Project Title

Analyzing knowledge exchanges in the Farmers Field School Human Ecology Preservation Area (Hepa) through a reformed framework of loop learning to promote deeper levels of learning

Keywords

Farmers Field School (FFS); Social Policy Ecology Research Institute (SPERI); Human Ecology Preservation Area (Hepa); Organizational loop learning

Abstract

This research analyses and provides recommendations for organizational and student learning within the Farmer Field School (FFS) in Vietnam's Ha Tinh province; in line with the FFS objectives of maximizing knowledge dissemination within its student-farmer communities. This FFS works with minority youth, aiming to utilize traditional local knowledge to achieve sustainable livelihoods. The study documents key relationships through which knowledge exchanges occur within the FFS, and then analyzes and provides recommendations for student and organizational learning using the theoretical framework of loop-learning. Findings suggest that the FFS networks with ethnic communities in the Mekong region, developed prior to the conception of the FFS play an influential role in its curriculum development and its students' single and double loop learning. However, improved outcomes could be achieved by further developing the knowledge transfer skills of FFS-students', increased NGO activity within student-farmer's communities, and the development of progressive goals for knowledge transfer.

Background and Aims

Traditional agricultural extension methods have relied mainly on knowledge originated from experimental stations within universities (Wiley, 2000). These techniques have, in the recent literature been criticized as non-context specific are attributed to the limited adoption rates by farmers (Sands, 2008). Farming stakeholders interviewed in Vietnam have cited reasons of complicated alternative land use packages and the need for costly investments, which small-scale farmers were not able to commit to (Minot, 2007). Nationally, Vietnam's agricultural extension program, the Agricultural Technology System (ATS) has been criticized for being inequitable (Nguyen et al, 2008); marginalizing poorer minority farmers in the remote highlands. This alienation of minority peoples is further exacerbated by language barriers and the lack of skilled agriculture extension workers (Fliert et al, 2007). The Social Policy Ecology Research Institute (SPERI), a non-governmental organization (NGO) was developed in Vietnam in 1989 to remediate these deficiencies.

SPERI focuses deliberately on marginalized minority farming communities (SPERI, 2010 and Boissiere, 2009). It believes that traditional farming methods; which have been sustainable for generations prior to the degradation of forests[1], can be revitalized to create sustainable communities, when hybridized with modern ecological-farming concepts such as permaculture (SPERI, 2010). Sustainability in this paper is defined as self-sustainable communities which do not use artificial substances such as chemical fertilizers and pesticides and are enmeshed in asymmetrical power relationships only by choice (Jorgenson et al, 2008). SPERI plays a catalytic role in capacitating minority farmers with these critical abilities to develop and critically analyse these hybrized outcomes. The ability to carry out these processes independently is a crucial skill for farming communities, especially in the context of climate change. (Mendelsohn, R., 2009 and Seo, 2008).

Such objectives and visions are shared by SPERI's daughter organizations, including the Human Ecology Practical Area's (Hepa) Farmer Field School (FFS), developed in 2007. Hepa-FFS aims to enable farming youth to diagnose problems, identify solutions and develop plans [figure 1(a)] in line with its aforementioned vision, and extend this knowledge amongst farmers within their farming communities [figure 1(b)] (Asiabaka, 2003). It is crucial to effectively execute [b], as it is the assumption of effective knowledge transfer by an individual farmer that gives the FFS a time and cost comparative advantage in relation to other agriculture extension methods. In line with this FFS-imperative, this research is aims to (i) provide recommendations to maximize the effectiveness of process [b] for the student-farmers in Hepa-FFS, who will be returning to their communities to disseminate knowledge in year 2010/11. It will fulfil this aim by first (ii) documenting key relationships through which knowledge exchange occurs within HEPA-FFS, and through this, (iii) analyse the depth of Hepa's organization and student learning through the theoretical framework of loop-learning.

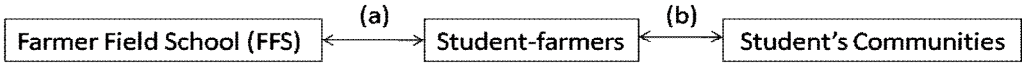

Figure 1: The importance of linkage [a] and [b] in determining the viability of an FFS

[1] Degradation of forests; a result from forest policy in the 20th Century, which revoked landownership rights of minority peoples, and degraded land by permitting industrial logging, industrial farming systems and mining

Organization and student learning

Single, double and triple loop learning, were first developed to provide businesses a framework to examine how better learning outcomes can be attained. This framework has since been extended to other organizations and individuals (Edwards, 1997 and 1999, Cayla, 2008, Arevalo, 2010). Learning has been central to SPERI's development since the conception of its founder's vision and work with minority communities in 1989, and continues to be reflected in the evolving frameworks of Hepa-FFS, in line with the demands of its students, minority farming-communities and external policy discourses. The goal of attaining deeper learning is crucial in enabling Hepa-FFS to achieve its aims as an organization, and to remain globally and locally relevant. Developing the student-farmer's capacity for deeper learning is also crucial as he/she is required to independently transfer knowledge within his/her community.

