Going Forward in Teaching and Learning Sustainable Agriculture: Designing an Integrated Agricultural Learning Environment for Women in the New Lands in Egypt

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Abstract

An integrated agricultural learning environment is one of the crucial elements required to advance agricultural and extension education. The empirical ethnographic study was undertaken in 2001 and 2002 to investigate an agricultural education program designed to incorporate appropriate teaching and learning methods specific to gender. The program, conducted in the New Lands in Egypt, taught sustainable agriculture practices to rural women. Instruction featured female teachers, a woman-only cohort, a social learning approach that encouraged personal relationships and cooperative learning, and broad use of strong cultural symbols to convey affective dimensions of adhering to sustainable agriculture practices. Implications to agricultural extension education include the affirmation that the right educational elements, rather than simply a collection of best practices, are required for educational designs that enable resource-poor women farmers to succeed personally and economically.
Introduction

An integrated agricultural learning environment is one of the crucial elements for advancing agricultural and extension education. Designing an integrated agricultural learning environment demands that agricultural educators become acquainted with the “emotional components of learning, gender, social, cultural, economical, and political influences on learners” (Hayes and Flannery, 2000, p. 20). In this empirical study, conducted in the recently irrigated and reclaimed “New Lands” in Egypt, it was specifically important to understand the “cultural, social, gender, and economical contexts” of women farmers (Hayes and Flannery, 2000), including their perspectives as learners and their ideas about sustainable agriculture practices. In this learning environment, women’s learning occurred within the social, cultural, and economic contexts of both the New Lands and their heritage as rural women.

Women learned about sustainable agriculture in a non formal educational setting, similar to ‘short courses’ in the extension system. The non formal extension program featured women instructors, necessitating a focus not only on female farmers but equally on female extensionists. The decision to employ women as trainers in order to teach rural women more effectively horticultural and farm management skills was purposeful on the part of the program. The program’s gender-specific design provided opportunities to understand the dynamics of gender and rural development as crucial aspects of an integrated learning environment. In this case, gender was integrated into several aspects of the program, providing a rich case study of one of the ways that women’s needs could be accommodated by a mainly patriarchal extension system.

Purpose of the Paper

The paper presents findings of an ethnographic study of curriculum, instruction, and adult learning in a non formal agricultural education setting in Egypt, conducted in 2001 as part of the requirements of a master’s study at Iowa State University by the first author. The focus of the study was on gender; specifically, on the experiences of women instructors and women learners in a sustainable agriculture education program. The paper argues that attention to the often-neglected component of gender in agricultural extension education is an essential aspect of an integrated agricultural learning environment. Preparing a proper educational environment for women to learn about agriculture is crucial. Women are an often neglected part of the agricultural production system, and have lower economic and educational levels than men (Axinn and Axinn, 1997; Food and Agricultural Organization FAO, 1998). Additionally, gender differences or gender roles in any aspect of life, including education in all its forms, should not be ignored. Gender differences in education may appear in women’s ways of knowing, acquiring, learning, and producing knowledge (Belenky, Clinchy, Goldberger, and Tarule, 1986). It is important to develop new methods and approaches for educating women to address the disparity. The disparity does not only belong to the needs of women farmers to agricultural extension, but also to women’s needs as learners and as teachers of agriculture. The study explored the ways of learning and teaching agriculture in the non formal settings of adult education, and specifically agricultural extension settings. The study illuminated how gender played a major role in this learning and teaching process.
Theoretical Framework

The two adult learning theories employed in this study were social learning theory by Bandura (1977), and functions of imagination and emotions in education by Vygotsky (1997). Bandura (1977) stated that “all learning phenomena result[ed] from observing other people’s behavior and consequences of this behavior and enable[ed] learners to acquire large integrated patterns of knowledge” (p.12), and people learn through “continuous reciprocal interaction of personal and environmental determinants” (P.9). People learn from observing each other (Merriam and Caffarella, 1999). Vygotsky (1997) stated that “associating emotion with the elements of the taught subject will always make that subject real in learners’ minds. Therefore, it is essential to arouse appropriate emotions in learners because every emotion possesses its own internal and external expression in learners” (p.152).

Theories and studies of women in development, agricultural extension, women in agricultural extension, and women in sustainable agriculture were also explored. Cultural and religious influences on agricultural education for women in Egypt are also crucial.

