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The New Adult Education: Bringing Peer Educators Up to Speed

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Introduction

Extension educators often share teaching tasks with peer educators. Successful Extension education may involve farmers teaching farmers, teens teaching teens, or parents teaching parents. Lay educators may participate as volunteers, cooperators, or as members of co-sponsoring organizations.

Peer education's success is frequently attributed to the empathetic relationships inspired by credible peers who

participants trust to be "one of them" (Chambers, 1997; Hassanein, 1999). Another apparent ability of peer educators is their knack for motivating learners by using familiar rhetorical styles, including the appropriate jargon. Peer educators are often familiar with the learners' knowledge gaps and preferences for instructional styles. This familiarity is believed to shorten the needs-assessment process (Bunch, 1995). Several texts on farmer-to-farmer education suggest that it is precisely the lack of formal educational training that makes peer educators great, which is accomplished by avoiding the social distances that result from professional training of traditional Extension staff (Chambers, 1997).

Although these analyses are attractive, they are incomplete. The analyses do not, for example, successfully explain the failures of peer education. Like the rest of us, peer educators can fail. Peer educators can be boring, irrelevant, inappropriate, and even condescending, all of which detract from the learning venture. This article presents ideas for improving the teaching abilities of peer educators when they partner with Extension.

Educational Needs of the Peer Educator

Improving the educational knowledge and skills of peer educators would increase their effectiveness. Training in high-quality instruction need not ruin their abilities to connect socially and culturally with learners, as long as peer educators are introduced to instructional approaches that respect the political interests that peer educators bring to the partnership.

Like Extension educators, peer educators make some decisions based on organizational and personal interests (Cervero & Wilson, 1994). To deny peer educators an opportunity to develop as teachers out of a notion that their "natural" qualities make them automatically successful, smacks of romanticism and denies non-Extension change agents a chance to develop personally and professionally.

The final impact of failing to support the development of peer educators is lackluster learning by constituents. Moreover, one of the Extension system's areas of expertise is nonformal education. Therefore, it makes sense for Extension to play a leadership role in democratizing the teaching task by building the capacity of lay educators.

In Iowa, we had occasion to address this area of programming for two types of peer educators. The first group was composed mainly of "farmer cooperators" who belonged to a nonprofit association called Practical Farmers of Iowa. We also met with pesticide applicator educators. Although some of the trainers possessed an adult education background, or worked for Extension, most did not.

Case No. 1: Farmer Cooperators

Practical Farmers of Iowa is a membership organization that has pioneered farmer-centered and on-farm research of sustainable agriculture practices since the 1980s (Exner, 1995; Exner & Thompson, 1998; see also <http://www.pfi.iastate.edu/PFIhomenew.htm>). Members of the organization, with support of staff of Iowa State University Extension, have produced fact sheets, conference papers, and videos on sustainable farming practices and on processes farmers can use to conduct research on their own farms. Farmers who participate in research trials are termed "farmer cooperators."

The research that farmer cooperators conduct is distinct from field trials and demonstrations trials conducted on working farms by university or industry researchers. The designation of "on farm research" means that farmers control the research question, research design, management of treatments and controls, data collection, and interpretation of results (Exner & Thompson, 1998; van de Fliert & Braun, 2002). They share results of their research during an annual conference, through an annual report, newsletter articles, and during field days. Farmer cooperators are expected to take lead roles in explaining their research results directly to visitors and conference goers as part of their commitment to farmer-to-farmer education, especially during field days (see also Hassanein, 1999).

To support farmer-to-farmer education, Iowa State Extension supports Practical Farmers of Iowa farmer cooperators with fact sheets on the logistics of conducting field days on their farms. These logistics include:

- Proper signage,
- Acknowledgment of collaborators and funders,
- Timing of refreshments,
- Designation of an efficient tour route,

- Arrangement for transportation to remote fields,
- Ways to explain results of on farm research trials, and
- Development of visuals to show data from research trials.

Farmer cooperators host between 25 and 250 visitors during field days.

Grudens-Schuck and Cramer, educational researchers with professional training in nonformal adult education and qualitative inquiry, observed that farmers typically lectured, thereby using a narrow, and not always effective, educational technique. Furthermore, Exner expressed concerns that farmers regularly invited agronomic consultants, university researchers, and Extension and agency staff to take a lead role in explaining key concepts during field days. This decision resulted in reliance of farmer cooperators on specialists rather than on their own expertise.

These observations were important because although PFI welcomes partnerships, it is foremost a farmer-to-farmer organization that prides itself on the capabilities of farmers to conduct research and to report findings (Exner, 1995; see also van de Fliert & Braun, 2002). Based on observation of participants over two summers' worth of field days by Grudens-Schuck and Cramer, and additional observations of Exner, the co-authors determined that there was a need for training of peer educators in adult education.

