3.96</td>
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<tr>
<td>Production/testing of training materials</td>
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<td>1.26</td>
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<td>0.04*</td>
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<td>1.20</td>
<td>4.91</td>
<td>0.00*</td>
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<td>1.18</td>
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<td>Visits to monitor extension activities</td>
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<td>2.89</td>
<td>1.47</td>
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<td>1.33</td>
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</table>

Note: Means computed ranged from 5 = "very high adequacy", 4 = "high adequacy", 3 = "average adequacy", 2 = "low adequacy" and 1, "very low adequacy" on adequacy scale. * T-test is significant (p < 0.05)
Table 3

Means and Discrepancy Scores between Mean Ratings of Relevance and Adequacy of Joint Linkage Activities As Perceived by Extension Agents (N=47) And Researchers (N=28)

<table>
<thead>
<tr>
<th>Linkage activities</th>
<th>Relevance</th>
<th>Adequacy</th>
<th>Discrepancy*</th>
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<tr>
<td>Survey to assess farmers' needs.</td>
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<td>4.29</td>
<td>2.49</td>
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<td>Program priority setting and planning.</td>
<td>3.38</td>
<td>4.11</td>
<td>2.23</td>
</tr>
<tr>
<td>Review of impact of extension activities.</td>
<td>3.68</td>
<td>3.89</td>
<td>2.77</td>
</tr>
<tr>
<td>Conduction of field days</td>
<td>3.76</td>
<td>4.21</td>
<td>2.74</td>
</tr>
<tr>
<td>Setting of farmers mini - demonstration</td>
<td>3.87</td>
<td>3.92</td>
<td>3.11</td>
</tr>
<tr>
<td>Training workshops/seminars and courses</td>
<td>3.78</td>
<td>4.10</td>
<td>3.06</td>
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<td>Visits to monitor extension activities</td>
<td>3.59</td>
<td>3.82</td>
<td>2.89</td>
</tr>
<tr>
<td>Production/ testing of extension training materials</td>
<td>2.94</td>
<td>3.85</td>
<td>2.32</td>
</tr>
<tr>
<td>Review of impact of research activities.</td>
<td>2.82</td>
<td>4.17</td>
<td>2.21</td>
</tr>
<tr>
<td>Visits to monitor research activities</td>
<td>2.49</td>
<td>4.14</td>
<td>2.06</td>
</tr>
<tr>
<td>Collaboration in on-farm adaptive trials.</td>
<td>3.64</td>
<td>4.32</td>
<td>3.27</td>
</tr>
<tr>
<td>Composite mean</td>
<td>3.46</td>
<td>4.07</td>
<td>2.65</td>
</tr>
</tbody>
</table>

Note: Means computed ranged from 5="very high relevance", 4="high relevance", 3="medium", 2="low relevance" and 1="very low relevance" on the relevance scale; and 5="very high adequacy", 4="high adequacy", 3 = "medium or average adequacy", 2 = "low adequacy" and 1, "very low adequacy" on adequacy scale. *Discrepancy (need) is the product of average relevance scores and difference between of relevance and adequacy scores. This reflects the priority given to a particular linkage activity based on relevance scores.
Factors constraining the linkages between researchers and extension agents

Extension agents and researchers were unanimous in citing infrequent linkage activities, lack of resources and incompatible government policies, lack of effective coordination, low incentives and remuneration and poor road networks as limiting their closer working relationship with each other. Researchers pointed out that the wide educational gap between them and extension agents, the lack of commitment of extension agents to linkage activities, and promotion criteria of researchers as constraints to effective linkages between the two groups. Extension agents on the other hand accused researchers of coming out with objectives outside farmers' goals and not recognizing extension agents as major player in technology development as major factor limiting their closer collaboration.

Conclusion and Educational Implications

The results showed that the maize technology development and transfer system in Ashanti Region of Ghana is endowed with highly educated research personnel who have varied knowledge and skills to conduct research into different problem areas where farmers' indigenous knowledge and extension advice are not adequate. However, the educational gap between researcher, and extension agents is very wide. This factor, according to Seegers and Kaimowitz (1989), can shape the attitudes each holds toward the other and result in increasing tension among them. There is, therefore, the need for educational institutions to come up with innovative programs that can upgrade the educational level of extension agents. The ratio of male to female respondents in the maize technology system is very high. More females should be given the priority in admissions to higher agricultural training institutions so that more females could be trained to tackle female-specific programs in the maize technology system.

