MODULE 1

Approaches to Designing and Teaching EcoHealth Courses

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MODULE 1 - APPROACHES TO DESIGNING AND TEACHING ECOHEALTH COURSES

REFERENCE MODULE FOR TRAINERS

Overview

This module is meant to help trainers teach Ecohealth, by guiding them in the design and delivery of their own Ecohealth courses. This module, unlike the other modules in this manual, is not designed to be taught to the learner/participant end-users.

Good Ecohealth courses are designed and taught in ways that facilitate collaborative learning among participants (ideally from different disciplines). To design and teach Ecohealth, trainers need to understand how participants learn, and to develop strategies for facilitating that learning. In particular, trainers need to appreciate how the subject of Ecohealth demands collaborative and participatory teaching and learning approaches. This module will look at some basic principles of learner-centred approaches, and what is often called “adult learning” (although is not restricted to adults and can apply to younger learners) and the importance of learning by doing: embodying Ecohealth principles in the teaching of Ecohealth.1

The rationale is that Ecohealth aims to build capacity in participatory, collaborative and transdisciplinary research, meaning participants and researchers need to develop skills such as working together, drawing different kinds of knowledge and “expertise” from different people, and involving different types of stakeholders in the research and learning process. It follows that Ecohealth educational experiences should be taught and designed in ways which will provide opportunities to develop these skills through practice. Trainers will develop understandings along these lines.

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1 It is not, however, meant to be a comprehensive resource for adult education per se. Trainers are referred to other comprehensive resources, such as ILRI’s recent publication of Pedagogy and Adult Training.
Module Aims

This module aims to:

- Provide trainers with an opportunity to explore core features of learner-centred approaches and adult learning as they pertain to Ecohealth.
- Develop an understanding of how to design and deliver Ecohealth teaching materials.

Key Concepts

- Participation
- Collaborative and cooperative learning
- Transdisciplinarity
- Feedback and evaluation
- Experience and experiential learning
- Discussion and dialogue
- Reflective practice
- Active learning
- Debrief and review

Guiding Questions

1. Why is it important to integrate participant feedback into your course design, and how might you do so?
2. How can you facilitate transdisciplinarity during your course?
3. Why are reflective practices an important feature of Ecohealth education, and how can you build them into your courses?
4. What does Ecohealth have in common with adult learning, and why?
5. What skills are called for when teaching Ecohealth?
6. How would you approach the design of an Ecohealth course?
7. Who might you involve in the delivery of an Ecohealth course? Why?
8. How can you incorporate the capacities and experiences of your course participants into the curriculum of an Ecohealth course? Why is it important to find ways of doing so?
Basic Learning Objectives

After completing this module, trainers will be able to:

- Understand core principles and basic ideas of learner-centred approaches
- Recognize shared features of Ecohealth and learner-centred approaches – participation, equity, collaboration, systems thinking, sustainability, action
- Learn and practise how to facilitate collaborative learning and participatory curriculum design in Ecohealth
- Learn and practise how to design an Ecohealth course
- Reflect upon and develop strategies for how to build evaluation and assessment into an Ecohealth course.

Advanced Learning Objectives

Trainers will be able to:

- Understand why Ecohealth and learner-centred approaches have the shared features of participation, equity, collaboration, systems thinking, sustainability, and action
- Think of the place of learning (or classroom) as an ecosystem and why this may help to develop the approach to Ecohealth course design and delivery
- Involve members of the community in Ecohealth courses
- Design a complex case study and build it into your Ecohealth course.

The rest of this module will discuss some theories related to learning styles and the role of the learner.

LEARNER-CENTRED APPROACHES

Learner-centred approaches encourage participants/learners to reflect on their own learning, provide varied teaching techniques to suit different learning styles, and include activities where learners interact with the material, with each other, and with the instructor. These approaches have been researched and shown to be successful with both young and mature learners, including in schools. (Lambert & McCombs 2000; Alexander & Murphy 2000).
Activities

1. Introduction to Learner-Centred Approaches

LEARNER-CENTRED TEACHING

Learner-centred teaching places the emphasis on the person who is doing the learning (Weimer, M. 2002). Traditional methods of instructor-led teaching can encourage learners to be passive “recipients” of knowledge, whilst learner-centred approaches acknowledge that learners are active agents in their own learning.