Methods

The core task of the study was to explore the phenomenon of teaching and learning agriculture within social and cultural complexity of the setting. Qualitative research was used in this exploratory and descriptive study. The study was conducted in the New Lands in Egypt on programs administered by a predominant center of agricultural research and education. The study focused on a group of women who worked professionally as agricultural educators and a group of women who were learning to raise herbs and other high value crops on the New Lands. Together, they formed what Patton (1980) referred to as the “purposeful sample.” Both women teachers and learners were interviewed totaling eleven (six women farmers, two women educators, one female administrator, one male administrator, and one male educator). The selection criteria reflect what Maxwell (1996) referred to as a “single setting.” This study was not intended to give rise to generalizations about all agricultural educational settings or about all women farmers or women extensionists. However, Maxwell (1996) noted that “there is no obvious reason not to believe that the results apply more generally. Generalizability in qualitative research is based on the development of theory that can be extended to other cases” (p.97).

Core research questions were developed before going into the field. Fieldwork was conducted in Egypt by the senior author from December 2001 to January 2002. Additional questions emerged in the field after interviewing and visiting with the research participants and with other people important to the phenomenon of teaching and learning agriculture in this region. Other research duties included gaining access to the site, selecting research participants, and establishing rapport with the research participants. The researchers conducted in-depth interviews, participant observation, gathered visual documentation (photography and video tape), and analyzed documents. The data were analyzed and synthesized into categories and themes in order to arrive at the findings and conclusions of the study. Interviewees’ real names were coded. Most of the code names describe the main feature of the women when translated into Arabic language.
The interviews were conducted in a local dialect of the Arabic language, then translated into English language by the first author. The translation process has to involve what Sechrest, Fay, and Zaidi (1972) called achieving the “experiential equivalence” and what the author called achieving the “cultural sensation.” The cultures of the two languages are different in the nature of social aspects, way of life, and beliefs. As a result, direct translation (i.e., word by word) may not provide an accurate meaning in the English language. Therefore, the researcher translated the holistic meaning of the cultural expressions, terms, and jokes into English with careful selection of analogous meanings in English that made sense yet did not substantively change the meaning.

To insure validity and diminish error, as Maxwell (1996) recommended, “triangulation,” or the use of multiple or diverse sources of data, is applied to the methods of data collection. In this study, in-depth interviews, participant observations, and document analyses were used as methods for obtaining data. Triangulation also decreases the risk that conclusions will reflect systematic biases of the researcher or limitations of a specific method (Maxwell, 1996).

Findings

Findings in qualitative research involves the researcher making meaning of the data and finding the story after understanding and listening to the research participants (Glesne and Peshkin, 1992). The researcher intended to create a “vivid reconstruction” of women farmers’ voices and their teachers’ voices to communicate their experiences to people in other parts of the world (LeCompte and Preissle, 1993).

Background of Women Farmers

The women farmers who were interviewed for this study came from the heart of rural Egypt. They immigrated with their husbands to the New Lands about five years ago. All of them grew up on farms within farm families where agriculture generated the main income for the family. All of them were reared according to traditional principles of rural Egypt. Arranged marriage is the common type of marriage in many places in rural Egypt; however, women must agree upon the choice for the proposed husband. In rural Egypt, women are expected to be a virgin when they marry. In other words, women are not supposed to have any sexual relationships before marriage, regardless of age, religion, or background. During marriage protocols, some fathers like to state to the bridegroom “I give you my virgin daughter.” The level of education earned by most of the women farmers in this study is a high school diploma and, what is called in Egypt, a “specialized degree.” This degree requires two additional years of study after high school in a certain field such as agriculture, electrical engineering, or commerce. This degree is parallel to degree earned in community colleges in the United States.

Dynamic of the Educational Setting

The goals of the program were to educate women farmers about sustainable agriculture and to assist them use organic production methods on their farms. The overarching rural development goal of the program was to boost development opportunities
for women in the region. The educational setting for horticultural training was an outdoor setting. It did not take place within the walls of a classroom unless there was severe weather, such as strong winds, sandstorm, or extremely hot temperatures. The group in this educational setting consisted of two teachers and nine women farmers. They met three times per week. Two of the three sessions took place on one of the organic model farms nearby. This enabled the women to observe farming practices first hand and to practice by hand. Every third session the group visited one of the trainees’ land in order to observe her farming practices, critique what she did on her farm, and learn from her experiences. The hostess farmer demonstrated practices she applied in her land.