The findings of this study suggest, among other things, that researchers and extension agents differed in their perceptions of the extent of the importance and adequacy of the activities meant to forge linkages among themselves. Generally, researchers perceived the importance and adequacy of linkage mechanisms as high compared to extension agents. There is, therefore, the need for wider awareness of the importance of the linkage activities, especially among extension agents in order for them to be devoted to the linkage activities. Similarly, efforts should be concentrated on increasing the participation of extension agents in linkage activities. Specifically, extension agents need to be involved in needs assessment, program planning and priority setting, monitoring and evaluation activities meant to forge links among researchers and extension agents. Involvement of researchers in development and testing of training materials meant to increase awareness of available technologies should be given needed attention. Moreover, linkage issues should be incorporated in the curricula of the educational institutions meant to train researchers and extension agents so that they learn the whole range of linkages and their importance.

References Cited


According to Lansdale (pp. 103-112) three kinds of effective administrators can be observed in organizations and institutions. The "capable administrator" uses management skills to accomplish organizational tasks. The "leader-managers" use their influence to "get followers" effectively involved in accomplishing those tasks. These leader-managers have the ability to inspire their followers. The "inspired leader-managers" go beyond the first two types—adding a spiritual dimension which "makes all the difference."

Those who are familiar with Bruce Lansdale through his book, Master Farmer (1986), or his presence at the annual conferences of the Association for International Agricultural and Extension Education, know about his "Hodja" stories. Hodja is a folk hero, like America's Paul Bunyan or Johnny Appleseed, whose stories reflect the common sense and wisdom of the Greek (and Turkish) village elder. Hodja uses humor, insight, creativity, inspiration, clarity of thought, morality, humanity, balanced perspective, and inspired vision to solve everyday social and ethical problems which are common across cultures. The inspired leader-manager embodies those same qualities.

Browsing through the contents of this book, the reader will find the ten chapters entertaining and accessible. An easy misperception, however, is that the book lacks depth. How much depth can 150 pages contain? Careful reading, nevertheless, will allow valuable insights to emerge. What this book lacks in lengthy academic discussion it replaces with insight. Lansdale's insight comes from 43 years of experience as the director of the American Farm School in Thessalonika, Greece. He has much to tell us about participatory management of community development whether the community is a school, a neighborhood or a community of interest.

Folk wisdom is combined with modern management theory (Lansdale agrees with Tom Peters' Thriving on Chaos: Handbook for a Management Revolution, 1988). The book advocates participatory techniques, customer-centered values, careful planning, management by objectives, and total quality management. It also distinguishes between two different kinds of individuals or organizations with the Greek concepts of nikokiris and kakomiris (pp 13-19). The nikokiris are those who are winners—successful, respected for their judgment, leadership, and management. The kakomiris (literally, the ill-fated ones) are those who always seem to be unsuccessful, down on their luck, and blame others for their misfortune. They bring on misfortune due to their negative attitudes and their lack of planning.

This book is addressed to leader-managers at all levels "...particularly those in voluntary organizations working at home or abroad" (p. xviii). Lansdale notes that the book is not directed at top leader-managers although he hopes they will find it helpful. This book will
probably be least helpful to administrators who are limited by rigid thinking or by rigid rules imposed by top-down organizations. Some academics may, therefore, find this book limiting.

Another limitation is the price. Twenty-eight dollars seems excessive for a paperback book that is 150 pages. Those who invest and read reflectively, however, should find this book to be an excellent investment. The book is available through Kumarian Press, 14 Oakwood Avenue, West Hartford, CT, 06119. Order by toll free phone (800-289-2664) or fax (860-233-6072) or internet at <www.kpbooks.com>.

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Tools of The Profession

Book Review

Thani Almuhairy
Ph.D Candidate
The Ohio State University
The United Arab Emirates University (UAEU)


Let's just all try to create not the cheapest or most expedient programs, but ones that are the most intelligent and ecologically sound and in which every-one benefits

Robert Sylwester, A Celebration of Neurons.

Many authors in the profession have challenged program-planning practices in extension and adult education. Extension professionals are facing the challenge of how to be creative and, at the same time, be responsive to learners needs. Satisfying learners needs means providing the learners with vital knowledge and useful skills to apply in their lives. But, program planners are facing a huge information-revolution as a result of the advancement in the Internet and optical fibers applications. Boyle (1981) stresses the importance of developing an informational framework for program planning practices. Also, many emerging program-planning models suggest that program planners must develop the appropriate content for the program based on identified needs (Koehnen et al., 1997). According to Koehnen et al. (1997), if the conventional program development models stressed technical preparation, particularly in such aspects as designing surveys, analyzing and reporting data, or preparing budgets, the emerging models require the same knowledge and skills and demand additional preparation especially in the political and ethical fields (p. 64). The challenge is how can program planners understand the program content? How can they satisfy other peoples interests? How can they produce high quality programs? Simply put, how can they be creative planners?