Research into learning by adults tends to support theories around learner-centred approaches and furthermore, acknowledges the important role of greater life experience and critical thinking which characterizes adults.

There is no specific age when the characteristics of adult learners start: some exist already in young people, and some develop as learners mature and gain more life experience.

LEARNER CHARACTERISTICS

- People learn better and remember what they learned when they HEAR information, SEE demonstrations and illustrations, DISCUSS information and ideas, and DO or practice techniques.
- People learn best when teaching is interactive, meaning that they are given opportunities to work with the material on their own terms through discussion and practical activities.
- People learn better when they are encouraged to take an active responsibility for their learning processes. Ideally, education should strive to help learners gain autonomy and responsibility for their learning.

ADULT LEARNERS

- Adults are voluntary learners.
- Adults have accumulated a foundation of life experiences and knowledge that may include work-related activities, family responsibilities, and previous education.
- Adult learners are practical and may not be interested in knowledge for its own sake. They may prefer to focus on aspects of a lesson that will be most useful to them in their own work or life.
REFLECTION

- Consider the differences between teacher versus trainer or instructor, and versus participant or learner, by making a list of all the distinctions you can think of.
- How does thinking about adult learning help you understand the difference?
- How can you be more learner-centred in your teaching? (Hint: what are the characteristics of the learners?)
- Where and when can you provide your course participants with the opportunities to be able to see, listen, talk and do all the key features that you are teaching? (Hint: think of the experiences of the participants…)

LEARNER-CENTRED APPROACHES

Becoming aware of and reflecting on the following core theories related to learner-centred approaches will help to develop a learner-centred teaching practice. Keep in mind that it is probably not possible to incorporate all of these theories into your teaching practice, and it is important to consider the points above to judge which theories will help you the most in your teaching practice, and the degree to which you will be able to work with them.

I. EXPERIENTIAL LEARNING

- The work of the educator is to arrange for and organize certain kinds of learner experience. This includes paying attention both to the physical environment in which learning is going to occur, but also the inter-subjective environment, which includes individual work, group work, discussion, and time for reflection.
- The way you schedule your course or workshop and organize the place of learning is a key component of organizing the conditions of participant experience. When you are designing your curriculum, consider how you can influence the experience of learners by setting up an environment that interacts with the capacities and needs of those taught in a way that will enable worthwhile experiences.
- Active learning and learning by doing can be considered as aspects of experiential learning that focus on the experience of the learner. Encourage the trainer (and curriculum developer) to design learning situations that enable learners to have experiences that contribute to their learning development.
When designing your curriculum, you can use the above diagram (Fig. 1.1) to help you provide the opportunities for meaningful experiences for learners. First, consider both any relevant experience that your learners will have had, and the actual experience that they will have when they are introduced to the material. Second, provide learners with time for reflecting on those experiences, either individually or in groups. Third, build in moments where the reflections are synthesized or generalized. This can be done through plenary discussions or debriefing after group reflections. Fourth, provide opportunities for learners to practise what they have learned by applying it. Fifth, wherever possible, repeat these cycles!

II. COLLABORATIVE LEARNING

- Collaborative learning, sometimes called cooperative learning, stresses high levels of learner participation. It is a core feature of problem-based learning, where learners work collaboratively to solve a problem.[^2] This can be achieved by designing and delivering curriculum

[^2]: Problems can be framed by the participants (with instructor guidance), or if this is too time consuming, can be simply provided by the instructor/trainer.
in a way that both enables learners to collaborate with one another and with the trainer in generating content to be learned. Some methods for facilitating collaborative learning include making ample time for groups to reframe questions (e.g. come up with Ecohealth problem statements) or problem solving, and incorporating ways that the skills and experiences of participants can be shared. Analysis of case studies provides ample opportunity for collaborative learning and developing problem statements.

III. DIALOGUE IN LEARNING

• Paulo Freire drew attention to the importance of dialogue as part of the learning process. He encouraged teachers to consider themselves as learners, and learners as teachers. By questioning the role of the teacher as the one with the knowledge, and the learner as the one without knowledge, Freire stressed that we are all learner-teachers and can learn from one another. Learner-centred teaching, where the learner is the key agent in the learning process, grows out of these considerations.

