

CONDUCTING EFFECTIVE TRAINING WORKSHOPS



November, 2005



AIGF



Australian Government
AusAID

This workshop handbook, ***Conducting Effective Training Workshops***, aims to assist agricultural extension trainers to effectively plan and conduct training workshops. This edition does not cover all aspects of workshop development and facilitation but introduces the main principles.

Robert Songan and Laurie Fooks, 2005

CREDITS

This workbook is based on materials developed for the ACIAR PNG Scientific Communication Project (SciCom). The SciCom project retains copyright to the materials.

The SciCom project was established to facilitate development of a course to assist researchers, extensionists, academics and others whose work involves communicating science and to nurture a national partnership for better communication in science. The SciCom course has resulted from a collaborative effort involving five PNG universities (UOT, UOG, UPNG, UOV, DWU), PNG research institutes and the University of Queensland. The SciCom course is currently offered as a ***Graduate Certificate in Communication of Science and Technology*** by the PNG University of Technology.

Web: www.scicom.ac.pg

Contents

<i>Introduction</i>	6
<i>Road map</i>	7
<i>Goals</i>	9
<i>Needs Analysis</i>	11
<i>Objectives</i>	14
<i>Content, activities and learning</i>	18
<i>Scheduling</i>	23
<i>Evaluation</i>	26
<i>Facilitation</i>	30
<i>Feedback sheet</i>	95
<i>Readings</i>	
<i>Rich Pictures</i>	43
<i>Bennett's Hierarchy</i>	45
<i>Learning Principles</i>	50
<i>Refining workshop objectives</i>	61
<i>Visual aids</i>	70
<i>Glossary</i>	78
<i>Needs Analysis</i>	86

Tables

Table 1: Using the Bennett's Hierarchy framework to determine the objectives, target audience, activities and resource requirements	14
Table 2: Expanding the Bennett's Hierarchy to show the indicators for the objectives and how they will be measured.....	15
Table 3: Example of planning for this workshop using Bennett's Hierarchy.....	16
Table 4: Determining content and activities from KASA – a tool for workshop planning.....	17
Table 5: Determining content and activities from KASA – an example for this workshop.....	20
Table 6: Example of some activities for facilitating a workshop - things that need to be done so that the workshop can happen.....	21
Table 7: Example of extended Gantt chart - Producing and distributing the first newsletter giving examples of women successful in leadership positions within village communities.....	23

Illustrations

Illustration 1: Road map - planning and facilitating a workshop.....	5
Illustration 2: Rich picture of vanilla industry - an example created by "non-experts" as a workshop activity.....	7
Illustration 3: Learning process.....	17

Welcome to *Conducting Effective Workshops*. This workshop provides a hands-on opportunity to plan and prepare for a training workshop.

Providing support and training for various stakeholder groups is often an essential ingredient for industry development.

The participants for this workshop are extension trainers and managers who are or have taken responsibility for development of a commodity in their province or region. This workshop is to enable participants to plan and conduct workshops for extension providers, farmers and other stakeholders.

Workshop Objective



By the end of this workshop the participants will develop and complete a plan for a training workshop which they will conduct with target stakeholders in their province or region.


This workshop deals with planning and conducting an effective workshop. It will introduce us to some concepts underpinning the planning and facilitation of a workshop. This workshop is an example of how one can be planned and conducted. In this case it is used as a training method for us to learn so can plan and conduct one ourselves.

In a sense, a workshop is a method that suppose people to produce what we intend for them to learn. For example, if a workshop is about improving the quality of meat for export, the participants should develop or revise ways of improving the quality of meat to meet export market standards. In the process of developing/ revising ways of improving quality standards, they would have considered actively with each other and the facilitator important issues that affect quality of meat. In this way, learning and application takes place together during this period. What they produce during this workshop is the evidence of their learning and is more likely to be repeated in their workplace leading to change and improvements to what they do in their work / lives. As the name workshop suggest, it is a session or series of sessions where participants work to learn and apply the learnings they have done.

Following from the above, training through workshops is based on the belief that if one actually produces or can do what he/she is learning, learning becomes more useful, meaningful and long lasting. It can be extended further to include the belief that useful learning should and **must be translated into products or turned into things that improve our lives.**

Experiential Learning will be used as facilitation technique/method in this workshop where your experiences from your work and workplace about planning and conducting workshops will used.

The 'road map' for the workshop is on the next page.

 **Facilitation – assisting others to learn through personal and group activities.**

The facilitator acts as a “Guide on the Side” rather than as a “Sage on the Stage”.

PLANNING AND CONDUCTING A WORKSHOP

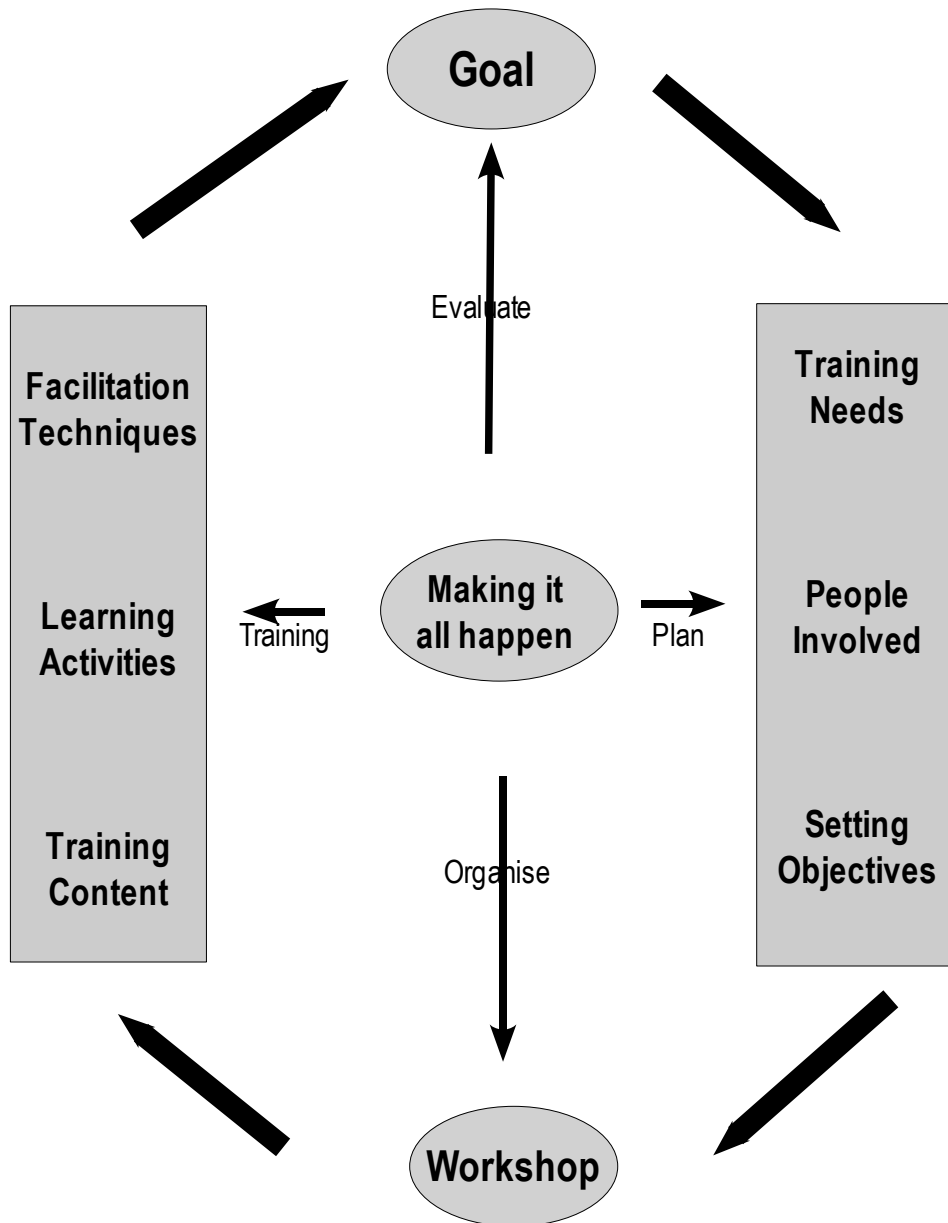


Illustration 1: Road map - planning and facilitating a workshop



Creating a suitable workshop environment

To ensure that we get the most out our learning experience in this workshop, we will set ourselves some simple rules and agree to follow these during the workshop. This provides a framework for us to relate to one another during the workshop - to maximize the learning for all of us.