A way to become more informative is to use effective learning strategy. In other words, program planners need to increase their knowledge level by adopting effective learning strategy that will save time, efforts, and money, and will help them to become more responsive to the learners needs. Accelerating learning is one effective strategy that extension agents can use to improve and enhance their knowledge foundation with regard to the current technological revolution that named the Internet.

A recent book published by Russell (1999) entitled The Accelerated Learning Field Book is useful for professionals who wants to be a creative teacher, learner, trainer, educator, manager, or program planner. The book consists of three major parts. Part one deals with how people learn. In this part, the author defines accelerated learning as changing behaviors with increasing speed (p. 4). Also, a comparison is made between the traditional ways of learning and the accelerated learning approach as indicated on Table 1. Although the book is dedicated to the purpose of using accelerated learning as an intervention in business, we can still apply its principles in extension practices. Part one includes useful discussions of learning objectives and how programmers can prioritize them through the use of the coat-of-arms technique- a graphical representation of learning objectives. Also, it takes you through some accelerated learning concepts such as determining the learning profile that includes learning styles, how to improve learning intake, how to adjust for different learning styles, and how to manage learners of diverse information.

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processing styles. Chapter four in part one introduces the concept of multiple intelligences: interpersonal, logical & mathematical, spatial & visual, musical, linguistic & verbal, intrapersonal, bodily & kinesthetic, emotional, naturalist, and existential. The last three are the new intelligences types. Chapter five introduces the strategy of using the whole brain approach to learning developed by Ned Herrmann (1988). Chapter six introduces the four aspects of memory: receive, filter, recall, and store. A point made that learners need to increase their ability to retrieve and store information to improve their professional work.

Table 1

<table>
<thead>
<tr>
<th>Traditional Versus Accelerated Learning</th>
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<tbody>
<tr>
<td><strong>Traditional</strong></td>
</tr>
<tr>
<td>Linear</td>
</tr>
<tr>
<td>Knowing about</td>
</tr>
<tr>
<td>Formal, structured</td>
</tr>
<tr>
<td>Conscious</td>
</tr>
<tr>
<td>Memorized facts</td>
</tr>
<tr>
<td>Have to learning</td>
</tr>
<tr>
<td>Hard work</td>
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<tr>
<td>Emotion-free</td>
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<tr>
<td>Passive</td>
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At the end of part two, the author illustrates seven steps in developing the learning events: identify the audience, identify the learning need, create learning objectives, create exercises, sequence learning objectives, create support materials, and evaluate the learning. The last chapter of the book helps planners develop a shared vision with learners. It covers five aspects of building trustworthy relations with the learners that are defining your learning promise, creating a learning mission and vision, creating a marketing strategy, budgeting maintenance, and marketing and learning theory. The last chapter also encourages continuous learning efforts that need to be carried out by planners in their daily life.

The book is full of hands-on-exercises and worksheets, and graphical illustrations of the concepts discussed. Some of the activities are fun to do, but others are very time-consuming. The enclosed music CD is a wonderful gift that not only accelerates our learning, but also resets our brain after daily routines. Program planners can apply the principles discussed in this book to improve their learning capacity and speed up the information retrieval process. Overall, the book provides an excellent view of the learning process. But, there are two major limitations that need to be addressed. The first is the book does not discuss how learners or trainers evaluate the outcomes of the accelerated learning process. The book mentions the word evaluation, but there is no practical evaluation strategies or worksheet to follow. The second is readers should have some background about educational terms such as learning objectives, learning styles, learning theories, and teaching methods because the book does not include any detailed explanations for such concepts. Also, the underlying theory of this book is changing behaviors with increasing speed (p. 4) needs further justification & clarification. It is not clear how one changes behavior and, at the same time, learns fast. The point is we can learn fast, but can we change our behavior fast too? Despite its limitations, the book is still a good choice if you want a new perspective on the planning as well as the learning process.
Association for International Agricultural and Extension Education  
Seventeenth Annual Conference, April 4-7, 2001  
Hilton Hotel, 5500 Hilton Avenue, Baton Rouge, Louisiana, 70808  
Tel. 504-924-5000 Fax 504 925-1330  

