Expansive Collaboration: A Model for Transformed Classrooms, Community-Based Research, and Service-Learning[1]

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Abstract

The Expansive Collaboration (EC) Model suggests methodologies promoting education for sustainable development. This EC Model, though not new, stresses: 1) communities be involved as vested partners; 2) collaborations include significantly different disciplines representing humanities, agriculture, art, business, engineering, health, communication; 3) tribal colleges or other non-Western (non-European derived) culture institutions link with non-native serving institutions; and 4) all stakeholders focus on a community-selected issue using the holistic process. The EC Model, designed to link institutions serving different cultures to focus together on a specific local or international community, developed over 10 experimentation years, with eight higher education institution partners, 130 students in overseas (Mali) components, and estimated 3,000 in U.S. classroom components. This model works in different educational and community settings with or without formal service-learning components. Authors present the Model's theoretical background and role in providing students in disciplines within and "beyond" agriculture with tools to implement sustainable development and use the holistic process. The Model operates under the premise that teaching environments, created when these diverse working teams form, deepen student interest and learning by promoting critical thinking, creative problem-solving, and enhance communication skills needed to solve nuanced issues. These transdisciplinary, multi-institutional approaches create synergy not possible with a simpler collective.

Keywords: transdisciplinary collaboration, agriculture-based service-learning, international service-learning, sustainable development, holistic, poverty, participatory, transformative education, diversity

Introduction

Today's students in higher education are mainly in the "Millennium Generation" (Millennials) or are adult learners. Adults are the fastest-growing segment of today's undergraduates (NCES, 2009). Adult students are twenty-five years of age or older, responsible for themselves financially and educationally, often with competing sets of adult roles (Kasworm, 2003). These students are ready to learn, but are often place- and job-bound, but wanting specific education to advance in the job market (Holyoke and Larson, 2009). Adult students also want to leverage their own experience, solve specific problems, and apply new knowledge immediately (Knowles, 1970). The other main component of today's undergraduates is the Millennials (16 to 24-year olds). Millennials move strongly and confidently into society, sharing with their GI-Generation great-grandparents (born 1901-1924) a concerned engagement to right the worlds wrongs (Strauss and Howe, 2000). These students come to classrooms with a social agenda and ask for practical skills and experiences to connect them immediately with responsible, environmentally- balanced living, professionally and personally. Socially responsible students want to know about issues of and failures of aid to material poor communities, ideas of sustainability, equality, holistic engagement, and transdisciplinary thinking.

The holistic process is useful in each of these areas in which students search for knowledge and skills. This process was first defined by Savory and Butterfield (1999) as a formal, deliberate method of determining one's life values, current resources, and sustainable future resources to achieve or maintain one's life values. The holistic process provides an effective methodology for both adult learners and Millennials to make the community connections they seek.

Purpose

This paper presents the Expansive Collaboration (EC) Model that creates a teaching/learning unit to engage students in service-learning, community-based research, or other format, and that fosters development of sustainable solutions from the bottom-up. No single academic discipline is sufficient to address a complex community issue. Thus, a partnership structure was formed to determine if the EC Model would more effectively solve community problems and facilitate student/faculty learning, leading to greater community satisfaction than a simpler model. "Expansive Collaborative" is herein defined as a highly interactive, multi-cultural, multi-institutional group of faculty and students that includes, in a transdisciplinary and systems approach, the academic areas of agriculture, the humanities, arts, sciences, and technology in a collective teaching-learning unit using the holistic process. The EC Model can be used to create courses, transform curricula, conduct action research, and develop service-learning experiences with any community.

This paper argues that, to effectively engage all students who want to learn how to be socially responsible, institutions should provide opportunities, both in the classroom and in social action groups, for faculty and students to form a teaching and learning unit using the holistic process as defined by Savory and Butterfield (1999). Savory and Butterfield advocate using these three basic steps. First, the community-of-focus defines, in one sentence, their most important values/goals; second, the community lists their current resources to maintain these values; and third, the community determines what sustainable future resources they will need to maintain these values. Faculty members engage long-term with a community. Students participate as visitors, listeners, contributors, and mentorees in this ongoing process that extends over multiple semesters or quarters.