Our Ground Rules

Personal experiences about workshops.

Before we start on the learning content you are asked to reflect on your own experience with teaching and learning and training workshops.



Individual reflection [10 minutes]

Reflect on your own experiences of workshops you have attended. Consider the different ways people who conducted the workshop helped you learn.

Consider the following questions:

1. For workshops that you believed you learned a lot, how were these conducted differently to others you believe you did not do very much learning?
2. How would you describe your personal approach and beliefs about conducting workshop?
3. What do you expect to gain from this workshop?

What comes first?

From today's sessions, you will have:



1. Identified the goal of the training workshop and the impact it will have in the community;
2. planned a training needs analysis and defined the needs for a workshop;
3. laid out a hierarchy of objectives for a workshop;
4. determined the knowledge, skills, attitudes and aspirations as contents/learnings of a workshop in relation to the needs;
5. designed the evaluation for the workshop and;
6. designed the learning strategies for a workshop.

Understanding the situation – What is our Goal?

The goal outlines the planned impacts we are seeking. Having a clear goal and following this through to align with the workshop activities is important to ensure your workshop is contributing as intended to these planned impacts.

Focus groups, brainstorming,, mindmapping, and rich pictures are some of the techniques which can be used to help clarify the goal and how the workshop can contribute to this goal.

Activity 1

Divide into two equal groups and each group develop a 'rich picture' of the industry in PNG.

A **rich picture** is a dynamic representation of an activity area using diagrams, words, sentences, arrows, symbols etc. (see Reading 1 in this booklet). Two or three pages of butchers paper should be joined together and put on the wall. As new information is offered or added note it/draw it on the butchers paper. Use arrows to denote relationships or consequences.



Illustration 2: Rich picture of vanilla industry - an example created by "non-experts" as a workshop activity

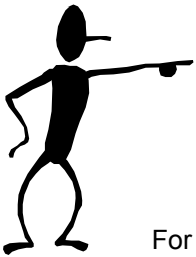
Conducting Effective Workshops

Some questions you ask:

- Who are the stakeholders? - Consider the role of innovative farmers and the importance of the non-farm sector (marketing chain)
- What is the status of the industry?
- What are the issues?
- What drives the industry development?
- What research is being done?
- What extension activities, communication media/products are being used ?

Notes:

Why should we care about needs analysis?



Key Message

People will want to learn and learn more effectively when learning is related to meeting their interests and when their personal needs are met.

For those workers close to farmers, needs analysis involves working with the community or group to find out what the community or individual farmer is interested in doing and what it/he she considers it/his/her needs. If some of these needs are outside the scope of your organization, then efforts should be made to gain cooperation of the relevant organization so that the priorities determined by the community/farmers can be met. (Thus, if the community/farmers want/s help in introducing vanilla rather than a program aimed at raising goats, then vanilla should be the priority. The goats can come later. Only in this way will the community/farmers feel that the change agent is on their side.)

Needs analysis can be directed at the industry overall or the various components or stakeholders which make up the industry such as farmers, marketing organisations, extension providers, researchers etc. Before deciding on the techniques used in collecting information it is therefore important to clarify the beneficiaries, purpose, issues, participants, process and outcomes of the assessment. The following types of questions would be helpful in obtaining the required information.

- Questions about the beneficiaries (for whom)
- Questions about the purpose (why)
- Questions about issues (what)
- Questions about participants (who)
- Questions about process (how)
- Questions about outcomes (how, who, what)

Many techniques can be used to tease out the needs. Techniques include brainstorming, mindmapping/rich pictures, SWOT analysis, surveys, interviews, focus groups and RRA/PRA.

Assessment instruments need to be developed to get a better picture of what the intended participants need and on the type of workshop material that will be useful. The audience for extension officers can be farmers, health workers, community workers, factory workers, school children, mine workers...and the list goes on.

Assessment Instruments

Questionnaires and survey forms are examples of the "instruments" used to collect data

There are many aspects to training needs analysis, but the essential activity involves:

1. Determining what is required to achieve the required objectives / impact. This considers the current capacity and is sometimes referred to as a situational analysis.
2. Determining the existing skill levels of the stakeholders. This would be part of a participant analysis which aims to ensure the training response meets the **needs** and is targeted at the right **level**.

3. From 1 & 2, determining the training gap (if any).

The reading on Needs Analysis at the back of this workbook, "Determining Rural community Needs",¹ provides some approaches to conducting needs analysis.

Activity 2

Do a situational and participant analysis using the guidelines below – for this exercise, these analyses may be hypothetical or based on your casual observation or research data you have collected.

Situation Analysis

- Describe a particular situation in the work and the workplace of the participants/farmers for whom you or your associates want to conduct a workshop.
- Describe the importance of the situation with respect to the product(s) and service(s) the participants produce and provide, and their work and workplace.
- Describe the resources in your organization that would enable you to conduct a workshop that will successfully meet the needs the workshop is going to address and that of the participants.
- Describe the staff, including yourself, and others might assist you to run the workshop.
- What might positively and negatively affect the participants or the running of the workshop.

Participant Analysis

- Describe who they are collectively – note any individual/personal detail that might need you attention during the workshop.
- What do they do?
- Level of their education.
- Level of their knowledge and skills with respect to what the workshop intends to get them to do/learn.
- What knowledge and skills they may require to learn at the workshop?
- What attitudes do they have that you might like to change?

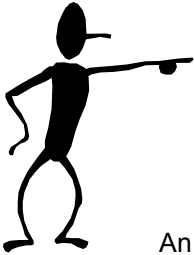
¹Mortiss, P. 1993 "Extension for Rural Change", 2nd ed. QDPI, Brisbane

After you have completed the analysis, consider the following questions:

1. It is important that the information about the situation and participants is true – It must be reliable and valid. How do we ensure this?
2. Why do we have to know about needs to develop a workshop?
3. What is different between the situational needs analysis and participants needs analysis?
4. How does each addresses learning?
5. How do we relate one group of needs to the other?
6. Why does a need influence a plan?

Notes:

Objectives are important for your workshop?



Key Message

Without aims and objectives participants may learn something other than what they intended to have learnt.

An **aim** is a general statement of what a workshop is about.

An **objective** is a specific statement of what we would like workshop participants to learn and do. These are about the knowledge, skills and attitudes they need to acquire during the workshop to meet their needs so they are able to change or improve their situation.

We might have one or two aims for our workshop but will have many for objectives

An Aim might be:

The workshop aims to assist the farmers improve the quality of meat.