Gregory Bateson (1972) first proposed that learning occurred at different levels; this included single-loop learning L(I); this is learning 'how to do things' without considering the values, goals and objectives that drive the action. Double-loop learning L(II); which focuses on the rationale behind the task, and necessitates the individual to question the effectiveness of existing framework comparatively with other frameworks. And triple-loop learning L(III), which entails the learner to question the epistemological assumptions and power relationships behind their actions (Bateson, G., 1972, Argyris and Schon, 1978). L(III) involves asking questions such as *"whose worldviews and values am I adopting? How did these worldviews become dominant discourse? What are the alternative worldviews and how are they shaped? Are they better than the worldview I currently hold?"*

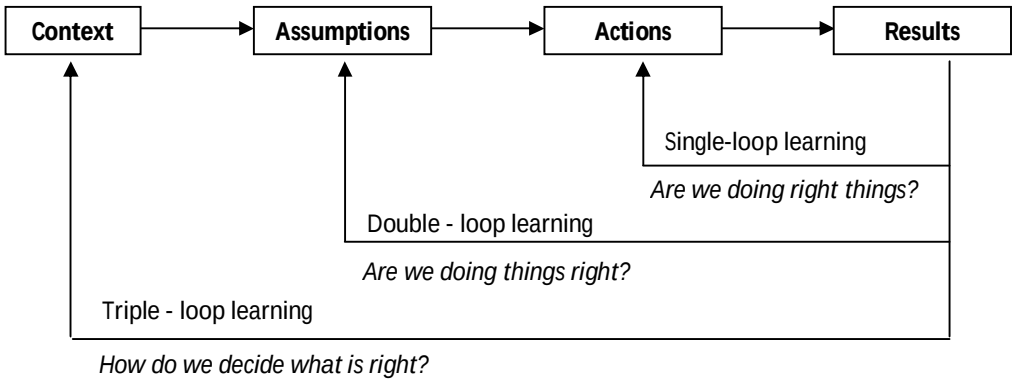

Figure 2: Outline of the loop-learning framework
(Adapted from Bateson 1972, Argyris and Schon, 1978)

In the research findings (pp:12), one will observe that L(I), L(II) and L(III) does not necessarily occur in isolation; that is, that L(I) and L(II) can occur concurrently, and that each preceding learning level provides context for the next in a nested manner (Bateson, 1972).

This framework is adaptable and can aid the organization in continual learning, even as environmental conditions change (Ortenblad, 2002, Argyris and Schon, 1978).

Using the loop-learning framework as a tool to enhance organizational learning is not neutral. It has been critiqued for (a) promoting undemocratic practices; where learning is directed by the management (Pedler, 1991) (b) its implicit assumption that an organization should learn for its long-term survival (Fenwick, 1998), and (c) encouraging individuals to reflect critically in the learning organization, but only on the surface and not on themes such as power structures and organization learning ideology (Ortenblad, 2002). This research however, argues that the framework is applicable to Hepa-FFS as central to Hepa's curriculum development is a focus on developing a "shared mental map" [2] through dialogue with the stakeholders involved - including Hepa's student-farmers, Hepa-staff and external volunteers. Additionally, Hepa is not limited by criticism (b) because it already recognizes that its presence within the community is solely for the purpose of community empowerment, and *has to be* temporary. Lastly, criticism (c), is potentially an issue of concern within Hepa, and will be discussed in the findings; however, Coopey's (1995) contested argument to this criticism underlines that "the freedom to voice their opinions contributes to learning by all individuals and the collectives to which they belong". The following section describes the research methods used to understand key relationships and knowledge exchanges within Hepa. It will then follow by presenting the findings and analysis of loop-learning.

[2] 'Shared mental map' is a shared direction, vision, framework and ways of thinking

Research Methods

The logic behind this research process can be understood through the circled components of figure 3[3]. This research was carried out for SPERI as an international volunteer assimilating the role of a researcher and a facilitator of learning. The NGO has five thematic networks through which its mission of sustainable education and livelihoods is advocated and practiced; one of which, is the FFS. SPERI has three FFS's situated in different provinces throughout Vietnam. This research focuses only on Hepa-FFS because (i) the curriculum of other FFS's differ from Hepa (ii) it is relevant and meaningful to contribute recommendations that may maximize the effectiveness of knowledge transfer from the students to their home communities in 2010/11. Despite the focus on Hepa, my participatory research was also extended to Si Ma Cai-FFS, where I taught international environmental issues and Basic English to gain a firsthand experience of the ways knowledge is exchanged between SPERI, its staff and the student-farmers, to fulfill the first core objective of this paper.

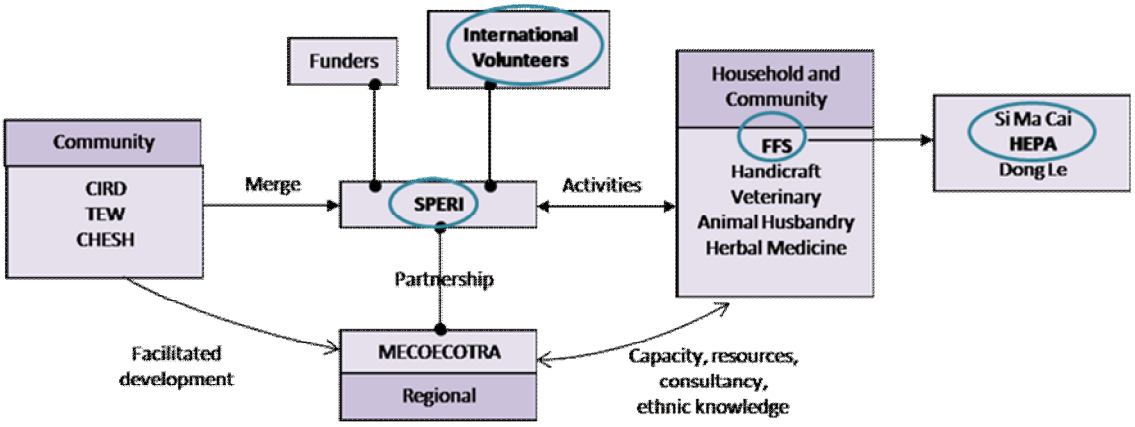

Figure 3: Contextualization of researcher within the research

These research findings were derived from three sources (figure 4); internet correspondence with SPERI, action research in the field and examining existing academic literature. The research objectives and scope were collaboratively-developed with key staff and associates of SPERI via internet correspondence to determine its achievability and objectives. Prior to field-research, the objectives, critiques and the official guidelines of the FFS were examined in the academic literature to acquire a broader understanding. This facilitated in the development of appropriate interview questions, and assisted in the analysis of Hepa-FFS's practices during the field-research. Academic literature was further examined after the fieldwork to contextualize Hepa-FFS's learning methodologies within the theoretical framework of loop-learning.