Case No. 2: Pesticide Applicator Educators

A second group that gained our attention was pesticide applicator educators. The goal of pesticide applicator certification is to promote safe handling of pesticides to protect human health and the environment. Some North Central states offer informational sessions for producers in preparation for a certifying exam. Educational sessions or credits also are offered in some states to facilitate recertification. Educators who conduct sessions for producers may be from industry, from Extension, or from production agriculture.

Peer educators are typically knowledgeable about crop production, plant pathology, entomology, or pesticides, but are new to adult education and often are not familiar with alternative education techniques. Mainly, pesticide certification educators have a tendency to lecture, making their approach to adult education similar to that of farmer cooperators.

The confounding issue associated with pesticide applicator education is its close association with regulatory procedures that govern the use of pesticides. In some instances, "teaching to the test" through an emphasis on memorization of facts occurs even though the purposes of pesticide safety and handling programs have moved beyond a narrow regulatory agenda (General Accounting Office [GAO], 2001). These observations led co-authors Grudens-Schuck and Shour to conclude that peer educators working in this venue would benefit from training in alternative approaches to adult education.

Principles of the New Adult Education

The new adult education is new in the sense of being "new to many." Extension educators are likely to have been introduced to one or more of its key principles; peer educators are less likely to have had the exposure.

The approach to adult education that our initiative featured is termed "constructivist" or "transformative education." It is a strategy for educating adults inspired by research in the 1980s that is still finding its feet in the world of practice. These theories were built upon early 20th century revolutions in psychology, philosophy, and sociology, integrating distinct views of identity, group dynamics, and cognition.

The new adult education contrasts sharply with forms of adult education that emphasize lecture and memorization. The standard formula for teaching adults typically features oral presentation skills, such as clearly articulated speech, and the ability to plan logical, accurate technical presentations. Skills training in this vein might include workshops in PowerPoint presentation skills, design of overhead transparencies, and the use of humor in presentations. Efficiency and compactness are valued in lecture-style presentations of content knowledge. Providing a demonstration may be encouraged, and it is also recommended that educators "know their audience" and especially training needs.

However useful, traditional skills are not the focus of new approaches to adult education. Novel principles of adult education have re-shaped core assumptions about the way adults learn, leading to a distinct set of practices (Merriam & Caffarella, 1999). Lecture is specifically de-emphasized. The principles of contemporary

adult education that we introduced to peer educators follow.

1. Prior knowledge is key.
2. Strong emotions and aesthetics influence learning.
3. The range of normal human cognitive processing is wide.
4. Shared learning makes a difference.
5. Transfer of learning to the workplace requires preparation.

The learning task requires adults to integrate new knowledge with existing knowledge; therefore, the teaching task must address this phenomenon directly. Adults have prior knowledge about most things, not just in their area of specialization. As a result, learners arrive at an Extension meeting already knowing about the topic the educator plans to teach.

Prior knowledge, however, varies in quality and status (Brookfield, 1987). Adults may possess some correct knowledge, some incorrect knowledge, and some incomplete knowledge. A term that is sometimes used to describe incomplete or unworkable prior knowledge is "misconception." Moreover, the status of the prior knowledge differs--it may be functional or dysfunctional, conscious or unconscious.

In addition, some of what the learner knows may be technical, such as a Latino farm worker possessing knowledge that pesticides are harmful only when they can be tasted, smelled, or seen (Arcury, Quandt, Rao, & Russell, 2001). This misconception leads to unsafe behaviors when working with particular types of crop or livestock systems. Other knowledge may be social, such as a "grazier's" belief that other farmers are always the best source of information (Hassanein, 1999). This belief may limit a farmer's access to additional information resources.

Regardless of quality or status, prior knowledge is full-bodied and resistant to change. Adults must undergo an active process of unlearning before new knowledge can be acted upon in ways that are appropriate (Mezirow, 1991). Therefore, primary tasks of the educator are to: surface adults' prior knowledge and, if needed, to assist adults to unlearn what they already know (Brookfield, 1987). A strategy for surfacing and changing unwanted knowledge involves surprising learners with situations that enable them to experience a disorienting dilemma (Mezirow, 1991).

A disorienting dilemma might be caused by a person acting in a way that is unexpected, or by the presentation of a carefully designed science demonstration that cannot be explained in the usual way. The subsequent "shake-up" causes the learner to become confused and to doubt his or her prior knowledge. In this way, new knowledge is able to influence former knowledge, leading to desired changes in behavior.

This is a necessary, but delicate business because knowledge is intricately connected to cultural belief systems. "Culture" is valued by individuals and the community and should be respected rather than disregarded (Naylor, 1996). Therefore, the educator needs to know which specific beliefs could be challenged (and which could be left alone) in order to re-shape dysfunctional knowledge (Naylor, 1996). This decision requires critical reflection and discussion with others, including professional colleagues and learners (Heron, 1999). The decision requires an awareness of ethical dilemmas present in an age of pluralism.