Objectives associated with this aim might be:

1. **Knowledge: At the end of the workshop the participants** should be able to demonstrate understanding (explain, discuss, ..etc) the feed requirements for weight gain of animals.
2. **Attitude: At the end of the workshop the participants seek to** equip his/her workers with proper work clothing.
3. **Skills: At the end of the workshop the participants** should be able to brand animals.
4. **Aspirations: At the end of the workshop the participants** will aspire to improve the quality of his/her stock.

What is a good objective?

On occasions these terms aims, goals and objectives are confused and used incorrectly. To help avoid this problem each is defined in Glossary in back of the workbook.

How can we tell if an objective is a good one? Good objectives are 'SMART' objectives in that they are:

- **S**pecific
- **M**easurable
- **A**ction Oriented
- **R**ealistic
- **T**ime-bound

We now take a look at Bennett's Hierarchy which provides a framework to lay out the objectives and maintain a focus on the goal.

This Chinese proverb demonstrates the importance of objectives to aim:

'A seahorse set out to look for his fortune and ended up in the shark's mouth.'

The moral of this story is that while the seahorse had very clear aim, it ended up someplace because he did not know how to get there. Objectives, in this case, enable us to achieve our aims

Bennett's Hierarchy² (of objectives)



Table 1: Using the Bennett's Hierarchy framework to determine the objectives, target audience, activities and resource requirements

Hierarchy Level	Description
7. Community Goal (impact).	The overall objective to which the workshop will contribute. This describes the impact our workshop will have on the target audience. While we should try to be specific, this is often broad and may involve contribution by several activities besides a workshop. In this case, the contribution by the workshop should be specified.
6. Changes in Practice.	The changes that will be observed as a result of a successful workshop. In most cases this refers to changes in practice directly implemented or influenced by the workshop participants. The practice change is necessary if the overall goal (level 7) is to be achieved.
5. Learning (KASA) Knowledge Attitude Skills Aspirations	The changes in people's understanding and thinking as a result of participation in the workshops. These changes are needed if the level 6 or 7 objectives are to be achieved. These make up what we need to achieve during the workshops. They may not all apply in every case. Attitudes and aspirations are important but often (wrongly) not considered as we concentrate on knowledge and skills.
4. Reactions	The desired reactions from people who attend the workshops. How do we expect the participants to react to the workshop, content, process etc. Will they be excited, worried, motivated, challenged.....
3. People Involvement	Target groups and stakeholders – numbers; locations; socio-economic groupings; gender involvement. What groupings are needed to achieve the above objectives. eg. If women participants are necessary to work with female farmers, the activity will be less effective if the women are not involved in the initial training. Similarly for support from management to conduct the activities.
2. Activities	Planned and resourced workshop planning and implementation activities required to achieve objectives.
1. Resources	Available budget, staff (and their skills) and other resources required for the workshop. While we work from the top (level 7) to determine the activities and resource requirements, we may need to explicitly adjust the possible achievement if resources are limited.

²Bennett, C. (1976) *Up The Hierarchy Journal of Extension, March/April, USA 7-12 – copy at back of this workbook*

Conducting Effective Workshops

Incorporating columns to show the indicators for the objectives and how these indicators will be measured will help to make the objectives clear. These indicators will also be useful later, for evaluation of the workshop.

Table 2: Expanding the Bennett's Hierarchy to show the indicators for the objectives and how they will be measured

Hierarchy Level	Objective	Indicators of achievement of objectives	How the indicator will be measured
7. Community Goal (impact).			
6. Changes in Practice.			
5. Learning (KASA) Knowledge Attitude Skills Aspirations			
4. Reactions			
3. People Involvement			
2. Activities			
1. Resources			

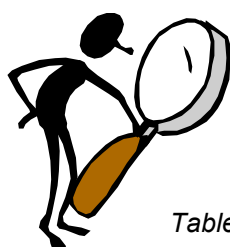


Table 3: Example of planning for this workshop using Bennett's Hierarchy

Hierarchy Level	Objective
7. Community Goal (impact).	Improved farmer skills and increased farm production will result from improved access to new technologies.
6. Changes in Practice.	As a result of this workshop, within 4 months, there will be an increase in the number of farmer training workshops and in the effectiveness of these workshops for the selected commodity and target communities.
5. Learning (KASA) Knowledge Attitude Skills Aspirations	<p>Extension workers will know the process for planning and running an effective farmer training workshop and be equipped with up to date knowledge of the required commodity production technology.</p> <p>Extension workers will have a positive attitude to planning, preparing and practising effective workshop techniques and to further studying and understanding the application of recommended production technology with their target farmers.</p> <p>Extension workers will have the required skills to develop and run farmer training workshops for selected commodities.</p> <p>Extension workers will aspire to conduct farmer training workshops and to be effective workshop facilitators.</p>
4. Reactions	Extension workers will show interest to learn about workshop techniques and new commodity technologies and in developing workshops for their target farmers.
3. People Involvement	The workshop will involve female and male extension workers or trainers from selected provinces who will be responsible to organise farmer training workshops in their respective provinces.
2. Activities	<p>Plan, organise and conduct an activity based workshop.</p> <p>Gain support from management and stakeholders.</p>
1. Resources	<ul style="list-style-type: none"> ➤ Training manuals ➤ Resource materials ➤ Stationary items ➤ Accommodation and workshop venue ➤ Workshop methodology facilitator ➤ Commodity experts ➤ Budget of K30,000.



Objectives are important because they point us as to what the participants need to learn and what to do to assist them to improve their situation. They assist us to select what knowledge, attitudes, skills and aspirations the participants have to consider during a workshop so they can learn and apply these in real life.

Selecting content and activities your workshop

Often, we select the workshop content before we write our aims and objectives. This has the danger of not meeting the needs of our participants and as a result may not change or improve the situation we intend to change/improve.

Objectives are derived from needs we identified from analysis of the situation and knowledge of participants. Content comes in the form of knowledge (process or concepts), skills, attitudes and aspirations. Our objectives should guide us to what knowledge, skills, aspirations and attitudes our workshop need to have.

Workshops are designed for people to acquire skills and attitudes to do things. Knowledge about these is necessary but readily application of these to reality of life and work is more important. Knowledge therefore should not terminate at **knowing** but must be **applied to reality** to satisfy the needs we identified during our analyses.

Table 4: Determining content and activities from KASA – a tool for workshop planning

KASA		Content (What)	Activity (How)	Resources needed
Objective	Type			

Conducting Effective Workshops

We are all very familiar with the important role visual aids and practical sessions play when conducting a workshop. We have many options available from flip charts to video presentations. We select those most suited to the application and according to the resources we have available.

We also need to remember that individuals learn in different ways and this may require us to consider using combinations of methods of presentation to help learning.

In addition to the preparation of visual aids to support our content and activities and consideration of using varying methods of presentation or activity, we also need to consider the learning process. The following illustration follows the process from the ideas we would like our participants to learn to the application of these ideas in practice by the workshop participants.