[3] The 'MECOECOTRA' and 'community' sections will be further expanded on within the findings section below

Fieldwork was carried out in three phases (figures 4 and 5). P**hase 1** commenced in Hepa-FFS's Ha Tinh province (figures 6), a three-hundred hectare farm-practice area in central Vietnam where an international volunteer, Lau, Y.S conducted an advanced class on environmental justice. I played the role of participant observer and teaching assistant, participating in, and closely examining student-teacher interactions, student responsibilities, and mechanisms for feedback from students and staff to the organization. The students were aged between 15 and 22 years old, and were from the H'mong, Thai, and San Diu minorities; coming from different provinces within Vietnam. Four of the students had been in Hepa for two years, and the remaining three were new students who had been practicing farming for six months. The qualitative method of *shadowing* was also employed to attain a more complete understanding of the FFS curriculum (McDonald, S., 2005).

Time	Literature	Internet correspondence	Fieldwork
September to December 09'	Literature Review – Background	Development of research scope: discussion with SPERI	-
16 December 09' to 13 January 10'	Literature Review – Contextualization within the FFS academic literature	-	**Phase 1** – Hepa **Phase 2** – Si Ma Cai **Phase 3** – Ha Noi
13 January 10' to 19 April 10'	Literature Review – Transdisciplinary contextualization of HEPA-FFS	HEPA-FFS curriculum, structure and course content	Singapore: interviewed a curriculum planner and teacher

Figure 4: Sources contributing to findings

Figure 5: Geographical distribution of research: Phases 1, 2 and 3 (see figure 4) (www.googlemaps.com, 2010)

'Shadowing' involved tailing 'V'; a student-farmer over two consecutive days, from the start till the end of his day. I observed his work on the farm, social interactions, activities, and lesson participation; whilst participating in his activities, such as chopping firewood and banana leafs for buffalo feed to experience 'learning by doing'; a methodology central to Hepa's teaching curriculum. I continually engaged 'V' with questions about his activities, its purpose and how he came to learn his skills. The scope and depth of questions were, at times restricted by our limited communication abilities. In situations where significant observations and queries could not be communicated, a physical record was kept, and subsequently clarified with the aid of a translator. The method was valuable in extracting findings in a holistic way, as it enabled me to concurrently extract opinions, observe behavior and body language. Although the method is arguably subject to my worldviews, I constantly clarified my observations with 'V'.

(Top left, clockwise) Figure 6a: Rao An river in Hepa-FFS
6b: 'V'; a student-farmer overlooking a section of his farm and house
6c: One of the five ethnic houses in Hepa that is used as a classroom and living quarters
6d: Classroom learning with an international volunteer from Singapore teaching issues of 'rights'

Nine interviews were carried out in Hepa (figure 7). Prior to the selection of interviewees, a general understanding was first nurtured over six days through the observation of Hepa's practical and structural dynamics. Informal group discussions with the Hepa community about the history of SPERI and their responsibilities in Hepa were noted. In addition, administrative materials depicting the student-farmer's curriculum over the last two years were also examined. This process facilitated in developing interview questions specific to interviewees. The technique of *extended interviews* was employed, with interviews lasting on average two hours and thirty minutes. This approach allowed the researcher to concurrently

build relationships, and effectively draw upon the specialized knowledge of each interviewee. The researcher accounted for interviewee fatigue, conflicting work schedules of individuals, and was and open to interviews held in junctures. Although these intervals arguably disrupt the flow of the interview, they also provided a valuable period for reflection, which at times led to the development of important questions.

Organization	Position (Interview location)	Previous Positions	Duration	Gender
SPERI	Department of Foreign Co-operation and administration	Accountant, Farm pilot manager, Project coordinator	3h 30 m	Female
	Coordinator of FFS regional network	Account, Project coordinator, Manager of Hepa	2h 30 m	Male
	Head of Development Studies Advisor: Herbal Medicine network Department of Administration Director of Finance department Trainer: ethnic minority students	-	1h 0m	Male
	International volunteer: Indigenous rights and English	International volunteer: Contemporary environmental issues and English	2h 30m	Female
	International Volunteer; research in permaculture; (Hepa)	Permaculturist (Australian)	3h30m	Male
	Student Administration (Hepa)		3h 0m	Female
	Coordinator of SPERI activities and Curriculum developer (Hepa)	-	5h 15m	Female
	Founder and Advisor of SPERI (Hepa)	-	1h 0m	Female
	Tour guide	Student-farmer (Hepa)	3h 0m	Female
	Student farmer and I/C of: Eco-dining and entertainment for external guests to Hepa	-	2h 30m	Male
	Student farmer and I/C of Hepa Library and K1A class monitor	-	3h 30m	Male
	Student farmer with the best farm design and I/C of Hepa FFS rules	-	2h 0m	Male
Ministry of Education (Singapore)[4]	Teacher (Singapore)	-	1 h 30 m	Male
	Curriculum developer (Singapore)	Teacher	1 h 0m	Female

Figure 7: An outline of duration, organization, gender and position of the thirteen interviewees

The selection criterion was based on how well the candidates could fulfill this researcher's motivations to; acquire an understanding of the background of SPERI, examine mediums through which learning occurred, and attain diverse perspectives from multiple worldviews. Whilst my role as a researcher and teaching assistant eased my access to interviewees and information sources, it also potentially influenced the nature of my findings, as interviewees

[4] The teacher and curriculum planner work for the MOE Singapore, but their views do not necessarily represent that of the MOE's and are their individual opinions of the SPERI curriculum and learning methodology

ideas could have been influenced by my role in participatory research. Further, the students and staff of SPERI could have been influenced by the ideas of SPERI when recounting individual and organizational learning. Figure 7 identifies and describes the interviewees selected. Although I strived to achieve a gender balance when selecting interviewees, there was only one female student-farmer in Hepa. This may have limited the interview objectives of obtaining diverse outcomes.