IV. CONSTRUCTIVISM

• Constructivist learning theory encourages us to see the learner as actively constructing knowledge from their experiences through assessment, questioning, and exploring how new experiences connect with their prior knowledge. Through the process of reflection learners may change their previous beliefs, ideas, and frameworks or reinterpret their experiences so that it will fit with what they previously knew. This theory stresses the significance of the learner as an active participant in their own individual learning and in the learning of others (social learning, also discussed in Module 5: Collaboration and Transdisciplinarity). Knowledge is not what the teacher has and the learner lacks, but is instead what teacher-learners collaboratively construct through reflection, dialogue, and sharing skills and experiences.

2. Shared Features of Ecohealth and Learner-centred Approaches

Ecohealth and learner-centred theories share some important goals and features. Both recognize power relationships in society and aim at social change. Participation, transdisciplinarity, equity, sustainability, and an orientation towards action are shared by both Ecohealth and learner-centred approaches. This is a key reason why Ecohealth should be taught in a way that it consistent with learner-centred theory and practice. The best way to instil
Ecohealth principles in your learners is to model them in your teaching. As you develop your Ecohealth teaching practice, reflect and experiment with ways you can incorporate Ecohealth principles into your teaching practice.

**REFLECTION**

Once you have developed your Ecohealth course content, take time to brainstorm with your peers the ways your approach to teaching the principles of Ecohealth could reflect those same principles. See manual *Introduction* and *Module 2: Introduction to Ecohealth* to familiarize yourself with these strategies. For example:

- How can teaching the principle of participation be done in a way that is participatory and models the Ecohealth principle?
- Which principles are easiest to model in your teaching?
- Which is the most challenging?
- Why is it important to model the Ecohealth principles in your teaching? Are there some cases where this might not work?

### 3. Phases of Ecohealth Course Design

**ASSESSING THE NEEDS OF PARTICIPANTS**

A core feature of good instructional design is to know the needs of your participants so that the instruction you design and deliver is appropriate to them.

In Ecohealth teaching it is especially important because Ecohealth requires researchers to collaborate with many different people, including researchers from other disciplines, multiple members of local communities, policy-makers, etc. In order for you to develop an instructional design that will help to develop the transdisciplinary and collaborative skills of your participants, it will be helpful for you to know what skills, knowledge, and experience they bring with them. This will enable you to mobilize their capacities as part of the course, and to provide opportunities for participants to teach from their previous experiences. You may want to encourage transdisciplinary collaboration by designing groups with participants from a mix of disciplines. Sometimes groups can be designed according to skill or personality sets, although this can be more challenging. Knowing the expectations of the learners is also important, as is knowing the needs of the organization, if there is one that contracted you to do the training, so you can deliver training that is appropriate to their expectations.
METHODS

You can ask participants to do a one- or two-page survey before the course that will seek information on:

- Ecohealth-related experiences
- Interests in Ecohealth
- Expectations from this course
- Relevance of the course to broader learning, work, and life goals
- Potential application of learning from this course
- Their skill set
- How they usually participate in group situations.

If you are not able to do a pre-course assessment, you could incorporate this into your introductory session, by asking participants:

- Why are you taking this course?
- What are you hoping to learn?
- What relevant knowledge, skills, and experience are you bringing with you?
- What skills can you offer in teamwork?

CHALLENGES

This assessment step creates more planning for the course designer and instructor. Doing the assessment will create an expectation that it will have some effect on the course. If you do take the time to do an assessment, then it is important that you actually use it. This will require you to analyze the results and find ways to incorporate them into your instruction.

INSTRUCTIONAL DESIGN OF THE COURSE

KEY CONSIDERATIONS

- Who are the participants? What are their capacities and their needs?
- Do your participants come from different disciplines and institutions or the same discipline?
- How can you mobilize the capacities of your participants during your course? How can you enable them to share their experiences and learn from one another?
- What elements of Ecohealth will you be delivering?
- What order of content will best facilitate learning?
- How long do you have?
• What is the layout of the learning space?
• Who will facilitate the course? One instructor? A transdisciplinary team? One or two instructors with guest speakers?
• Are you able to build field visits or fieldwork into your course?
• What kinds of hands-on activities are possible?