There was not a lot of writing and instructing in the sessions. Women were not required to write down every thing the teacher said. They wrote a few notes when it came to measurements, numbers, amounts, temperature, or harvesting marks. The educational setting was more like an interactive social setting than an instructional one. Women continuously talked, asked questions, answered questions, expressed ideas, explained procedures, and worked with their hands. The teacher elaborated on the answers that women gave each other by adding few things or emphasizing what the farmers said. The teacher encouraged cooperative learning and praised learners who shared their experiences with the group. There were lots of interpersonal interactions, technical demonstrations, and hands-on activities, much more than there was lecture. From time to other, the teacher told stories about land or about organic practices, natural processing for produce, and proverbs about land and agriculture and social life.

**Characteristics of Teachers**

The first component found in the learning environment was comprised of the teacher’s characteristics, interpersonal skills, and instructional habits. These elements played a major role in shaping teaching and communication in the setting. The program planner said regarding her choice of teachers,

> I would like to hire a woman agriculturist for this mission who is friendly person, social, local, speak their language, in addition to her background of environmental science and her beliefs in organic agriculture. I think this person would be to influence these women farmers learning. I want these women development to be economically, environmentally, socially, and personally [break] I would like them to form a well educated and developed community. (Interview: program planner).

Enthusiasm. The teacher who was hired was enthusiastic and passionate. She was enthusiastic about her job and about the innovation of the non formal setting for women’s horticultural training. She was passionate about sustainable agriculture and about practices that protect the environment. Her enthusiasm created an energetic learning environment. She consistently conveyed excitement about the topic and expressed this same enthusiasm in the learning setting, which had the effect of making the women eager to learn and participate. Learners consistently paid attention; they typically anticipated that exciting things would occur and expressed that they did not want to miss the excitement. The teacher said, “We are here for an elegant purpose, which is saving our resources and our environment.” She also noted, “We can make difference by keeping our natural resources pure and clean.” Additionally, when visitors observed the women’s organic farms, the teacher introduced the women farmers to them cheerfully, with statements that conveyed her belief in their capabilities. The teacher said to visitors: “You will be with a bright, knowledgeable, and
expert crew who will take you on a tour in one or two of the organic farms to introduce the
new farming methods to you.”

Encouragement. Teachers frequently encouraged the women verbally, using praise as well as
maintaining a friendly environment. In an interview, one of the women farmers said about
the teacher:
She served as a cheerleader, not only as a teacher. She cheers for us whenever we learn
new technique and apply it. She encouraged me when I answered one of my friend’s
questions about plotting herbs. Explaining what I did on my land, it made me happy
and motivated to do more new things and discuss it in the session.

Whether internal or external, motivating learners was an important factor in the
success of the educational process. Motivating learners assists learners to develop a level of
self-confidence that enables them to conquer new things with less fear. The external
motivation that the teacher supplied to her learners played a major role. The teacher also used
to say encouraging statements such as “good job”, “excellent”, and “great” to her learners.
She also used to praise what her learners did even if it was a small deed (participant
observation). A woman farmer said:
I felt anxiety at the beginning of the course. I didn’t like to talk in classes. It is how I
was raised in my rural home city. Until I talked with her, she encouraged me so much
to participate, she started the conversation with me, she supported what I said, and I
felt the courage to speak again in class.

Friendship. The teacher in this educational setting developed friendship between herself and
her learners as a way to develop trust and accountability. Friendship and sociability were
together a way to develop a well-connected network so that members work closely together.
The teacher was friendly to all women farmers. She occasionally socialized with them and
welcomed them in her house or land. The friendly environment that the teacher believed in
assisted women to trust her and think of her a worthy source of information. The teacher
realized that these women needed to remove tension or anxiety they hold about education,
particularly, agricultural education due to their rural background. In the art of teaching
adults, a certain amount of friendship and sociability creates an amiable learning
environment free of anxiety that learners may hold. In the first step in carving her teaching
piece, the teacher chose building friendship with women learners. The teacher said “By
being their close friend, I am opening their minds to accept what I say, trust me, and
negotiate with me for what they don’t agree on. My words will no longer be instructions,
they will be advice.”

Virgin Land: The Unforgettable Symbol

Women farmers in this region had cultural norms and beliefs based on their upbringing in
rural communities. The women teachers of the program understood these beliefs and utilized
them in the educational process. Women teachers used symbols in their teaching that were
powerful and derived from the local setting. One of the most unforgettable symbols was the
analogy of the New Lands as a virgin woman. Virginity, for members of rural communities
in which the women were reared, is valued and worthy of the utmost protection. What made
the analogy particularly appropriate is that the word ‘land’ in Arabic is a feminine word,
already imbued with attributes associated with females and with social definitions of femininity. Virginity, in Egyptian culture generally, indicates newness, freshness, and purity. Although this paper cannot delve into the complexities of the concept of virginity for women, it is worth mentioning that rural women were expected to be virgin until officially married. Otherwise, a woman might not be as preferred as a wife-to-be by a majority of the men and might not be respected by family and friends.