The holistic process blends naturally with service-learning. The classic definition of service-learning, however, does not specifically include the holistic process. Service-learning pedagogy is a form of course-based, credit-bearing, civically engaged scholarship emphasizing "development of democratic, mutually beneficial, and respectful relationships between students and community members with whom they work" (Benson and Harkhavy, 2003) in which "…students a) participate in an organized service activity that meets identified community needs and b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility" (Bringle and Hatcher, 1995, p.112). To meet student needs more effectively and community goals sustainably, the holistic process should be integrated into service-learning programs.

Reorienting service-learning educational processes toward developing and implementing sustainable solutions requires the holistic process, which in turn requires working at disciplinary interfaces, using inclusivity, valuing long-term relationships with the community-of-focus, and valuing all ways-of-knowing, technologically-oriented as well as traditional-based knowledge. In the EC Model, faculty engage and students participate in a transdisciplinary manner. "Transdisciplinarity involves going between, across, and beyond different disciplines" (UNESCO, 2010 p.1), simultaneously searching for balance. For example, when a group of agricultural scientists, business managers, and engineers discovered their community-of-focus was primarily interested in locally eradicating malaria (Sanambele, Mali), or wide-spread community alcoholism (Renchinulmbe, Mongolia), or in maintaining their local population of crocodiles that have both economic and spiritual value (Borko, Mali), or in preserving their endangered indigenous language (Lame Deer, MT), they worked together with the community on the issue and did not dismiss issues as out of the purview of their disciplines.

Example of an Expansive Collaborative in Action

The birth of the EC Model occurred as a result of this example. Agricultural scientists had been working with the village of Sanambele, Mali since 1998. For six years, collaborative on-farm research had been conducted related to sustainable pre-harvest protection of green beans and tomatoes from insect vectors and soil-borne fungi, and long-term preservation of cowpeas postharvest. When finally asked in a series of holistic focus groups initiated by Millennials what their most important issues were, villagers said their concerns were not about pre-harvest and postharvest protection of crops. Their highest priority was to protect their children from malaria and hunger (later redefined by these villagers as kwashiorkor). Professors and students from Entomology, French Literature, Business Marketing, Horticulture, Neurobiology, Art Design, Molecular Biology, Media and Theater Arts, Nursing, Soil Science, Liberal Studies, and Organismal Biology in a Hispanic-serving institution (UC-Riverside), a tribal college (Chief Dull Knife Community College), a Malian agricultural college (Institut Polytechnique Rurale et Institut Formations Recherches Appliquee), and an 1862 Land Grant university (Montana State University) listened to villagers and began to develop answers to villagers' questions. Five years later, there have been no childhood deaths from malaria for two years and villagers are helping a neighbor village with their malaria issues. The most important thing that led to this success, Sanambelean villagers said, was that students and faculty took time to tell the stories of the insect vector and the protozoan that causes malaria (Table 1). Now,

a similar success story is emerging with "hunger," which is actually not lack of food, but making better choices of food produced in the village to provide the appropriate balance of the essential amino acids for children to prevent kwashiorkor (Brewster et al., 1997). When this Expansive Collaborative involved students and faculty in the holistic process with the village, seemingly unsolvable-across-Africa issues became locally solvable.

Inspiration for the EC Model was the global, participatory, Integrated Pest Management (IPM) Collaborative Research Support Programs (CRSP) (De Datta, 2005; Norton et al., 2005). CRSPs, similar to the EC Model, were developed at land-grant institutions. Originating in the 1960's, CRSPs throughout their history focused on international research, not U.S. undergraduate curricula. First tests of the EC Model construction focused internationally on small-scale, subsistence farmers and linked IPM CRSP partners with U.S. curricular changes (Dunkel et al., 2007). The EC Model uses participatory approaches of IPM CRSP, but couples that approach with the holistic process and more expansive multi-institutional components as part of a credit-bearing curriculum in higher education. The EC Model makes use of existing structures to target "many students who graduate having accumulated whatever number of courses is required, but still [are] lacking a coherent body of knowledge or any inkling as to how one sort of information might relate to others. And all too often they graduate without knowing how to think logically, write clearly, or speak coherently" (Boyer, 1998).