In addition to these challenges, it is also crucial to understand that learning is not solely cognitive (Mezirow, 1991). The disorienting experience may be accompanied by a range of emotions in learners, from anger and fear to joy and relief. Strong emotions are not aberrant. In fact, failure to engage emotional sensibilities may imply learning failure (Heron, 1999). Many of us value end-of-session evaluations that document learners' happy, satisfied experiences at our events, but a more meaningful assessment may be to track discomfort, surprise, confusion, and regret (Brookfield, 1987). Because of this, adult educators also need skills for managing strong emotions (Heron, 1999).

Adult educators also must come to terms with the grandeur and complexity of the human condition, especially as it relates to learning. There is much that is known--and much that is discovered daily--about the interplay of genetics, physiology, environment, and culture. What can be stated with confidence is the existence of a wide range of processing abilities. There is no magical formula for teaching farmers or any other group. It is

reasonable, however, to assume that at some point in time:

- a. Some people learn particular concepts more surely through experiential, "hands-on" learning (Kolb, 1984);
- b. Some like to progress from the "big picture" concept to smaller details;
- c. Some individuals readily connect learning to personal and social concerns (Mezirow, 1991);
- d. Some adults learn better in social environments that emphasize discussion and cooperative tasks.

Researchers tell us, however, that despite earlier hopes that instructional units could be based wholly on an individual's learning preferences, there is no straightforward way to apply principles associated with learning styles. Because of this, providing different types of instruction within a single setting is recommended.

Last, there is the issue of transfer of learning (Caffarella, 2002). Learning in a workshop or field day does not guarantee application at home or the workplace where physical and social conditions may be quite different. Physical conditions distinct to the workplace may include high noise levels, high wind, low light, or hot and humid conditions. Social conditions in the work context might include an inflexible supervisor, frequent interruptions, a resistant partner, concerns about privacy, or gender dynamics. Mimicry of the local situation is accomplished through experiential and active learning (Kolb, 1984). Duplicating, even for a short time, the physical and social conditions to which the learner will return can increase usage or identify barriers that would require additional problem solving.

From Principles to Techniques

Techniques derived from the principles of the new adult education already include some of Extension's long-standing and venerated techniques, such as using stories to illustrate social dimensions of practices, role play, and providing opportunities for people to touch and manipulate solid objects. These Extension education techniques are well established, if infrequently utilized.

The newest piece for most peer educators is the constructivist approach. The approach includes:

- Surfacing and assessing prior knowledge,
- Providing opportunities for unlearning,
- Facilitating discussion and reflection,
- Designing and conducting experiential learning opportunities, and
- Assisting learners to manage strong emotions associated with these processes.

Managing a constructivist learning experience isn't more difficult, but may involve shedding old habits and adopting new ones.

We first recommend that educators put a solid effort into helping learners identify what they already "know." The educator then can pinpoint more accurately the prior knowledge that gets in the way of more appropriate behaviors. A producer's belief that he or she already handles pesticides safely might be a form of inaccurate or partial prior knowledge.

For attendees at a certification workshop, an educator can identify the extent and accuracy of knowledge in several ways: through silent writing (through a 'pretest' or by writing on an index card) or by asking good questions, for example, "Tell how you mix pesticides--describe everything you do and wear." An instruction could also organize a role play or another experiential event and observe naturalistic behaviors. For example, the instructor might provide a (mock) pesticide mixing tank, display a collection of objects that might be found near the mixing station (safety gloves, goggles, cigarettes, donuts, a wash station), and ask attendees to prepare for handling pesticides "as they normally would." If learners physically perform the movements themselves, then their actions can be compared with recommended practices.

Educational research tells us that this may provide powerful motivation to learn. It is important to recognize that if misconceptions or dysfunctional beliefs are neither identified nor challenged, the rest of the event may have little impact, no matter how well one's PowerPoint presentation is designed.

Powerful experiences by themselves, however, are limited in their effect. The disorienting dilemma or

experiential event must be followed by reflection in order to refine and settle new knowledge (Kolb, 1984). Moreover, when attendees are permitted to reflect and discuss the experience, social learning comes into play. This helps to anchor new ideas onto destabilized frameworks of knowledge. Reflective exercises can be followed by lecture presentations of technical material. In fact, lecture can be more effective when nestled into a constructive curriculum.

Peer educators may not be accustomed to planning and conducting reflective activities, but planning for reflection isn't hard; it is just not generally in the viewfinder of most lay educators. In its most basic form, it involves keeping a close eye on one's watch in order to reserve time for learners to think more deeply.