**Course Development Steps**

1. Develop learning objectives [see sample course learning objectives].
2. Determine course length and content and begin a preliminary draft of the schedule. Make sure to include ample time for informal discussions and for participants to get exercise or a change of scenery, and to reflect quietly if need be.
3. Select a location. Ideally you will have:
   • A room with lots of room for moving around
   • Tables that can be moved into different formations
   • Walls for attaching posters
   • Outdoor space nearby so that participants can get fresh air, or if the weather is good some sessions or discussion might be held outdoors
   • Refreshment space (for drinks or snacks), if appropriate.
4. Decide who will be included in the teaching process.
5. Decide if you will bring in members of the community, policy-makers, or experts from different disciplines.
6. Decide whether you will organize a field visit. If yes, determine whether you can develop a case study or learning scenario where the visit has direct relevance.
7. Develop the case study or learning scenarios that will be part of your course. [See Using and Developing an Ecosystem Approach to Health Case Study in your Teaching: ecohealth.vetswithoutborders.ca.]
8. Design participant questionnaire [See “Pre- and post-course evaluation”] and send it to participants.
9. Analyze the capacities of your participants based on the results of your pre-course questionnaire and make appropriate adjustments in your course design. Keep in mind that you are looking for ways to incorporate their prior knowledge and experience so that they can contribute to the delivery of some of the course content. You also want to ensure that your course is responsive to their learning needs.
10. Analyze the order of sessions and activities in your course schedule.
    • Are the sessions ordered so they logically build on one another? Will participants be able to bring their learning and experience from previous sessions to later sessions? Can you build in exercises that will help create this kind of continuity?
11. Develop reflective questions for different moments in your course that will help participants to think about their experiences and develop their learning. Build in time for these moments! Nothing constrains reflection more than being rushed from one thing to the next.

12. Develop feedback questions and determine when and how you will conduct in-course evaluation. See “In-Course Evaluation” below.

13. Reflect on your capacities as a trainer and your goals in teaching this course. What do you bring? What skills do you hope to develop or strengthen?

4. Facilitation and Delivery of the Course

**INTERACTIVE CONTENT**

What facts are essential to communicate to participants and what concepts and tools can they explore together through group work and dialogue? In the delivery of content, try to make it as interactive as possible. For example, if you are teaching how to visualize complex systems, try building the system map with the learners rather than showing them maps and diagrams on PowerPoint. Their ability to understand and retain the concepts will be much greater if you construct it on the spot through dialogue.

**ASKING QUESTIONS**

The effective use of questions is one of the most important skills needed by trainers. By asking questions, the trainer helps the trainees to think for themselves and stimulates a process of discovery. If trainees think about a problem and come up with answers themselves, they are much more likely to remember the information than if they were just given the same information by the trainer. Open questions are those questions that start with words what, when, how, where, who, and why. These types of questions encourage people to think and analyze because there is not necessarily a predetermined answer. Some open questions are: What are the causes of poor growth in animals? How can the existing health services be improved?

**SKILLS OF AN ECOHEALTH TRAINER**

- Curious about multiple perspectives on issues
- Open to learning new terminology and approaches
- Able to teach in more than one style, to co-teach, or collaborate in curriculum design and facilitation
- Flexible in teaching – able to adapt the style of teaching and the curriculum of the course to meet the circumstances they encounter
- Comfort with higher levels of uncertainty (higher than is normally encountered).
**CHALLENGE**

Some content is best delivered in a traditional lecture (or supervisory) format and yet it is important to make sure that there is space for participants to question, elaborate, and work with any knowledge that is given to them. Although Ecohealth is an approach and not a discipline, it has principles and core features that need to be learned. As an approach it is not closed to further evaluation, refinement, and elaboration through dialogue, but neither is it entirely open to any kind of revision. In teaching Ecohealth, it is important to be continually cognizant of this tension between established knowledge (stable, constant) and constructive growth and development (flexible, dynamic).

**COMPONENTS OF ECOHEALTH INSTRUCTION**

- Transdisciplinary teamwork and problem solving
- Case study and fieldwork
- Collaboration and community involvement
- Reflection and debriefing
- Team teaching
- Feedback, evaluation, and assessment
- Group work and discussion.