The EC Model is also based on the development suggestions of Easterly (2006) which focuses on not having a plan, but letting the community develop their own plan in their own timeframe. Because the EC Model has members of the community-of-focus acting as on-site mentors, there is opportunity for guided interpretation of cultural dissonance. Usually this interpretation leads to a transformative effect in both faculty and students (Kiely, 2005; Mezirow, 2000). This transformation will strengthen the possibility that both faculty and students will address future agricultural and other systemic issues with these tools, leading to acceptance and adoption of sustainable solutions (Knickel et al., 2009). In this way, the EC Model creates an informal academic grouping without requiring a new academic department.

Examples of Service-Learning Projects Similar to Expansive Collaboratives

The number of multi-disciplinary, service-learning projects implemented has grown in the past decade. The following are a few of the examples. The program initiated in 1995 at Purdue with only engineering students (EPICS: Engineering Projects in Community Service), now draws 10% of its student participants from liberal arts (Oakes et al., 2000).
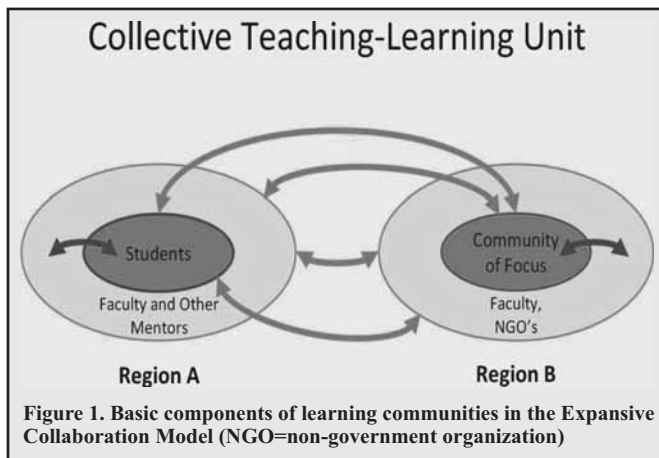
The University of Nebraska program brought students together from classes in Spanish, social work, communication, and engineering to work on a short-term project with one community agency (UNOmaha, 2008). The University of Pennsylvania undergraduates in 2003 launched a middle school community health center (Sayre Health Promotion and Disease Prevention Center) now serving as a teaching and learning focus for medical, dental, nursing, arts and sciences, social work, education, design, and business students (Harkavy, 2004). Linking a large, elite university and a smaller, minority-serving university in shared classes focused on the same community-of-focus has been effective (Marullo et al., 2009). To more deeply engage with the people of their state, the University of Georgia, the 1862 Land-Grant institution in Georgia includes a service-learning component in their courses across campus (Fischer, 2009). The result was a renewed link connecting towns with expertise across the university and the state-university system. Whether or not these examples were transdisciplinary which the holistic process requires as opposed to multidisciplinary which the holistic process moves beyond is not known. Whether or not these programs used the holistic process (Savory and Butterfield, 1999) with the community being the seekers of information rather than the interdisciplinary or multidisciplinary groups being the givers of information is not known. One example was found using the holistic process in higher education in combination with service learning at University of Texas-Austin (Richardson, 2007).

The Conceptual Model

The EC Model (Figure 1) was initially designed in 2002 (Dunkel et al., 2007), revised in 2004 (Dunkel and Gamby, 2007; Dunkel and Montagne, 2006) and 2007 (Dunkel and Montagne, 2009). The EC Model provides a methodology to promote education for sustainable development. Its efficacy is currently under evaluation.