Interviews were carried out with pre-set research objectives; however, the extent to which they were structured was dependent on (i) the interviewee's knowledge and engagement with the broader SPERI network and (ii) serendipitous themes of research interest that arose during the extended interview. This was especially pertinent, as the researcher's limited understanding of SPERI history and the expertise of the interviewee necessitated interviews to be permeable to other inputs of knowledge. Of the thirteen interviewees, two interviews with student-farmers were carried out with the aid of a Vietnamese-English translator. To maintain the accuracy of this paper's findings, the translator was asked to communicate the translation as directly as possible, without personal interpretation.

The technique of reflexivity was also employed throughout the research, with a self-critical introspection of the research process occurring daily through a reflective journal and systematic records of research findings. This enabled the researcher to have a heightened awareness of possible exploitive research relationships, and develop approaches to consciously minimize its occurrence. Additionally, it also enabled this researcher to identify inconsistencies within the data collected, and allowed the findings to be clarified immediately. A daily informal-discussion of the research process, methods, and findings with Lau Y.S, a supervisor of the student-farmers' research projects further contributed to my reflections.

The **second phase** was based in Northern Vietnam, in the Si Ma Cai FFS where as an international volunteer of SPERI, this researcher taught contemporary environmental issues and Basic English to a group of student-farmers over eight days. The assimilation of this role as a short-term staff of SPERI enhanced this researchers understanding of the knowledge exchanges and relationships within SPERI. The **third phase** was carried out at the SPERI Headquarters in Hanoi, involving in-depth interviews with the key SPERI-staff (Figure 7). These staff were identified by snowballing and the nature of their involvement in the organization. These interviews were carried out with individuals proficient in the English language, and did not necessitate translators. The findings from phase one, two and three were not compartmentalized, and each successive phase was built upon findings from the preceding phase.

Findings and Discussion

Networks and relationships of Hepa-FFS

The development goals and vision of Hepa-FFS is inextricably linked with the development of its mother-organization SPERI (figure 3, pp:5), it is therefore essential to understand SPERI's history, to appreciate the development of Hepa-FFS and its associated networks. SPERI was conceived in June 2006 from the merger of three sister NGOs; CIRD[5], TEW[6] and CHESH[7](figure 3), founded by Tran Thi Lanh (SPERI, 2010). These three NGOs had a common understanding that the marginalized minorities in Vietnam have valuable knowledge, and that these farmers "act rationally within their own world" (Arevalo, 2010). It was therefore important to jointly re-establish their environment and practices within the modern context as "it is wrong if they are not involved, they don't like it" (Nguyen, M.N., 2010).

The conception of SPERI centralized coordination to better meet the needs of the growing Mekong Community Network for Ecological Trading (MECOECOTRA network), which SPERI is a partner with (figure 3) (SPERI, 2010). MECOECOTRA is a core association of more than 4,000 minority farmers within the Mekong region, and is run by the farmers themselves. The development of this network in 2006 was facilitated by SPERI, arising from relationships which the three sister NGOs established and maintained from its community engagement and development activities since 1989. MECOECOTRA aims to develop the social capital of ethnic minorities to increase indigenous autonomy and decentralize political power relations. It's five thematic networks are parallel to that of SPERIs and include; the FFS, handicraft, veterinary, animal husbandry and herbal medicine. MECOECOTRA also acts as a forum to help minority-farmers share experiences and skills, and to monitor and evaluate development activities. Its members for example, are trained to identify students for SPERI-FFS, who will be trained to become future leaders and supporters of the network (SPERI, 2010).

Developing the loop-learning framework

The findings from knowledge exchanges within Hepa have demonstrated that Bateson's loop-learning framework, although useful in providing broad categories of learning, can oversimplify the types of learning which occurs within Hepa. This section demonstrates that categorizing learning-levels without considering the 'extent of complexity' or 'basic, intermediate and complex' sub-categorizations nested within each loop-learning level (figure 8) can result in inaccurate classification, especially between L(I) and L(II). This can have negative implications in developing plans to attain deeper levels of learning.

[5] Research Centre for Indigenous Knowledge and Development
[6] Centre for Research and Capacity Development for Ethnic Women
[7] Research Centre for Human Ecology Upland Office

L(I); 'learning how to do' for instance, does not differentiate between learning a singular/basic action, such as 'feeding the ducks', from the more complex ability to coordinate and execute several L(I) tasks together. Growing rice in the highlands of Vietnam's Si Ma Cai for example, requires farmers to know how to build terraces, till the soil with a buffalo, fertilize the soil by letting ducks 'graze' the area, plant, protect, and finally harvest the crop. There is a need to consider these differences in complexity to develop a loop-learning plan that is not tokenistic, (i.e.: claiming that L(II) has been attained for growing rice, when in actuality, it has been attained only for one component of 'harvesting the crop,' and not others); a complex L(I) learning would thereby require more coordinated planning. I have therefore further developed the framework, as demonstrated in figure 8 to provide a richer understanding of these knowledge exchanges.