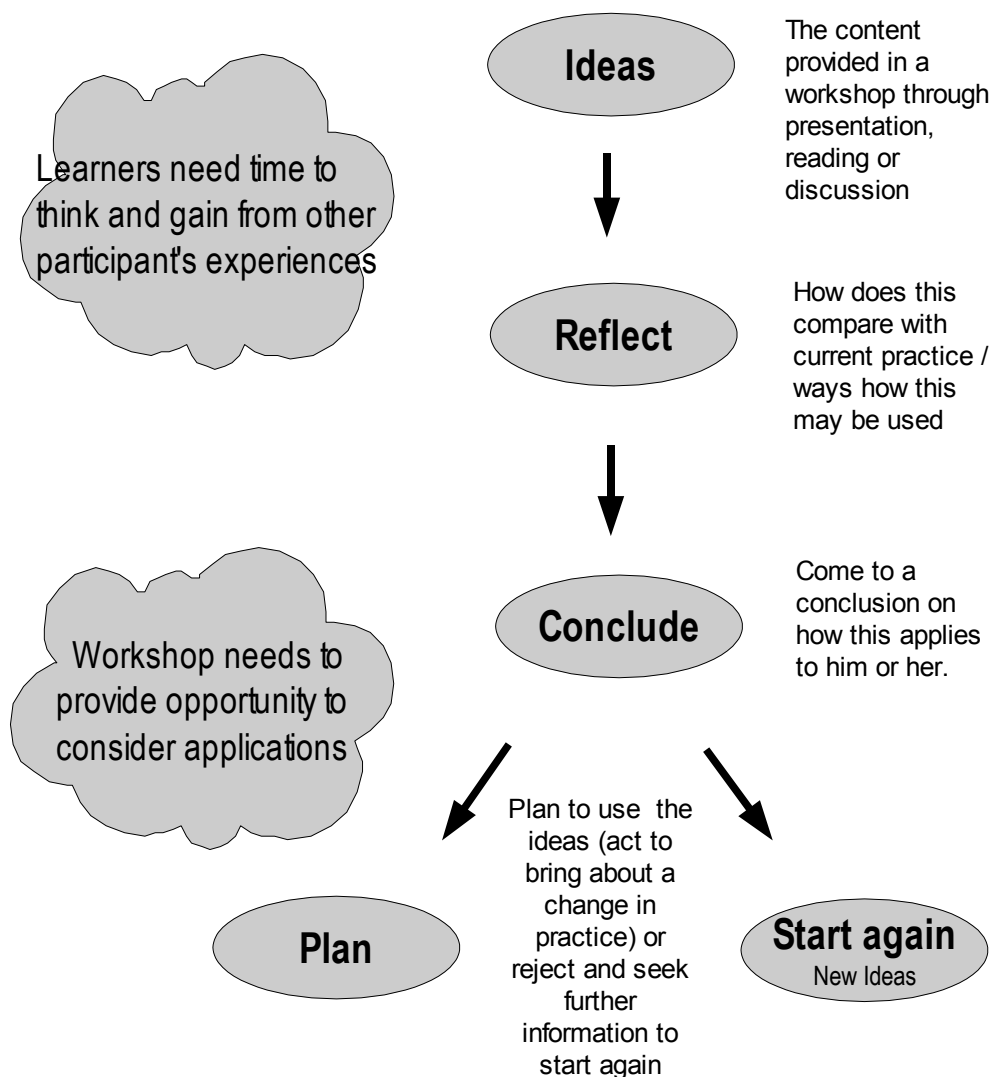


Illustration 3: Learning process

Stanfield (1997)³ reviewed the literature on adult learning and came up with his list of "Ten Learning Principles". These are:

Stanfield's 10 Learning Principles

1. I help them learn what they want to learn.
2. I recognise and value their experiences.
3. I create a safe learning environment.
4. I involve them in their learning.
5. I recognise that they are adults.
6. I encourage them to act.
7. I encourage them to reflect.
8. I encourage them to draw conclusions.
9. I encourage them to plan.
10. I help them to see that their learning has been successful.

Here is another version found in A Guide to Understanding Adult Learner. R. Szczytkowski. Priority in Adult Education. Q.Gessner

1. Adults learn best those things which are of interest and importance to them.
2. Adults typically engage in a continuing education activity because they want to use what they soon after they have learnt it.
3. Adults clear goals and objectives provide a clear sense of direction.
4. Adults learn best when both their personal and social needs are taken into account as well as their professional development needs.
5. Adults learn best when they actively participate in the learning process.
6. Adults learn best in an accepting environment where they feel comfortable asking questions and/or expressing feelings and opinions about things which they are learning.
8. Adults learn best when their background and previous experience are taken into account.
9. Adults learn best when connections are made between new learning and relevant prior knowledge and experience.
10. Adults learn best when programs a part of a general staff development plan, rather than a 'single shot' program.

³ Stanfield D (1997) *Training – If you grab them by their learning principles, the rest will follow in Proceedings 2nd Australia pacific Extension Conference: Managing change – building knowledge and skills.* - see reading at back of workbook

Conducting Effective Workshops

- What have Stanfield's 10 Principles and Szczykowski's Guide to understanding adult learners say about facilitating effective adult learning?
- What PNG cultural practices are not picked up by Stanfield, Szczykowski, or by the other western-based literature?
- What activities you have for participants do to learn and apply what you want them to learn and apply in your workshop.
- What are difficulties you found trying to design learning activities for the content of your workshop?

Similar information, as in this illustration of the learning process, is often presented as a cycle can be found in adult learning references referring to "Action Learning" or "Experiential learning"

How might this apply for your workshop situation?

Notes:

Table 5: Determining content and activities from KASA – an example for this workshop

KASA	Objective	Content (What)	Activity (How)	Resources
	Type			

Making it happen



A good plan may be just that – a plan sitting on a shelf collecting dust. A plan needs to be prepared and then used and adapted as necessary.

Sequencing activities – GANTT Chart

It is all very well to make decisions about how and when these things should happen, but bringing the time, resources and expertise together to make them a reality is also essential. There are a number of tools that can be used to help us to plan and sequence the steps happens.

One tool is the GANTT Chart. This tool helps us to look at what steps need to be taken in relation to other steps and the time line involved. The GANTT Chart is useful in helping to visualise the answers to the following questions:

- What are the discrete activities that need to occur to make the workshop happen?
- Which activities need to occur before others? Which can be done simultaneously?
- When does each activity have to be completed so that the workshop finally happen on time?

Table 6: Example of some activities for facilitating a workshop - things that need to be done so that the workshop can happen

Activity Steps	January	February	March	April	May	June
1. Generating interest and support						
2. Defining the group						
3. Needs Analysis						
4. Planning the workshop						
5. Resources (people / materials)						
6. Deciding on the site and venue						
7.						

Conducting Effective Workshops

Once the discrete activities have been identified and the GANTT chart completed, then it will be clear **what** has to be done by **when**. It is then a matter of assigning the **who**, the **how** and the **cost**. Add three columns to this chart – **how, by whom**, and **what cost**.

This provides a good reality check (Do we have the time and resources needed?) as well as a management plan and project monitoring guide.

What you will notice from this example is that some activities can be undertaken simultaneously, while others have to be completed before another can start (milestones ♦). All activities need to be completed by June 30 if the target date is to be met.