This model requires two main groupings of higher education institutions (in Region A and Region B) linked in what should be entered into as a long-term relationship (Figure 1). Two or more culturally distinct regions are needed in the model to set the stage for cognitive dissonance followed by perspective transformation. The importance of a long-term relationship cannot be over-emphasized. Most communities require a year or more simply to establish trust required for an effective working relationship. These essential two regions also become a way to appreciate diversity. Scientist/novelist, C.P. Snow (1959) in his well-known essay "A Second Look," saw hope for a sustainable world only if societies reweave the "two cultures," literary and scientific, back together. Students trained in sciences must be trained to understand social consequences of technological change. Simultaneously, humanities

students must have basic scientific/technological literacy to fully understand issues related to poverty, health, and agriculture. Solutions to real problems demand transdisciplinary approaches (Baker et al., 2009).

Figure 1. Basic components of learning communities in the Expansive Collaboration Model (NGO=non-government organization)

Regions A and B can have many configurations. Region A is focused on students, whereas the community-of-focus is the center of Region B, although local students and faculty can exist in Region B. In our first tests of the EC Model, Region A was a coalition of four 1862 Land-Grant universities, a Native American tribal community college (1994 Land Grant), a public non-land grant university, and a service-based, private, urban university (George et al., 2011; Shams and Smith-Cunnien, 2009; Smith-Cunnien et al., 2010). Region B was a similar set of teaching and research institutions, but in a material resource-poor country, Mali. The main community partners in the Expansive Collaborative in Region B were cooperatives, women's associations, and councils of Elders within communities. To help bridge gaps in understanding each other's cultures, Region B partners who served as site-mentors for both U.S. faculty and students were found to be invaluable. One mentor group was composed of mid-career professors, scientists, and an engineer who traveled between the two regions (Dunkel and Gamby, 2007). These mentors are residents of Mali (Region B) and speak indigenous languages of the subsistence farmers with whom the Region A participants work. Other long-term partners were the U.S. Peace Corps-Mali and non-government organizations (NGOs) such as Shea-Yeleen International, based both in Regions A and B.

Another configuration of Regions A and B tested was within a state (Region A) and a Native American nation (Region B) in the same state. A third configuration was formed as a network of secondary and elementary school classrooms in both Regions. They were linked via electronics to the institutions of higher education and to each other (Woolbaugh et al., 2006). Students, teachers, and faculty interacted via email, visits, collaborative research and service-learning, exchanges of cultural trunks with local artifacts, letter exchanges by students, and annual

video conferencing (the Global Science Fair) (Woolbaugh and Dunkel, 2008). A website (Virtual Center for Alleviating Rural Poverty while Valuing Traditional Ecological Knowledge, 2011) became a mechanism for sharing outputs. The EC Model creates bridges and can foster changes in institutions of higher education quickly (Table 1).

Why is it so crucial to configure the EC Model around at least two culturally different collections of institutions? Higher education faces an urgent need. First, students must "learn to understand, appreciate, and work cooperatively with those of different beliefs and values" (Chisholm, 2004; Foreword, p. x). Second, student learning should come from experiences as well as traditional academic sources of information. Third, higher education has a "…responsibility to deploy their resources to address… problems, issues and suffering in their own societies and those of the world" (Chisholm, 2004; Foreword, p.x). The EC Model evolved to specifically promulgate these changes.

Basic Steps in Building and Using an Expansive Collaborative

The EC Model is implemented using the following steps.

1. Foundation Step is to first create a coalition of professors in Regions A and B from different academic disciplines across different institutions of higher education. This phase usually involves seeking and receiving funding, and may take a year or more. Similar to the Collaborative Research Support Programs (CRSPs), the foundation step need only be taken every five to 10 years.

2. Colleagues in Region A link with their counterparts in Region B and together engage one or more communities in Region B in a holistic discussion.

3. Depending on the issues raised and the holistic goal generated by consensus in the community-of-focus, specific partners are recruited from the community and from institutions of higher education.

4. The structure of the learning environment is established. Courses are redesigned or created and approved by each institution's administration.