	Extent of complexity		
	Basic	**Intermediate**	**Complex**
L(I) "how to do"	Single L(I) 'ability to do' e.g: feeding animals, harvesting vegetables	← Intermediate→	Combinatory coordination of L(I) 'abilities' e.g.: growing rice
Understanding 1 ↓	One or few worldviews+shallow understanding of worldviews	←Intermediate→	Deep understanding
L(II) "are there better frameworks?"	Limited understanding of few or one framework(s)	← Intermediate→	Comprehensive understanding of multiple, alternative frameworks
Understanding 2 ↓	Limited understanding of assumptions, poor contextualization	← Intermediate→	Deep understanding of assumptions within political, env, econ contexts
L(III) "questioning epistemology"	Questioning with biased and limited information	← Intermediate→	Recognizing biases, questioning with assumptions deeply from a breadth of info.

Figure 8: An Expansion of Bateson's Loop-learning framework

In figure 8, the more 'permeable' boundary between "intermediate and complex", as compared to the "basic and intermediate" boundary that depicts, how challenging learning a task is, can be subjective to individuals. This permeability thereby increases as a tasks' complexity increases. Permeability thus provides an allowance for interchangability to accommodate the subjective nature of 'difficulty'.

A limitation is the accuracy of classification by an 'outsider'. An L(I) learner for example, who has perfected the ability to effectively communicate the reasons for choosing a particular working framework over others can arguably, with all other factors held constant, deliver a presentation with the same conviction as an individual who has undergone L(II) learning. This can make it challenging for the 'outsider' who has not been involved in the organizations learning process, to accurately classify knowledge, and is an issue that the framework is unable to resolve accurately. This researcher could be classified as an 'outsider'; however, has sought to minimise error by verifying these findings with SPERI.

The following sections will demonstrate (i) how existing Hepa structures and knowledge exchanges can be viewed in the context of loop-learning and (ii) how loop-learning can continue to be utilized, to stimulate deeper-learning within the organization. The latter will be framed as this paper's recommendations for Hepa.

Hepa-FFS knowledge exchanges viewed in the context of loop-learning

This section will demonstrate how the knowledge and networks of Hepa-FFS, developed prior to its conception; (i) is a demonstration of L(I) that has contributed to its L(II) by being applied to developing the Hepa-FFS curriculum; and (ii) how this has played a key role in developing the L(I) of its student-farmers.

Example 1: Bottom-up approach

L(I): Organizational learning

Central to the L(1) learning of Hepa as an organization, is its '*learning within farming communities'* (figure 9). As some of Hepa-FFS staff have worked with minority communities in CHESH, TEW and CIRD, its L(I) learning dates back to 1989. Learning in the field is compulsory for all members of its staff when they are first employed. In the field, a strong emphasis is placed on engaging in the farmers' activities, and learning from the community. Central to capacity development of these communities is collaboration. This bottom-up, non-tokenistic and collaborative approach has fostered close, relationships with the farmers; who in turn value the approach of shared decision making, and willingly share their knowledge and practices to Hepa staff, fostering strong L(I). The work of Hepa-staff in Long Lan province (Laos) is an example of a collaborative approach which fostered strong L(I) learning and positive outcomes for both the EU donors, and villagers.

> *"(I was a mediator between the donors and the elders for) the EU (European Union) project, (where) they (installed a) water tank for Long Lan people, and they would like to make a water pipe to each household (in the village). (But) the elder(s) said "we only want the community water tank, not the pipe; so (that) the villagers (can have) time to go and take water together, share and love each other together, (because) if you gave (one) pipe to each household, it will break our solidarity". So they only accept 50% of the budget from the EU, and not individual pipe to each household. Water tank is modern, okay, they agree with that, but they (also) have solutions, to adapt their culture within their conditions."*
>
> Nguyen, M.N., Speri-staff
> Interview Transcribe

L(I) Student learning: A derivative of organizational learning experiences

Such bottom-up approaches have been successful within the organizations fieldwork, and have been applied to the working-approach of Hepa-FFS, which encourages student-directed learning and demonstrates organization L(II) (figure 10). Hepa-Students are allocated space and time to engage in peer-discussion before a student-staff meeting, where final outcomes are discussed. By using dialogue to negotiate outcomes, students experience L(I) (figure 9); developing communication, negotiation, and managerial skills that are necessary for knowledge transfer to their home communities. In addition, this facilitates exchanges between their different ethnic groups that expose students to various bodies of knowledge external to their individual worldviews (Tran, 2003), and can also enhance their L(II) learning (figure 10). Students interviewed had a positive attitude towards this bottom-up method that takes place 'everytime (they) want to decide something' (Giang, Loc and Sam, 2009).

The research method of triangulation was conducted between Hepa, SPERI, and student-farmers to verify that these bottom-up approaches were not tokenistic. Findings demonstrate that outcomes which reflect such collaboration are reflected in 'Hepa's collective creation of school rules' and 'student-demanded' curriculum. Where in the latter, H'mong women specialised in handicrafts, and herbal-medicine specialists from the MECOECOTRA network were brought into Hepa to teach students herbal medicine and handicraft using the traditional H'mong 'loom,' (Tuan, 2009).

"…the students who are from different communities, for example, VL is from San Diu, S is from H'mong, T is from Thai and V is also from H'mong. They mix together and the knowledge they have, which is passed down from their elders, is shared within this space. For example, a herb… If, a V says, his elders have told him that this herb can be used for headache, maybe VL's elder has told him that this herb can also be used for stomachache, so this two knowledge combines.. and maybe another student says, this plant can also be used for dyeing clothes. So this knowledge doubles. And maybe V will go back, and tell his family, and his family will tell the community."