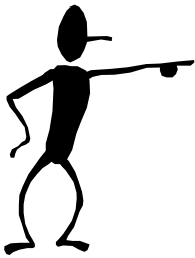
Notes:

Conducting Effective Workshops

Table 7: Example of extended Gantt chart - *Producing and distributing the first newsletter giving examples of women successful in leadership positions within village communities*

Activity Steps	J	F	M	A	M	J	How	By Whom	Cost
1. Obtain stories and photos of successful women.		◆					Four field visits to village communities in Morobe and Central Provinces. Interview key informants. Car hire/air tickets.	Project journalist.	K5000
2. Put together a mailing list of target individuals and groups in village communities across PNG.					◆		Contact government and Church Groups by mail, phone and personal visits. Put on data base.	Project Officer. Casual admin person.	K1000
3. Select and edit stories to go into newsletter.		◆					Collate in office and edit on computer	Project officer. Casual admin person.	K500
4. Plan layout, size, paper quality, identity of newsletter.							Team discussions. Use of Page-maker	Project Journalist. Whole Team.	K300
5. Do out a draft newsletter.							Page maker. Print on project printer.	Project journalist.	K100
6. Test newsletter with a small group of the target audience.							Run a focus group in local village.	Project Officer.	K200
7. Make modifications.							Collate feedback. Team decisions. Pagemaker.	Team Journalist.	K200
8. Print final copies.					◆		Take disk copy to commercial printer.	Project Officer	K5000
9. Negotiate mail-out costs with PNG Post.							Visit HQ in POM while on field trip. Follow-up by letter and phone.	Project Officer. Journalist.	K50
10. Put in envelopes and send out newsletters in the post.							Work at office. Drive packaged newsletters to post office.	Casual Admin Person.	K3000

Evaluation



How would we know whether we have met needs and expectations of the participants and how can we improve the workshop so participants learn better and apply their learning to improve their practices and outcomes?

Key Message

There is always the reality that participants in any learning event could have acquired more and better learning.

Evaluation is the process gathering information (feedback) about the workshop for improvement and enhancement of learning for future participants. It is about making judgments for decision-making. Judgments about workshops can include such things as:

- a. Is this the right process and content for the purpose and target audience?
- b. Is the workshop development occurring on time and within budget?
- c. Is this a 'good' workshop – consistent with professional standards and principles?
- d. Is the workshop reaching the intended target audience?
- e. Is it being understood and having the impact that is intended?
- f. Was it a good use of time/money?
- g. How would we do it better next time?
- h. What should we now do as a follow-up?

These judgments/decisions can be based around 3 aspects:

- A. Workshop development logistics.
- B. Quality of the workshop – content, presentation, venue.
- C. Impact of the workshop in relation to its purpose.

A. Workshop development logistics

This aspect relates to management of the workshop project. Tools such as the extended GANTT chart can be used to track progress against original time lines and can also be used to compare actual activities and costs against planned activities and budgets.

Based on evaluation at this level, changes can be made in resources and time-lines and even in the appropriateness of continuing with the current workshop development.

B. Quality of the workshop – content, presentation, venue.

This aspect relates to the actual conduct of the workshop. This requires monitoring during the workshop for problems and things that need to be changed or followed

up within the current workshop period. Visual signs and assessment by facilitators of understanding of key messages is vital for this.

It also serves to assess the overall workshop with a view to improving or even deciding whether to continue with future workshops. Gathering of feedback is essential and methods such as feedback forms or group discussion can be used to suit the group.

What questions would you include on a feedback questionnaire?

C. Impact of the workshop in relation to its purpose.

This is an area which is often neglected as it is more difficult to gather information and make an assessment.

Impact relates to whether the workshop reaches the target audience(s), their reaction to it; the impact of the product on their knowledge, attitudes, skills and aspirations; practice changes that may result; and the overall benefit to the community.

Using Bennett's Hierarchy to help evaluation

Refer to the use we made of Bennett's Hierarchy in planning a workshop. Evaluation is the 'flip side' of planning.

One method to link Bennett's Hierarchy with these three aspects of evaluation is to consider:

Aspect A (logistics) as relating to Level 1 in Bennett's Hierarchy.

Aspect B (quality) relates to Level 2.

Aspect C (impact) of the workshop goes through the remaining levels of the Hierarchy – Levels 3-7. These provide a framework for assessing the impact at different levels.

The questions that need to be addressed are:

- a. What is the intended impact (objective(s)) of the workshop?
- b. What are the indicators that these impacts (objectives) are being achieved?
- c. How can we gather the information to check against these indicators?

An example is given below using Bennett's Hierarchy and based on an example of improving the status of women in village communities.

Modified Bennett's Hierarchy Log Frame – Example			
Hierarchy Level	Description of Objectives	Indicators that level objectives are being reached.	Means of obtaining the information to check against indicators.
7. Overall Community level.	Improvement of status of women in village communities.	Women have increased opportunity to hold leadership positions and a valued in that role.	Ethnographic observations in selected villages each year. Interviews with different groups with communities over time.
6. Changes in Practice.	An increase in the number of women elected to responsible positions within village communities.	An increased number of women holding responsible and leadership positions with village communities.	Before and after surveys of records of local government, NGOs and churches. Analysis of national election results.
5. Changes in Knowledge Attitude Skills Aspirations (KASA)	K Village communities will know that there are successful women leaders. A People will have a more positive attitude to women in leadership. S Women will have the skills to seek responsible positions within village communities. A Communities will aspire to have an increased number of women in positions of responsibility.	There will be greater interest and activity in having women in leadership roles within village communities.	Monitor the number of women candidates in local and national elections. Interview community representatives in a random selection of target village communities before and after releasing the communication products. Survey high school students about their attitude to women in leadership.
4. Reactions	Communities will be interested in hearing about women who have been successful in	People will want to read material /participate in activities.	Monitor the number of responses to articles & request for more information. Monitor

Conducting Effective Workshops

	responsible positions.	Active responses will be received.	letters to the editor. Monitor workshop numbers and participant feedback.
3. People Involvement	All Village communities in PNG. Specifically current leaders and women. High school students – male and female.	Newsletter goes to every village with more than 1000 people. Newspaper articles appear one per week. Materials circulated to all high schools. Workshops run in all provinces.	Check of mailing list. Monitoring of national newspapers. Phone call to all high school principals. Project records about running of workshops.
2. Activities	Quarterly Newsletter for distribution to community councils. Monthly newspaper articles. High-school project material. Regional workshops.	The print media products are of professional standard and appropriate to target audience. Workshop is run using culturally sensitive adult learning principles.	Examples of articles and project material are given to experts within the field at UPNG. Focus groups to be run with representatives of target groups to obtain feedback on how they viewed them. An observer will attend a workshop and critique it based on adult learning principles.
1. Resources	Budget of K20000. 1 full time staff person trained in communication plus one semi-skilled casual. 1 year duration. Vehicle, office, desktop publisher.	Products are appropriate and development is occurring on time and within budget.	Analysis using communication matrix. Monthly reports on progress compared to GANTT chart.

Facilitation – Conducting a Workshop



Conducting a workshop is much more than just a good workshop plan and then turning up and daily going through the motions of delivering the materials to participants.

Facilitation is a better term to use than “conducting” in this case as it implies ‘making it happen’. workshop and learning, which goes beyond delivery what we planned for a workshop.

Facilitation of the workshop: Things that will contribute to the success of the workshop

- selling your workshop to those can support and resource the workshop
- defining and understanding the group – how many, background, experience, etc.
- ensuring that resources and materials are available and in sufficient quantity
- time you have available to conduct the workshop
- suitable venue for the workshop
- having a plan

Facilitation of learning: Things that will contribute to the success of delivery of and learning during the workshop

- problems - plan for what could go wrong during the workshop.
- How well you have visualised the workshop and practise your inputs.
- How well you know your content and how these relate to activities and application of learning
- Suitability of adult learning activities for the group
-

Facilitation check list



- I am prepared – I know what is expected of me and the group I am working with.
- I know the timetable for the day and what has to be achieved each session.
- I am comfortable with the content to the level which I need to be, and fully with the process – I can ‘visualise’ what is to happen, how and when.
 - A. *I know the content of the visual aids (e.g. OHTs, Video etc) and how to operate the equipment for the visual aids.*
 - B. *I have read the readings for the day and know the key points from each reading.*
 - C. *I have thought about techniques that will avoid small group presentations being too long or repetitive.*
- I have given some thought to the way the room is laid out as well as break-out areas, and ways to select small groups.
- I have warm-ups and energisers ‘up my sleeve’ and stay alert to the group’s energy levels and needs.
- I am prepared to be flexible to a point, while exerting my influence to achieve the needs of the group.
- I will negotiate changes to outcomes if necessary.
- I value, protect and do my best to be inclusive of all participants.
- I intend to enjoy facilitating this workshop.