5. A series of culture-general and culture-specific teaching and learning sessions are conducted by faculty and students at their institution involving collaborators from other institutions electronically. Students explore Western and non-Western (non-European derived) cultures' theories of "development" with the following authors: Norberg-Hodge (1992), Ayittey (2005), Easterly (2006), Ba (1972), Straus (1977), Yunus (2003), Mortensen and Relin (2006), Mortensen (2009), Kidder (2003). Students sharpen participatory (Chambers et al., 1989) and holistic skills (Savory and Butterfield, 1999) and learn in-depth interview techniques (Halvorson et al., 2011). To prepare for the intensive listening process, students learn about community members,

community dynamics, and social structure through videos, in-depth interviews with previous visitors, and by engaging in role plays and follow-on evaluations. Mentored student reflections begin at this step and continue through step 8.

6. Students join with faculty and community mentors and engage the community in the participatory, holistic process to continue interactions begun in step two. Students and faculty listen within the community and also in the multi-institution,

Table 1. Examples of Tangible Benefits to Student Learning (S), Transformative Effects (Mezirow 2000) (T), Faculty Development (F), and Positive Changes in the Community-of-focus (C) from using the Expansive Collaboration Model and (year) Benefit Began to Accrue after Initiation of Program in 2002		
Type of Institution	Specific Group within Institution	Benefit
[a]Tribal College (1994 Land-Grant) Region A	n.a.	◆ first international program (T) (2003) ◆ first service-learning course (S,T) (2003) ◆ tribal history interest renewed (S,C) (2009) ◆ teaching/learning dialogue initiated on Indigenous issues with Sanambele farmers/ Elders (S,C) (2009)
[b]Service-Learning University Region A	College of Arts and Sciences School of Engineering School of Business School of Theology	◆ added agricultural /natural resource issues into existing courses (S,T,F) (2005) ◆ provided language-based service-learning opportunities in another material resource country (S,T) (2005) ◆ received student/faculty awards in service-learning and international research (S,F) (2008)
[c]1862 Land-Grant Universities Region A	College of Agriculture College of Letters and Science College of Liberal Studies	◆ added service-learning and the holistic process to courses (S,T,F) (2005) ◆ added new courses (S) (2003) ◆ received student, faculty, department awards in service-learning, research, international educational opportunities (S,F) (2009) ◆ added intercultural competency measurements to undergrad tests (T) (2005)
[d]Hispanic-Serving University Region A	College of Agriculture College of Humanities, Arts, and Social Sciences	◆ added course on understanding poverty and cultural wealth (S,T) (2007)
[e]Agricultural University and [f]National Agricultural Research Organization Region B	Agricultural Engineering Small Enterprise Economics Integrated Pest Management	◆ added the holistic process to mentors'/instructors' skill set (S,T,F) (2007) ◆ added appreciation for essential role of human geography in engineering (T,F) (2008) ◆ received student, faculty, national awards in research/ international activities (S,F) (2005)
[g]Communities Region A	n.a.	◆ communities participated in annual, public cultural events with local institutions of higher education (C) (2003) ◆ grade school, secondary school student/faculty exchanges (S,T,F,C) (2005)
[h]Communities Region B	Village Group 1	◆ villagers eradicated locally malaria (no child deaths)(C) (2009) ◆ village women established handicraft cooperative, national / international market, and physical center www.mmama.net (C) (2009) ◆ grade school, secondary school student/faculty cooperative research/arts/cultural heritage development (S,F,C) (2005)
	Village Group 2 Village Group 3	◆ farmers learned, successfully used certified seed potato production methods (C) (2010) ◆ women learned quality assessment, management techniques for value-added local, renewable natural products. (C) (2008) ◆ women organized into a shea cooperative. (C) (2008)

[a]Chief Dull Knife College, Lame Deer MT; [b]University of St. Thomas,St Paul MN;[c]Montana State University-Bozeman, Virginia Tech-Blacksburg, University of California-Davis; [d]University of California-Riverside; [e]Institut Polytechnique Rurale et Institut Formation Recherches Appliquee, Katibougou, Mali; [f]l'Institut d'Economie Rurale, Bamako, Mali; [g]Lame Deer, MT; St. Paul, MN; Belgrade, MT; Helena, MT; Choteau, MT; Bozeman, MT; [h]Sanambele, Mali, Borko, Mali, Dio and Zantiebougou, Mali.

transdisciplinary groups, and join with the community in action(s) decided upon. This specific active listening process uses certain verbiage such as verification or rephrasing. Supportive expressions that convey attitudes of valuing, appreciating, and empowerment are used. Directive, judgemental, and negative statements are prohibited. Listening involves a series of focus group discussions and individual, in-depth interviews.