Tran, T.L., founder of SPERI

"…everyone (is) special in something.. just like, just like me, my family is Thai (ethnicity), we are good at herbal medicine… H'mong people.. they (are) good at keeping water… saving water because in the North very little water for use.."

Sam, V.T., student-farmer of Hepa

Interview transcripts

L(I) – "How to do"	**Extent of complexity**		
	Basic	**Intermediate**	**Complex**
Student farmers	- Mulching - Feeding animals - Harvesting crops - Chopping wood for cooking - Traditional handicraft	- Effective presentation and communication skills - Computer skills (excel, word, ppt)	- Dialogue - Growing crops - Farm design - English language
Organization	- Similar to students 'basic' learning - Acquiring evaluative feedback from students and staff - Accounting - Hiring staff - Administrative functions	- Administrative coordination - Developing funding proposals - Developing physical records of activities	- Curriculum execution - Learning in the field with minority communities

Figure 9: Non-exhaustive examples of L(1) in Hepa-FFS

L(II) "Are there better frameworks?"	Extent of complexity		
	Basic	**Intermediate**	**Complex**
Student farmers	- Reflective daily learning journals - Assessments on material taught - Understanding different ethnic worldviews	- Hybridization of knowledge o Structural and tool design o Farm design	- Knowledge transfer to home communities
Organization	- Reflecting on evaluative student feedback to modify curriculum	- Employing MECOECOTRA networks as teachers, or case studies	- Applications of lessons learnt within the Hepa curricular context

Figure 10: Non-exhaustive examples of L(II) in Hepa-FFS

Example 2: "Learning by doing"

The following example also demonstrates loop-learning applications within Hepa, as demonstrated in example 1 above. In this case however, I will also outline how possibilities for deeper organizational learning can be extracted from using the loop-learning framework.

'Learning by doing (LBD),' is central to Hepa's teaching methodology, and strongly develops student-farmers' L(I) learning. This teaching and learning methodology was employed from "how farmers we worked with in the field wanted to learn," and was not "created by Hepa" (Nguyen, C.H, 2009). "LBD" is also believed to be the way that student-farmers of Hepa will best learn as, they were "taught like this by their parents since young" (Nguyen, C.H, 2009 and Lyon, 1996). Knowles (1984) and Clottey (2006) also suggest that this method produces more confident and successful farmers.

I think (learning by doing) is the best. Because everyone can do.. can learn. Because if not doing.. only learning… err.. difficult to understand. And, maybe.. and for example, I.. I learn about herb. And I doing… I take.. the herb from forest, to my farm, grow in my farm, and use the herb, for drink. And then.. mm.. and then I remember.. Because I do it. Myself. Easy to remember"

Sam, V.T., student-farmer of Hepa
Interview transcribes

The following example of a 'chicken-tractor' demonstrates Hepa student-farmers L(I) through 'LBD'. This example also demonstrates how 'LBD' is a method which enables student-farmers to 'hybridize' modern farming structures to suit their local needs. Herein, the role of Hepa-FFS should be seen as a catalyst, which has well established regional networks with international volunteers and minority communities. These relationships have been essential in enabling the hybridization of modern eco-farming practices with traditional knowledge, through the minority people themselves.

The 'chicken tractor' is used in *permaculture* for the purpose of concentrating chicken manure in a specific area by placing chickens in a single structure (figure 8a). This concept was introduced to student-farmers in a lesson by an Australian permaculturist researching in Hepa, and was modified by the students to suit their local farm resources and needs (figure 8b):

> *"…then.. they .. they work out how they are going to use the chicken tractor.. they work with it (through) "learning by doing" …then you talk to the students about (the chicken tractor), and they have their own way of interpreting it. So they make it out of bamboo.. and the chicken cage relates to some form of traditional structure they have seen…"*
>
> *R.G, Australian permaculturist in HEPA*
> *Interview transcripts*

Figure 8a (L): The 'permaculture' chicken tractor (Source: www.fowlvisions.com)
Figure 8b (R): The hybridized chicken tractor

LBD therefore fulfills one of Hepa's aims to capacitate students. This method however, is not without limitations, and have been cited by some individuals in the Hepa leadership for (a) creating a 'lack of emphasis on developing writing skills and theoretical knowledge,' (Dang, 2009) (b) 'not producing instantaneous results, but (requiring) a long-term, step by step processes' (Chau, 2009) and (c) for requiring 'many tools and a large land area in order to learn about farm-practice and traditional understandings' (Chau, 2009). These limitations, although internalized by some individuals were not recognized by many other respondents interviewed, and the general consensus was that there were 'no problems' with the 'LBD' methodology. This could be a result of students associating problems they experience with the 'systems supporting this methodology' (Lim, 2010); for example, the lack of a well-

rounded curriculum content in Hepa, and not the methodology itself. However, this perspective accounts only for limitation (a), but fails to address the pertinent problems of (b) and (c) that are clearly associated with employing the LBD methodology in a farming context.

Enhancing Hepa-FFS's L(II) learning: Lessons from a student-farmer's L(II) learning

The general approach of consensus towards this methodology despite its apparent limitations, potentially highlights a presence of 'taken-forgrantedness' (Greig, 2007) towards the methodologies and approaches, where the system is assumed to be neutral or optimal; resulting in the individual foregoing the process of critical analysis. The following case study exemplifies the need for greater critical reflexivity within the student and staff body. It outlines the aforementioned issue and proceeds by outlining three key recommendations for L(II), and the possible challenges presented in implementing these recommendations. Finally, it will conclude with a L(III) recommendation.