Body Language

Our words alone do not convey the full message that we are projecting. Body language adds a strong dimension to our face to face – and written – communication. It is possible to give unintended noise through body language which takes away from what we are communicating.

Some aspects of body language that may apply are:

- *Open and closed body language.*
- *Personal space.*
- *Differences between different cultures – eg eye contact.*
- *Dress – “experts” and community differences.*
- *Language and tone used in communication – both verbal and written (for example the authoritative ‘expert’ manner, compared with the inclusive sharing manner which acknowledges others knowledge and situation).*

How do these apply in your situation?

Reducing the barriers to communication with adults

There are many factors that result in ‘noise’ / barriers in communication between adults. Many of the communication models incorporate the element of ‘noise’ to explain difference between what the communicator ‘means’ to convey and how the receiver ‘understands’ what they say.

Noise within communication is described as:

“Any factor that inhibits the communication intent of one person/group being fully understood by the person/group who is the other participant of the communication interaction”.

What other barriers have you experienced in either conducting or participating in workshops?

Some tips for good facilitation

Welcome to workshop

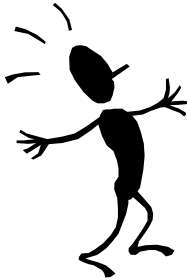


The Welcome on day one sets the tone of the workshop and needs to be done well. Specify the name of the course and give a warm welcome to everyone. Do not wait too long for late arrivals – no more than 10 minutes. Explain how the introductions will be handled – self introduction and workshop name.

The aims are to:

- ☺ *have people feeling valued;*
- ☺ *have people looking forward to what is to come;*
- ☺ *Provide a benchmark for individual evaluation of their experience;*
- ☺ *break down age/status/cultural barriers;*
- ☺ *provide a good working basis between participants; and*
- ☺ *to ensure we all know each other on a first name basis.*

Introductions



After you have welcomed everyone, have delegates introduce themselves in an informal manner that avoids the use of titles and positions.

You might try one of these approaches:

- o *My name is..... and I am from.....*
- o *If I wasn't here this week, I would be doing.....*
- o *If I could be doing whatever I wanted to be doing, I would be*
- o *What led me to be undertaking this course is.....*
- o *The reason I am interested in learning about (facilitation) is that....*
- o *The best course I ever did was... ..because.....*
- o *The main thing I want from this course is.....*

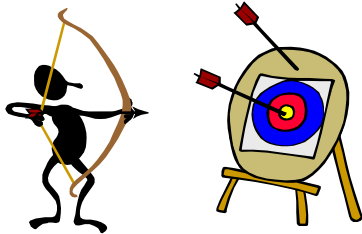
Ground Rules



This is a serious exercise that gives the facilitator the mandate to intervene – and a responsibility to the group. It also puts responsibility on the group.

- *Note these are usually developed by 'brainstorming' – and therefore each one needs to be endorsed / negotiated by the whole group – and exceptions agreed to.*
- *Facilitators can include their own ground-rules – which can include sensitivity to others.*
- *Some peer assessment is based on a delegate's compliance with ground rules*

Expectations



Expectations are part of good adult learning: *people learn best what they are interested in.*

- *Have people consider and write down their own expectations first*
- *Share these with another person or small group*
- *Facilitators then go around each person (being inclusive) and obtain one expectation each – keep going around until no new ones mentioned. Note these are a collection of individual expectations.*
- *Alternatively, have the pairs or small groups write 3 of their expectation on 3 'Post-its' and attach these to a wall where they can be inspected by the whole class throughout the course.*
- *Facilitators need to be up-front about what is possible and what is not.*
- *Be sure to compare actual outcomes for a workshop with the expectations before closing the workshop on Day 5.*

Energisers



The purpose of energisers is to break the momentum, inject some energy, or to break between different subjects – avoid gender and cultural insensitivity. It also gives you a chance to involve the quieter participants in a group exercise.

Some 'energisers' :

- *Invisible balls*
- *Tennis balls/beach balls*
- *Simon says*
- *"There ain't no flies on us"*
- *I went to the market and bought...*
..
- *Clapping types (eg fireworks clap)*
- *Get up and walk about/change chairs*
- *Toe-Knee nose eye I love her/him*

see www.susan-boyd.com.au

Warm-ups



Warm-ups are important particularly on the second, third etc days of a workshop. They help to keep people alert and interested in proceedings.

Some ideas:

- *Dominos good morning (different Tok Ples')*
- *What were people wearing yesterday?*
- *Revisiting names and rhyming words.*
- *Morning exercises.*
- *A local story/fable with questions.*
- *A riddle*

Working with groups

Small group activities are important to the adult-learning principles that underpin many workshops. They allow participants to contribute to the learning process by sharing their views and experiences.

Small groups



Small group activities are important to the adult-learning principles that underpin many workshops. They allow participants to contribute to the learning process by sharing their views and experiences.

Formation of small groups

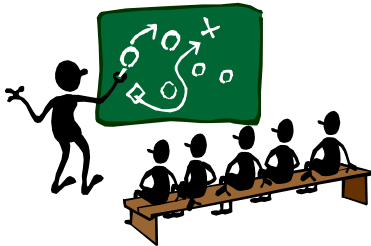
The following methods help to organise groups quickly.

- *Determine* the number of groups you need (e.g. 4) and give each person a number (1 to 4) to split the whole up into small groups – all 1's, 2's, 3's and 4's form separate small groups.
- *Base* groups on the month participants were born, e.g. if 4 groups are need, all persons born in January to March become group 1, April to June group 2 etc. [You may need to even up the groups].

Small group dynamics

- *Different* sized groups have different dynamics
- *Aim to get equal participation.*
- *Establish facilitator, recorder, and presenter at start of an activity and avoid time delays in getting started.*
- *Move around groups, nudge here and there, get a feel for those who dominate and those who are quiet – take into account with future groups.*
- *Use creative ways* for plenary sessions to limit the time taken and boredom. Avoid repetition from small group discussion (have a group pass if it has no new material to offer the class) and do not rely only on words – try role plays for variety.

Whole group dynamics



- *Consider the room layout – semi-circular layout rather than regular classroom.*
- *Be inclusive – directive where necessary.*
- *Move around the room – become part of the group rather than the focus*
- *Involve people in a non-threatening way (John, what do you think about...)*
- *Pin-boarding/use of cards one way for all to contribute (also anonymity factor)*
- *Use “issue boards” to capture “red-herrings” or issue for later consideration.*
- *Change the seating arrangements between facilitators*

Gender inclusiveness

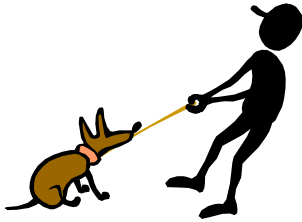


Be alert to this issue throughout a workshop and actively take measures to ensure gender inclusiveness.