REGISTRATION FORM  

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University/Organization: ___________________________________________________  

Address: __________________________________________________________________  

Home Country: _____________________________________________________________  

Telephone: _______________ E-mail: ________________________________  

Fax: _______________________________  

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<tr>
<th>Conference Fees and Selections</th>
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<tr>
<td>Pre-registration (postmarked through March 1, 2001)</td>
</tr>
<tr>
<td>Registration (postmarked after March 1, 2001)</td>
</tr>
<tr>
<td>One-day registration (April 5, April 6, April 7)</td>
</tr>
</tbody>
</table>

Select Journal format — (Select your choice by Check mark):  
_____ Booklet  _____ Diskette  _____ email <e-mail address>  

Would you be willing to serve as a referee for the Journal of International Agricultural and Extension Education?  
_____ Yes  

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_____ Activities  _____ Membership  _____ Constitution & Bylaws  
_____ Resolution  _____ Conference Planning  _____ Legislative  _____ Awards  

Check if you will participate in:  
_____ AIAEE New Member Orientation, April 4  

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Deduct $30.00 if you are a life member  

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The full conference registration fee covers: 2001-2002 dues, conference proceedings, subscription to the Journal of International Agricultural and Extension Education (Volume 9- booklet), awards breakfast, reception, two lunches, cost of meeting rooms, breaks, tours & admissions, equipment rental, and registration material (name tag, program, etc.).
Association for International Agricultural and Extension Education  
Seventeenth Annual Conference, April 4-7, 2001  
Baton Rouge, Louisiana – Hilton Hotel

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Title/Position: ____________________________________________

University/Organization: ________________________________

Address: ____________________________________________

Home Country: ________________________________________

Telephone: ___________________________ E-mail: ____________

Fax: ________________________________

All qualified students will receive a scholarship (1/2 the pre-registration conference fee of $240.00), when completing this form and making payment. This fee will cover all conference activities, the proceedings, an e-mail subscription to the Journal, and a one year Association membership.

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<th>Conference Fees and Selections</th>
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| Pre-registration (scholarship rate - postmarked through March 1, 2001)............................. $120.00 $_____
| Registration (scholarship rate - postmarked after March 1, 2001).................................$133.00 $_____
| One-day registration (_April 5, _April 6, April 7)_......................................................$60.00 $_____

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- Conference Planning
- Legislative
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- Resolutions
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St. Paul, MN 55108-6078

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Association for International Agricultural and Extension Education
Seventeenth Annual Conference, April 4-7, 2001
Baton Rouge, Louisiana - Hilton Hotel
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(Please print name as you wish it to appear on name badge)

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Home Country: _______________________________________________________

Telephone: ______________________ Fax: ________________________________

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(Includes breaks, name tag, reception & tours (includes Shrimparoo) $60.00 ___

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TOTAL $___

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**A special get acquainted session will be held for spouses/guests on Wednesday, April 4 at 2 pm. Please check if you plan to attend this special session ______

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Manuscript Submission Guidelines

Feature Articles

Manuscripts of Feature Articles are submitted to the editor. Four double-spaced copies of manuscripts without author’s name or affiliation are required. The article should include an abstract, a succinct gist of the article’s content, not exceeding 150 words. A separate title page with title, institution, complete address, telephone and fax numbers, and email address for each author is required. There is no submission fee charged for submitting a feature article. A $10.00/page (actual pages in the journal) publication fee will be charged to the lead author upon acceptance to the journal. Articles should be no longer than 12 double-spaced 12-pitch (11 point) pages (including references, tables and figures) with one-inch margins all around.

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Manuscripts of Commentary Articles are submitted to the editor. Three double-spaced copies of manuscripts are required. The article should include an abstract, a succinct gist of the article content, not exceeding 150 words. Include on the first page of the manuscript, the title, and the institution, complete address, telephone and fax numbers, and email address of each author. There is no submission charge for the manuscript, but there will be a $10.00/page (actual pages in the journal) publication fee assessed to the lead author upon acceptance to the journal. Articles should be no longer than 8 double-spaced 12-pitch (11 point) pages (including references, tables, and charts) with one-inch margins all around.

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When submitting a manuscript, indicate type of article - Feature; Commentary; Tools of the Profession - on the first page of the manuscript, upper right-hand corner. Do not send a diskette with your manuscript submission. A diskette will be requested after the article has been accepted. Diskette preparation guidelines will be supplied at that time. Manuscripts should not have been published or be under current consideration for publication by another journal.


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