At this juncture that precedes the case study, it is crucial to note that the researcher is *not* critical of the 'LBD' methodology, and supports the multiple benefits (Lofmark et al, 2008, Knowles, 1984 and Clottey, 2006) it encompasses, to expand the learning abilities of student-farmers in Hepa. The focus however, is on *perceptions and attitudes* towards the learning content and methodologies employed within Hepa, which are perceived as neutral or optimal. This is crucial, as it could hinder deeper levels of student and organizational learning.

A Case Study: Student-Farmer 'C'

What makes an FFS a viable agriculture extension network is its assumed ability to be cost and time efficient. In Hepa, K1A students who have completed the two year basic program, and are beginning their advanced program this year (2010) will be required to return to their communities to practice and transfer what they have learnt. This is a case study of 'C', a female student of H'mong ethnicity who excelled in Hepa as the top-pupil, and was the first Hepa student who returned home to Si Ma Cai to practice her knowledge in 2009 for a pre-determined period of six months. It was understood that she would thereafter return to Hepa to further her learning in the advanced program. The case study is arguably an 'isolated' and 'unique case,' nonetheless; her case illustrates elements for both organization and student learning.

An interview with 'C' cited that detailed planning of the six-month practice within her community was developed through extensive consultation and support from the Hepa network. During her stint, monthly visits from the staff of SPERI to her farm were also made

to provide her with additional resources and assistance she needed. Despite this meticulously planned support system, 'C' stopped farming after two months, and started work for a tourist company, citing reasons of alternative familial arrangements[8] and socio-economic set-backs (see box below). During the time of this research 'C' left Hepa to work for the tourist company, after her parents paid 15 million dong (US$790) (Coinmill, May 2010) to secure her employment despite her 'want(ing) to stay' in Hepa. During the 2-month practice period, 'C' received little support from her family in terms of "community work", which is the reciprocal community support that a farmer receives when farming. Her immediate family questioned the cost-effectiveness and quality of her organic crops when 'C's' sweet potato harvest was smaller than chemically fertilized crops, and her lettuce was eaten by pests; a result form not using pesticides. Her mother was especially disapproving of the low-economic value[9] it was expected to fetch. 'C' returned to Hepa for several days whilst this researcher was present. When she recounted her experiences to her fellow students during a semi-formal presentation, a K1A student asked if she could "tell (him) more about this because (he) is going back to the village to practice and is very interested in what difficulties (she) faced" (Giang, 2009).

> "…Mr Chau and some (other) teacher(s) help me to, give me comment, and… at my house, they don't know, my **parents don't know about permaculture**, and they cannot give me comment, **and they don't have the money** to pay for me to, to when I want to when when I need the money. And… if I stay in Hepa, I need the tool, I need the.. manure, I need the… the.. fence, and they. Um.. the **school can give me**. and very very like, I don't worry (only focus on farming). **At home I worry** about who will teach me, and how to go for better (improve my farming), and the money pay for like the salt, and like the vegetable for eat, for, I worry many.."
>
> 'C', Student-farmer of Hepa
> Interview Transcribe

Recommendations

The case-study provides rationale for these research recommendations. The first recommendation is for *an increased emphasis on understanding the different environments between Hepa and students' home communities*; *especially in those of social and economic realms*. 'C' was critiqued by one of the SPERI staff as not having the patience, because such farming results were not 'instantaneous'. This underlines a critical need for the student-farmer to have realistic expectations of the reactions from his community towards the knowledge he/she practices; as the task of independently transferring knowledge to cause a 'paradigm shift in mindsets from the current neoliberal thinking' (Maxey, 2006) requires one to be psychologically prepared for the challenges of reduced social, intellectual and financial support.

[8] Coi's parents cited a more stable income and a better future working in the tourist industry
[9] Coi was pleased when she announced that her crops were sold at the same price per kilo as crops grown with chemicals

This recommendation resonates with statements that have commonly been made about the Hepa-environment; including *"I miss Hepa, it's like a little bubble so different from the rest of Vietnam" (Lau, 2009), and "no ..its true, I found that after staying in Hepa for a long time, I started to think that everyone else, what they think is not good. And then I realize that that is bad, so I start to change the way I think"* (Nguyen, C.H, 2009). Hepa's supportive learning environment, where students and staff have common objectives and goals, and the environment is "clean, no rubbish everywhere, no plastic: it is banned" ('C', 2009), and serene is possibly 'the ideal self-sustainable village'. Although this environment aids in L(II) by motivating and helping and staff and students visualize ideal outcomes for minority communities, it should also be a realistic reminder of the challenges externally.

The second recommendation is for a *greater emphasis on the connection of what the students learn, to their responsibilities of knowledge transfer.* This is evident in student responses and questions to 'C' about her experiences in knowledge transfer, and from interviews. This can be achieved through further developing skills in addition to farming, such as effective communication and marketing in preparation for this purpose, and continually re-emphasizing its broader purpose during student learning.

The third recommendation calls on SPERI *to assume an advocacy role within the student-farmer's community, to reach the FFS goal of 'effective knowledge transfer'.* It questions the impact that an individual farming youth can make within her/his community, which will potentially be further limited if the farmer is female, due to the patriarchal traditions in many minority communities (Alvi, 2005). SPERI's involvement and engagement with the community elders of the community can help create simultaneous top-down and bottom-up awareness; such that the student is not primary driver of change within a community, but a collaborator and supporter of SPERI's advocacy activities. This will not be a new concept for SPERI, as it has extensive experience with collaborating with minority-communities.