An easy way to accomplish reflective discussion is to ask attendees to respond to the question: "What did you learn about [yourself, pesticides, safety, etc.] from doing the exercise?" Debriefing can be done orally or in writing. The trick to conducting successful reflective activities is to refrain from correcting learners or inserting mini lectures. If attendees' learning does not conform to your standards, fix it later, not during reflection. If reflection is done well, learners may "fix" the misconceptions themselves.

A crucial element is planning for transfer of new learning to the workplace, home, or farmstead (Caffarella, 2002). For example, farmer cooperators frequently talk about "skeptics" who attend their field days. In particular, farmer cooperators know that they must convince visitors of the economic feasibility of sustainable farming practices employed on their farm. Not all such practices are money-savers, but neither are all sustainable farming practices more expensive.

There also is a special stigma in Iowa attached to avoiding the use of herbicides in the production of row crops such as soybeans and corn, so cropping practices that avoid the use of herbicides are more likely to be contested. New approaches to adult education require addressing the emotion attached to the stigma of sustainable farming practices, as well as technical information needs. When emotional and technical dimensions are addressed during the field day, there is a greater chance that attendees will experiment with new practices upon returning home.

We therefore recommended use of the following technique by farmer cooperators as they conducted the field day. We suggested that cooperators ask attendees to imagine the three worst and three best outcomes that could occur if they applied a technique learned at the field day on their home farm (technique adapted from Jeff Goebels, Washington State University). We then directed farmer cooperators to invite 6-8 attendees to verbalize the outcomes aloud. Making fears, as well as hopes, public can be cathartic and lead to important insights (Heron, 1999). It also provides information for the peer educator, enabling targeted follow-up. The idea is not to talk someone out of their fears or reign in their hopes, but to let permit fears and other emotions to be part of the learning experience. When learners are restricted to the expression of technical concerns, their learning is also restricted.

Introducing the Model

The new model of adult education and its associated techniques were introduced to both types of educators. Grudens-Schuck provided a written handout that described adult learning principles to farmer cooperators (Grudens-Schuck, Othman, & Cramer, 2001) during a workshop at the Practical Farmers of Iowa conference in spring 2001. A similar handout was provided to pesticide applicator educators in a similar workshop during a regional pesticide applicator educators' conference in spring 2002. Exner, Grudens-Schuck, Cramer, and Othman (2001) also developed a set of cards (one principle per card) that farmer cooperators could bring into the field as they conducted farm tours.

Peer educators from both groups received the training enthusiastically, although pesticide applicator educators expressed greater overall familiarity with teaching techniques. The techniques were demonstrated (modeled) as well as communicated through lecture and the printed materials. Workshop attendees identified two challenges as impediments to adopting or adapting the contemporary model for adult education:

1. Low confidence in facilitating discussions, and
2. Concerns related to subject matter mastery.

Challenge No. 1

Peer educators from both groups expressed a lack of confidence in their ability to facilitate successful discussions. Most stated that they believed discussions played a valuable role in learning. However, they doubted their ability to stop discussions once they had begun. The workshop had included suggestions for limiting length of discussions, but did not devote time to practicing "starting and stopping." When there is an affective barrier to learning, such as a fear that discussion may "get out of control," experiential and kinetic learning (role play, simulation) is recommended (Heron, 1999).

Challenge No. 2

Pesticide applicator educators were concerned with providing correct technical information, such as information crucial to safe use of products or required for testing (certification). Anxiety related to a loss of subject matter focus is common among Extension staff new to constructivist approaches to learning (Grudens-Schuck, 2000). Maintaining engaged learners in the time slot allotted was of prime importance. Several pesticide applicator educators stated that they were unconvinced that discussions would fully prepare attendees to pass the test and to apply pesticides safely and effectively. Certification educators also were aware of the political and regulatory pressures associated with mandatory applicator training. These pressures contribute to the reluctance of some learners to engage with the subject matter (see also GAO, 2001).

As a partial antidote, the educators were encouraged to use training time to surface and acknowledge the complexities associated with the history of pesticide regulation. Acknowledgement would expose prior knowledge and engage learners, thus preparing the way for more successful technical learning. However, tracking the achievements of learners who attend sessions employing principles of contemporary adult education might produce more convincing data. Some pesticide applicator educators remain convinced that "covering the material" in a continuous lecture format is superior.

Conclusions

Although concepts of the "new" adult education may be familiar to Extension educators, these principles may not have reached our partners, notably peer educators. Peer educators, to the extent that they rely on lecture-style modes of instruction, would benefit from learning core principles of adult learning to reach our common audiences more effectively.

Least familiar to peer educators were strategies for designing disorienting dilemmas that would cause unlearning as preparation for new learning. Peer educators who participated in the training further suggested that more attention be paid to conducting effective discussions (how to stop as well as start), and to gaining a better understanding of the way in which experiential and active learning articulates with mastery of subject matter.

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