Consider:

- *What are the different attributes or backgrounds of delegates that could define this group?*
- *What categories might exist in the group and then ensure that these are mixed across small groups.*
- *What factors could inhibit participation or learning by people in different categories?*
- *What can be done to facilitate full participation and learning across categories?*

Dealing with different 'difficult' personalities



Sometimes a facilitator needs to manage different personalities – people who are 'difficult' because of some views or attributes. In these situations avoid derogatory or negative words and consider what positive and negative contributions these people can make within a group? How can their positives be built on and the negatives minimised (or turned to positives) through smart facilitation?

Techniques might include:

- *Change the seating arrangements*
- *Change the small group make-up*
- *Use inclusive/exclusive prompts*
- *Take the person aside for a friendly chat and request for a change in behaviour*
- *Referring to ground rules*
- *Gently cut off a dominant speaker, summarise the main points and ask for other input*
- *Coaxing a reluctant contributor in a positive manner*
- *Clap at the close of discussion/input as a sign of group acceptance and appreciation*
- *Shift between facilitators at critical times.*

Reflections



The action learning cycle's strongest benefit is that it 'forces' us to include 'reflection'. This is where learning becomes integrated into our thinking. Reflections are used in all SciCom courses to reinforce earlier lessons. They are usually based on small groups.

Approaches to Reflection:

- *ORID* – or “Objective -what happened”, “Reactive - How did you feel about it?” “Interpretive – What does this mean for you/us?”; “Decisional -What will I/we do with this learning?” This is a common approach in SciCom courses but other approaches are available.
- *Plus/Delta* – or ‘what did we like or what would we change or want more of?’
- *Rich Picture* – or capture your learning by means of drawings or pictures and then discuss.
- *Road map* – or draw a road which captures your learning, frustrations, easy parts etc.
- *Stories or mimes* – or develop a play, poem, story or mime which gets across the main points of your learning.

Pulling together – at the end of a day / workshop



- Go over the agenda, butcher's paper and take people through what has been covered in the day or in the workshop.
- Ask” for you, what are the three most significant learnings you have gained from today?” (You could do an ORID or one of the other reflections).
- *Revisit* the expectations. Ask people to revisit their expectations and consider how well they were met – they could ‘tick’ them, or put a rating on them (happy face, sad face etc).
- Have people share with other participants (1 or more) about one thing they will do with what they have learnt.



Rich pictures

A Rich Picture is a way for an individual or a group to represent a problem or a situation as a basis for discussion and further exploration of the issues. It is an early step in a method for investigating complex systems called Soft Systems Methodology.

It works well if we are willing to be creative and think laterally – to look at the broad context of the situation - to give the ‘big picture’. Try to enjoy expressing your understanding and feelings through the communication medium of rough drawings by felt pen on a large expanse of butcher’s paper. (If it is a group picture put three or four sheets together.)

A rich picture could be used to depict:

- The structure (organisational hierarchies or the physical layout)
- Processes (the tasks and activities carried out within the structure).
- Interaction of structures and processes.
- Context of the situation (factors such as culture and social issues).
- Major issues (cause for discontent; barriers to progress; different views).

If working with a small group of people, individual rich pictures can be drawn and then described and compared. With a large group, divide into two or three workable groups and develop group pictures. In this case, it is probably best to give participants a minute or two to visualise the situation themselves, then start to pool ideas onto the large sheet.

After these pictures have been developed, each group describes their picture to the other groups. By looking for similarities and contrasts, key themes emerge as well as additional issues that need to be considered.

The following picture is about issues facing remote sensing technology transfer in Australia. It is not as ‘freewheeling’ as you would do with felt pens and butchers paper, but it illustrates that this process is taken seriously as a management analysis technique.

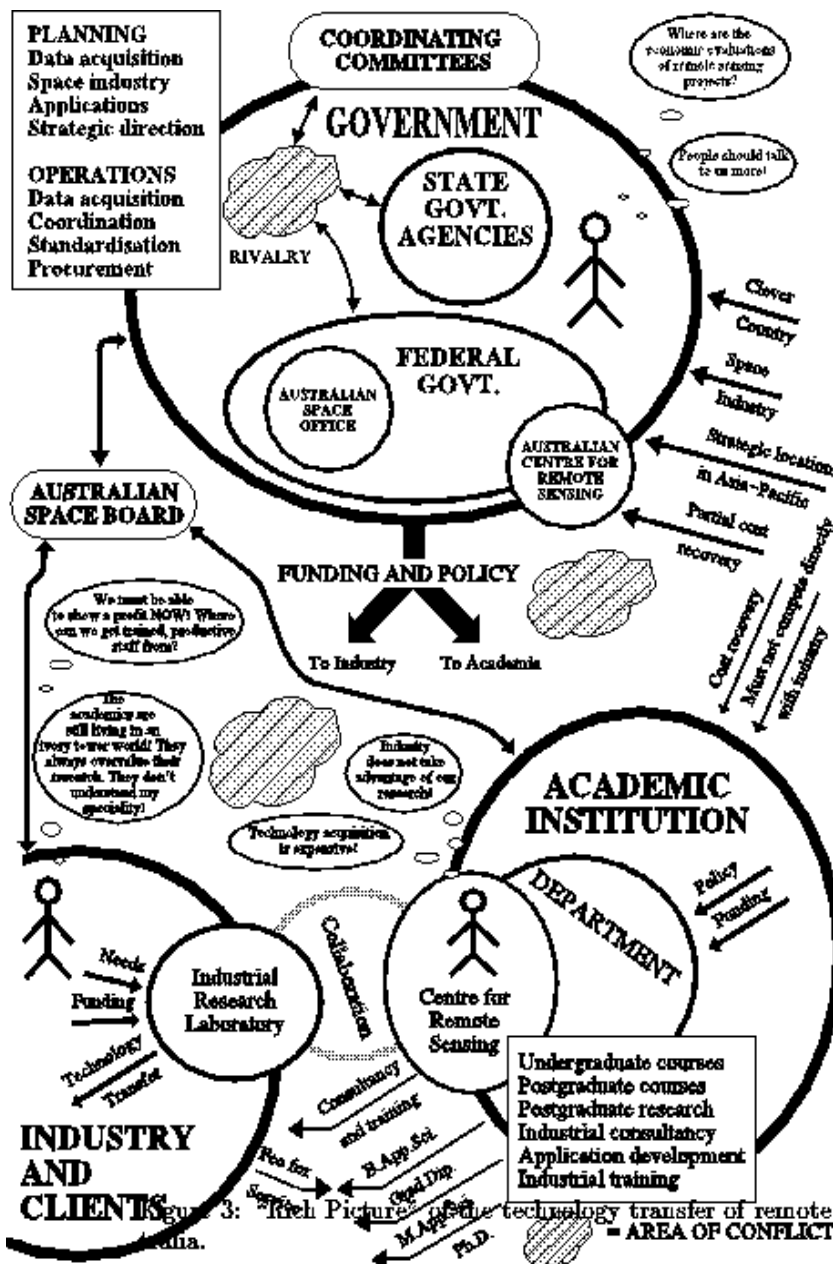


Figure 3: A Fresh Picture of the technology transfer of remote sensing in Australia. - AREA OF CONFLICT

Extracted from (<http://www.csu.edu.au/ci/vol01/finega01/html/>)

References:

Guy E.S., School of Computing, Mathematical and Information Sciences, University of Brighton
http://www.it.bton.ac.uk/staff/esg1/resource_centre/SSM_handbook/SSM_case.html

Department of Primary Industries 1997, *Working towards group self reliance*, Rural Extension Centre, University of Queensland, Gatton.