5. Evaluation and Assessment

If there is time, this section can be delivered as an interactive lecture, and participants can be asked to develop (individually or in groups) some evaluation and assessment materials for the course. If there is not time, then this section can be used for instructors to read and use in developing evaluation and assessment components of their courses.

**PRE- AND POST-COURSE ASSESSMENT OF PARTICIPANT’S CAPACITY**

**Questionnaire**

As part of your pre-course questionnaire, try to ask some questions that will assess participants’ level of Ecohealth knowledge and awareness. At the end of the course re-ask some of the same questions to gauge the degree of learning achieved.

**IN-COURSE EVALUATION**

**I. EVALUATION OF PARTICIPANT PERFORMANCE**

- How (and if) you evaluate participant performance in an Ecohealth course will depend on the context and institutional arrangements. Some potential areas for evaluation are:
  - Presentations
• Written proposals
• Written lesson plans
• Case study reports
• Participation
• Nature of collaboration.

• You may also want to include learner self-assessment as part of your evaluation strategy. Participants are asked to assess their own performance on each of the assigned tasks. This can promote higher levels of self-reflection in learners, and give the opportunity for teachers and learners to dialogue about performance, expectations, and evaluations. You may decide that learner self-assessment does not need to be shared with the trainer but used by the learners as an opportunity to reflect, or that learners could discuss in pairs.

• Another approach worth considering is to have multiple potential assignments and allow learners to select the ones they will include for evaluation in their “learning portfolios.” This enables a high level of learner self-determination and ownership over their learning.

• Whatever you decide, it is very important to make your expectations clear about how participants will be evaluated, and wherever possible to provide learners with a marking rubric as soon as you assign the work.

II. PARTICIPANT FEEDBACK

Verbal Feedback
• At the end of each day it is a good idea to spend some time (from 15 minutes to an hour) debriefing the activities of the day. This is a great time to gather some feedback on how the course is working for the participants and any constructive changes or suggestions that might help to improve it. It is important to facilitate a realistic conversation about possible adjustments—some changes could already be in effect the next day, while others would have to be implemented in future courses. If you are not fully comfortable facilitating a discussion about course changes, then an option is to obtain individual feedback in writing.

Written Feedback
• During the course you can ask participants to provide brief feedback on what is working and what is not to this point in the course. You might also ask them to identify the moments when they have been engaged and moments when they have not felt engaged. This brief feedback can give you insight into your teaching and the course curriculum. In many cases it may be possible to make minor adjustments that can improve the rest of the course.
CHALLENGES

You do not want to raise participant expectations if you cannot meet them, but enabling participants to actively modify elements of how the course is structured and delivered can be a very engaging exercise, and can be beneficial for all involved. The important thing is to balance your capacity to facilitate both the conversation and the course with participants’ ideas and expectations.

As a trainer, you should keep good records of participant feedback for your own reflection.

III. TRAINER SELF-ASSESSMENT:

- Did participants SEE it? (photos, real life examples)
- Did they HEAR it? (explanation, description)
- Did they TALK about it? (learner-centred discussions)
- Did they DO it? (practice technique, hold animal, use equipment, etc.)

POST-COURSE EVALUATION

Develop a short or long course evaluation survey for participants to complete after the course. If short, ask them to do it during the week after the course, after they have had a few days to reflect. If the evaluation survey is longer, you may want to wait a month. You might also consider following up with participants three months, one year, and (where possible) five years after the course. In seeking to conduct an evaluation you are often trying to probe:

- When they were most engaged
- When the setting was conducive to learning
- Whether the instructors facilitated learning
- What they learned
- What they used in their work following the course
- How the course may have affected them in other ways: new ideas, new contacts, etc.
- What worked and what did not
- Ideas for improvement.

ACTIVITY

Review the Ecohealth course or parts of the course (e.g. focus on one module section) in this manual as an example and reflect on its methods, effectiveness (objectives, lesson plans). How would participants improve on this and integrate this into their own courses? How would participants modify this manual to suit their context—country, institution, learner needs, etc.?
PEER FEEDBACK AND SUPPORT

Many educators find gaining feedback from their peers helpful in developing their capacities. This can be done in an informal way simply by asking for constructive feedback on your course design (or your facilitation) from someone you consider a peer.

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