7. Substantial give and take occurs and the community is empowered to focus on their holistic goal. Community members, students, and faculty take further mutually-decided-on action(s).

8. At the end of the semester's or quarter's experience for each cohort of students, all Region A and B participants jointly assess outcomes and impacts.

Over variable time spans, but usually each year, the specific problem or issue, and, therefore, the goal may change. The on-going process, however, provides a real framework to build students' basic knowledge and skills. This multi-year conversation provides the foundation upon which students in a variety of service-learning, action research courses in partner institutions and the community-of-focus can see progress. Meaningful social change and in-depth learning occurs when faculty and students practice their enhanced participatory, holistic listening skills, and their teaching, research, reflection, critical thinking, problem-solving skills.

The careful foundation set in place, combined with give and take at every step in the cycle, builds and strengthens the inter-institutional framework and multi-academic-year memory. The EC Model combines pedagogies with andragogies, such as the holistic process, service-learning, and international study abroad, that educate future generations in the mindset and skills required for developing and implementing successful, sustainable practices. Students are involved in Steps 5-8. New students enter at Step 5 each semester/quarter. Step 8 is the time for in-depth assessment and preparing for a repeat of the process as faculty and community mentors may change.

Application of the Model

Primary test sites for the EC Model were established in four village groupings in Mali, on the Northern Cheyenne Reservation in Montana, and in a nomadic herding community in Mongolia. One hundred and thirty students from four 1862 Land-grant Universities (including a Hispanic serving institution), one urban private university, one tribal college, and one public non-Land-grant university have participated with 35 U.S. and Malian faculty in tests of the EC Model in Mali. An estimated 3,000 students participated via on-campus action research courses since 2001.

Benefits

The EC Model offers many benefits for students, faculty, institutions of higher education, and communities in both Regions A and B (Table 1).

Intercultural Competency Benefits. The EC Model emphasizes intercultural competency for students and faculty. Mentor-guided reflections with site mentors is a crucial part of the discovery process. Faculty became interested in their own level of intercultural development, particularly in moving from ethnocentric approaches (denial, defense, minimization), toward ethno-relative world views (acceptance, adaptation, and integration) (Bennett, 2004; Pusch, 2004). Faculty in Region A gained appreciation for simply listening and the usefulness of, at times, "being motionless" and accepting of a slower pace (Tonkin, 2004, p. 1). Western culture students and faculty learned to suppress their own "need-to-plan," to value other ways-of-knowing, and to appreciate non-Western cultures (cultures not of European origin) development processes such as those they discovered when studying Norberg-Hodge (1991).

Pedagogical / Andragogical Benefits. The EC Model enhances student learning. Students in one discipline must explain their parts of the project to other team members. Explaining the concepts and workings of a solution or approach to someone outside one's own field requires some knowledge of the other disciplines and using effective communication skills. Transmitting meaning constructed in individual contexts and through social negotiation, collaboration, and experience internalizes and deepens learning. For example, the holistic approach requires identifying all of the necessary and sufficient

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Key factors in forming an Expansive Collaborative:

1. Main form of interaction is the participatory, holistic process.
2. The Expansive Collaborative is a network of long-term relationships.
3. Communication by all members across the collaborative should be frequent.
4. Students are co-taught, co-advised between institutions, between countries, by villagers, tribal community members, by peers.
5. Faculty pay attention to intercultural development, guiding students and each other from ethnocentrism (believing their culture is the center of the universe), through minimization of differences toward ethno-relativism (appreciation of differences), particularly integrated ethno-relativism (in which one moves subconsciously from appropriate behavior in one culture to that of another) (Bennett, 2004; Pusch, 2004).
6. Villagers/community-of-focus decide topic and action.

sustainable resources to solve a problem or maintain a value. Local malaria eradication, kwashiorkor, alcoholism, unemployment, and other expressed community problems have no single disciplinary home and students soon discover this complex problem must be solved using a systems approach.