The possible limitations for these three recommendations revolve around the limitations of time, resources and student learning capacities. In recommendation 2, the limited time, and learning capacities of the students (Nguyen, M.N, 2009) who, with the existing two year Hepa curriculum already find the FFS "many days, very stressful..many assignments to write and work on the farm to learn," is exacerbated in considering that Hepa desires to condense the curriculum into one year. On a similar note, recommendation 3 requires SPERI to expand the number of field-workers it employs. This will require time, as workers will first need to share similar values, be hired and trained. These recommendations however, could be further explored by SPERI.

Conclusion: L(III) Recommendations

L(III) "questioning epistemology"	Extent of complexity		
	Basic	**Intermediate**	**Complex**
Student farmers	- Participation within Hepa's triple loop learning o May be directive	-	-
Organization	- Development of L(III) vision	- Development of objectives to achieve L(III) vision	- Development of Hepa-FFS as an action plan for its L(III)

Figure 11: L(III) in Hepa-FFS

This research recognizes that the foundation of Hepa's development is underlined by two forms of L(III) these are (a) the ability to utilize minority knowledge to empower marginalized minority communities within the dominant discourse of unsustainable development and (b) a recognition of the need for a context specific methodology developed collaboratively with minority communities. The challenge however, is to maintain L(III) within the organization and student-farmers, through learning from feedback-loops. Hepa has fostered opportunities for ongoing learning processes within the community through establishing strong evaluative feedback structures for its staff and students; students for example engage in evaluative feedback with the staff of SPERI during and after every learning program. This source of feedback is evaluated and discussed by the staff of Hepa to examine ways in which the curriculum could be further improved. Arguably however, this evaluative learning processes does not result in triple loop learning because (i) reflection is not encouraged at a power and structure level, but at an organizational level; creating only strong double-loop learning and (ii) the dialogue students and staff engage in create a "shared mindmap," possibly influencing the actions and thoughts of student-farmers who may assume the SPERI understanding to be correct, without critical examination.

On the other hand, it is noteworthy to question if L(III) is necessary for Hepa, if its values and goals are already 'ideal'. This researcher argues that whilst SPERI should maintain its ideal goal of creating transformative minority farming communities, embodying only this goal encourages idealism and romanticizes the power of 'traditional' over 'modern' practices. This neglects the influence of pervasive socio-economic forces which, through the public

media, drive the aspirations of many minority-farmers today (Maxey, 2006 and Baulch et al, 2004). This is a *necessary* condition for Hepa to consider; to remain globally and locally relevant. The researcher thus recommends that SPERI takes an approach of "progressive triple-loop learning," where the organization recognizes that if transformation should occur in these 'modern minority farming systems;' it would need to set long-term progressive goals, for itself, and community leaders to envision the outcomes as a reality (figures 12 and 13).

> *"..the search for ways to integrate capability, equity and sustainability thus need to be combined, so that in practice, a framework where conflict is low, and mutual support is high, is developed."*
>
> - *Robert Chambers, 1991*

Progressive Goals via L(II)
Stage 1: Student-farmer to assimilate a strong leadership role within the community, and promote the introduction of 'small-scale' agro-ecological farming plots for each family; citing reasons of 'health-benefits*'[10] (Nguyen, H.T., 2009)
Stage 2: Working on positive feedback loops such as (i) increasing adoption from households or (ii) global market demanding organically grown products, increasing product's economic value
Stage 3: Strongly reinforce the benefits of organic crops, to create a discourse and social-norm, so that households will not be easily swayed by a change in further market demands

Figure 12: A suggestion of 'Progressive goals should

Progressive Goals via L(III)
Assumption 1: is that community leaders are willing to work in line with Hepa's vision *(this will therefore be easier if a student of Hepa assimilates this leadership role)* **Assumption 2:** community relationships will be more influential than neoliberal development discourses created by the mass media
Stage 1: For a non-token development of the farmers' capacity, non-biased methods of equipping farmers with L(III) capacities should start from education within the village (*this may take varying periods of time, depending on the learning capacity of the individuals involved)*
Stage 2: Farmers decide autonomously and independently if they want to alter their existing farming practices
Stage 3: (if feedback is positive for Hepa) Introduction of L(I) via 'small-scale' agro-ecological' farming pilot/learning plots for minority-households
Stage 4: Success is usually permanent because farmers would have transformed their beliefs with inner conviction

Figure 13: A suggestion of 'Progressive Goals for Community-leaders'

[10] It is necessary to equip the community with the understanding that chemical fertilizers and pesticides have ill-health effects/economic benefits/address environmental concerns
*In Nguyen, H.T's village, she cited an exponential increase in the number of people diagnosed with cancer, she attributed this to the water and use of artificial substances such as fertilizers and pesticides. *Should use existing knowledge and concerns (such as these) to drive changes in farming practice*

Lastly, a radical L(III) consideration for Hepa-FFS is the question of *whether L(III) needs to be developed in farming communities to enact change in farming practices (figure 13) or enact change solely through L(II)*[11] (figure 12). Successfully achieving the former provides more permanency in the altered farming practices (figure 13), and is also in-line with Hepa's long-term objectives of increasing the autonomy of minority communities. However, it is more resource and time intensive, and its cost is exacerbated by high levels of uncertainty regarding change in the farmer's practices. This is therefore potentially contentious with Hepa's vision. Alternatively using L(II); to directly addresses the primary concerns of farmers, is likely to enact greater initial support from the farming community. However, the permanency of its change is questionable, and subject to both Hepa's and other forces of influence. In sum, if Hepa values its aim of creating minority communities with greater autonomy, more than recruiting an increased body of supporters, then it should have a vested interest in developing deeper learning capabilities of the farmers. This however, is a strategic issue which requires further critical exploration by the organization.

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[11] Should Hepa aim to enable farmers to *understand and rationalize?* Or to push farmers to take action without achieving a higher level of understanding?

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