Accordingly, associating organic agriculture, and the New Lands (which had not been previously farmed using conventional agricultural practices), with virgin status provided a way to persuade the women that the organic practices were not only preferred or economic, but a serious matter of protection that, if violated, would result in deep wounds to reputation and status. One of the teachers said,

We know how important it is for rural Egypt that women must be virgin [break] I exemplified land with virgin women and organic agriculture will protect this virginity to make it easily for women farmers to understand and to value. It showed them how important for this new land to preserve its newness and pureness. It made them feel the necessity of land and natural resources protection in the new land.

The data demonstrate the extent of women’s internalization of the analogy:

I am willing to do organic agriculture because it protects land virginity. It will make the land always valuable as well as its products.

The land is virgin. Why should we mess up this virginity with chemicals?

Both instructors used the term virginity many times in training. One said, “I liked that image. It made my job easier. I don’t need to express how important is organic agriculture or resources preservation that often to women. They feel it just from the word virgin.” Of prime importance to consideration of the issue of gender in the agricultural education profession, interview subjects realized that development of the term as part of instructional approach would not have been embraced had the instructors been male. In this culture, women are very private and they would not be comfortable discussing virginity with men. Men teachers would not also feel free to discuss these issues. A male teacher said “I would only focus on the practical organic agriculture and natural resources theme. I have not thought about that symbol before.

Bandura (1977) said that using symbols provides humans with a powerful means of dealing with their environment and enable processing and preserving experiences in forms that serve as guides for future behavior. Vygotsky (1997) determined a function in which learners imagine subjects that are symbolized, however, he figured out how important that learners be very familiar with the elements that form the imagined subject. The emotions that coexisted with the elements of imagination; e.g. virginity, as Vygotsky (1997) mentioned, stimulated the emotional function of these women memories, turned the land’s virginity image into a real subject in these women minds.

Social Learning and Interaction

Women farmers found themselves in the middle of friendly interactive environment, which was new for them in terms of the educational methods. They sat in a circle, or grouped around something to watch, in both cases they interact with other. The teacher sets in the
center or between them in the circle. Women farmers mimicked some of the teaching techniques when they gave presentations as well. They asked questions, they responded to each other, they shared their agricultural and personal experiences. All the while, they developed friendships. Women used terms that suggested the importance of social learning, for example: We, us, gathered, together, join each other, friendship between us, and sisterhood. They also noted, “learning from each other’s experiences, learning with each other, socializing together, sharing our experiences, watch each other, presenting our work, explaining to each other, listening to each others opinions, wonderful network, support each other, and interaction.”

Interaction with teacher in this nonformal setting assisted women farmers as learners to rebuilt self-confidence that they probably lost in most of the previous educational settings. Interaction with teacher also supported their personality development. One advantage that theoretically was grounded from social learning in this setting is personality development. Personality development included various aspects with women learners in this setting such as developing skills of making decisions, asking questions, and presenting answers. Bandura and Walter (1963) discussed personality development as a useful result of social learning.

Educational Importance

Designing an integrated learning environment in agricultural extension education includes the affirmation that the right educational elements, rather than simply a collection of best practices, are required for educational designs that enable resource-poor women farmers to succeed personally and economically.

Designing an integrated learning environment and creating a learning community depends on rediscovering and incorporating adult education theories and teaching tools that stimulate “emotional function” in agricultural education on sustainable agriculture in order to develop sympathy to environment, and rediscovering and incorporating adult education theories that develop interaction and collaboration. Designing an integrated learning environment and creating learning community depends on understanding the cultural, social, economic, and gender contexts that influence learners. One of the neglected dimensions of most designs of integrated learning environments in agricultural extension is gender. This study demonstrated that gender dimensions can be woven into several aspects of a learning environment. We argue that the synergy developed by attending to gender in more than one aspect of an educational program can lead to success where other attempts at integrating gender have failed. Specifically, the study suggests that the following elements combined to create powerful conditions for the blossoming of rural women as new farmers in the New Lands of Egypt:

(a) women instructors
(b) symbols unique to women
(c) symbols with powerful emotional and cultural linkages
(d) social learning environment rather than lecture
(e) cohort (class) of women only
(f) instructors permitting social relationships between teachers and learners.
References