The EC Model encourages creative problem-solving. The EC Model emphasizes knowledge construction, not reproduction. Neither teacher nor textbook are center stage. Students ask and then learn how to find answers to their own questions. In this pedagogy, learning situations, environments, skills, content, and tasks are relevant, realistic, authentic, and represent the natural complexities of the real world. Learning in this way encourages creative problem-solving. Solutions offered by students must be appropriate and sustainable for community partners (George et al., 2011). To offer acceptable assistance, students must consider broader societal issues such as culture and gender roles in the community or specific physical constraints such as long-term, sustainable availability of critical resources, and effects of local climatic patterns.

The EC Model enhances communication skills. The EC Model requires transdisciplinary thought and action, i.e. communication along the interfaces between different disciplines. Students from different sized institutions with different ethnicities, religious backgrounds, and socio-economic status learn to collaborate. Collaborations between urban and rural institutions coalesce among students with different understandings of agricultural issues and students with very different sets of 'common knowledge.' Collaborations between institutions in different countries involves more than just some knowledge of each other's language, but also requires knowing and following customs and traditions of each other's societies for successful communication. Students must first listen to community partners, and then respond to community questions and requests, remembering continually that the community is in the "driver's seat." Students must be part of formal, but non-technical presentations to Elders, and informal interactions with community members. Later, students are required to give formal professional presentations.

The EC Model creates valuable relationships. In addition to students from a multitude of disciplines working together and learning from each other, the EC Model also encourages faculty to forge new professional relationships outside their individual academic departments. In so doing, they learn about organization of other academic fields which broadens their own content knowledge and deepens appreciation for others' knowledge.

After 11 years of developing and using the EC Model (2000-2011), there were many examples of these basic pedagogical and andragogical benefits. Individual examples are too numerous to list here.

Each student in the overseas component benefitted in different specific ways. These are a few of the benefits of the 130 students in the Mali component. Students discovered many aspects of cultural wealth, including traditional uses of local medicinal and pesticidal plants (Lehman et al., 2007), respect for elders (Chaikin et al., 2010), values of multi-generational family groups (Chaikin et al., 2010), the power of sharing, and peaceful conflict resolution (Jones, 2007). Students and faculty, learned that knowing community perceptions is essential before even suggesting interventions (Halvorson et al., 2011). The 3,000 students who did not travel to a Region B location accrued benefits by being exposed to unique learning experiences and becoming aware of their own intercultural development process. Most students who worked in Region B reported the experience dramatically changed their perspectives.

Recruitment, Retention, and Persistence Benefits accrue to institutions using the EC-Model because faculty have opportunities to build relationships with students outside the classroom. Studies indicate these experiences lead to greater student satisfaction, retention, and persistence (Gallini and Moely, 2003;, Shumer, 1994; Astin and Sax, 1998). Word-of-mouth from current and previous satisfied students improves recruitment. Adult students and Millennials are more engaged and have their needs for connection to sustainable actions met. These factors can lead to improvement in student recruitment, retention, and persistence (Fox Koon et al., 2009).

Community Benefits. The EC Model can be used in the U.S. with migrant worker and Native American communities, in inner cities, and communities anywhere in the world. Outcomes have mutual benefits (Table 1). Community members are empowered, talents are discovered among community members, and new skills are developed. Most important, the community develops pride in their accomplishments, and develops a process to continually align their values with their resources, sustainably.

Summary

Many global issues can be addressed by using the EC Model. Transdisciplinary, multi-institutional, multicultural platforms using the Savory-Butterfield holistic approach support bottom-up, sustainable development. Service-learning is even stronger when the holistic process is used and could become the best practice to create learning environments for adult students and Millennials. Pedagogical and andragogical skills of faculty improve, students are highly engaged, and teaching is inspiring once partnerships are in place. The EC Model is one way to realign higher education experiences with the needs of their adult students and the Millennials. The EC Model creates synergy not possible with a simpler model.

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