Bennett, C. (1976) *Up The Hierarchy* Journal of Extension, March/April, USA 7-12

up the hierarchy

Claude Bennett

How productive are Extension programs? Government officials, legislators, university administrators, and Extension leaders, including you, want to know. Evidence of Extension's effectiveness can help decision makers improve service to clients.

Chain of Events

Let me suggest seven categories of criteria for evaluating Extension programs and offer guidance in choosing evidence in these categories. These categories are based on a seven-link "chain of events."¹

First in the chain is *inputs*, the resources expended by Extension. These inputs produce *activities* that involve people who have *reactions*, pro and con. People involved may change their *knowledge, attitudes, skills, and aspirations (KASA)*. *Practice change* occurs when people apply their KASA change to working and living. What follows from these practice changes are *end results*. Such results should include accomplishing ultimate aims of the Extension program. Is there more profit because of adoption of new herbicides, or better health because people are beginning to eat a recommended diet?

These seven events are shown as a hierarchy in Figure 1. This "staircase" reaches toward solving, at the seventh level, one or more clientele problems.

The following are examples of criteria at each level of the hierarchy.

At the *inputs* level, criteria are plans (objectives) to allocate certain resources to a program, such as:

- time of paid staff and volunteers ("five staff-years will be allocated to the program").
- staff qualifications—paid and volunteer ("all program assistants must be neighborhood opinion leaders").

At the *activities* level, criteria are plans to perform, through the above inputs, certain educational activities, such as:

Claude Bennett: Specialist, Educational Methodology and Evaluation, Staff Development, Extension Service-USDA.

Conducting Effective Workshops

- publicizing programs (“five newspaper releases will be prepared”).
- transmitting subject matter through mass media, meetings, and other events (“five TV stations will show a video tape on this subject”).

At the *people involvement* level, criteria are plans for certain types and number of persons, groups, or communities to be involved:

- number of participants in programs, tours, meetings, or clubs (“200 4-H participants from low-income families will be enrolled in this project”).
- continuity, frequency, and intensity of interaction between clientele and Extension (“attendance at homemaker meetings will average 80% of membership”).

At the *reactions* level, criteria are plans to obtain certain reactions to involvement in activities, such as:²

- interest in educational events (“75% positive reactions to this topic”).
- acceptance of leaders (“leader of meeting rated competent by 2/3 of audience”).

Extension program evaluation isn't an end in itself. It's worth doing only if it helps in making decisions about program continuation, priorities, modifications, and so on.

At the *KASA change* level, criteria are plans that certain *knowledge, attitudes, skills, and aspirations* (KASA) will ensue from participation in activities:³

- direction (content) and extent of KASA change (“80% of homemakers will be able to select the most suitable furniture arrangement for homes”).
- durability of any KASA change (“95% of participating farmers, will still recall sources of pesticide safety rules 1 year after workshop”).
- intensity of attitudes to be acquired (“all youth in the citizenship seminar should disapprove nonvoting by the close of the seminar”).
- height of aspiration (“each couple in the workshop should decide to prepare a legal will within one month”).

At the *practice change* level, criteria are plans for changes in practices, technology, or social structure, as a consequence of KASA change, in terms of:

- individual innovation and adoption (“90% of farmers to adopt new, superior variety of wheat within 2 years”).

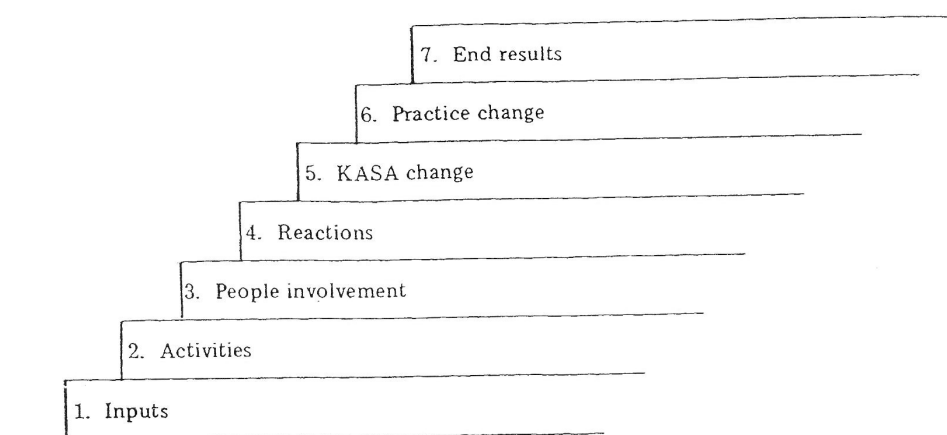


Figure 1. A hierarchy of evidence for program evaluation.

- collective change (“100% of communities to establish land-use planning boards within 4 years”).

At the *end results* level, criteria are plans that certain ultimate effects will come through change in practice:

- individuals (“one-third of ‘isolate’ youth attending camp to gain increased peer and self-acceptance”).
- groups (“the community will increase to 5% its annual rate of real economic growth”).

Unexpected “side” effects shouldn’t be ignored at any level of the hierarchy, but apply especially to end results. Side effects may be beneficial (serendipity) or harmful (“backlash”). For instance, new industry brought to a community with Extension’s help may alter established social relationships in unexpected ways.

Reaching Objectives

The more nearly program objectives or plans are reached the more people value the program.⁴ A highly valued program is more likely to get continued or additional funding, as its objectives are likely to be retained, intensified, or broadened.

Selecting Level and Quality of Evidence

An Extension program usually has several objectives. These may be at several or all levels of the hierarchy shown in Figure 1. At which of the seven levels should you try to get evidence of program accomplishments? Three guidelines may help here.

Guideline 1: Evidence of program impact becomes stronger as the hierarchy is ascended. The two lowest levels provide little or no measure of clientele benefits. Level 3 provides one way of measuring opportunity for education to occur.

Ascending to the fourth level, reactions, provides somewhat better confirmation of whether activities are helpful. It's usually desirable to have at least evidence of the extent to which objectives for KASA change are reached. But KASA changes are only stepping stones to adoption of recommended practices.

Ideally, impact of more Extension programs would be evaluated in terms of whether desired end results are achieved.

But, here's the rub. *Guideline 2: The difficulty and cost of obtaining evidence of accomplishments increases as the hierarchy is ascended.* Resources required to measure actual outcomes generally increase as the hierarchy is climbed due to (a) increased scattering of sources of evidence, (b) greater time-lag following program activities, and (c) increased

Table 1. Examples of "hard" and "soft" evidence in a hierarchy for program evaluation.

Levels	Examples	
	"Hard" evidence	"Soft" evidence
7. End results	profit-loss statements; life expectancies and pollution indexes	casual perceptions of quality of health, economy, and environment
6. Practice change	direct observation of use of recommended farm practices over a series of years	retrospective reports by farmers of their use of recommended farm practices
5. KASA change	changes in scores on validated measures of knowledge, attitudes, skills, and aspirations	opinions on extent of change in participants' knowledge, attitudes, skills, and aspirations
4. Reactions	extent to which random sample of viewers can be distracted from watching a demonstration	recording the views of only those who volunteer to express feelings about demonstration
3. People involvement	use of social participation scales based on recorded observations of attendance, holding of leadership positions, etc.	casual observation of attendance and leadership by participants
2. Activities	pre-structured observation of activities and social processes through participant observation, use of video and audio tapes, etc.	staff recall of how activities were conducted and the extent to which they were completed
1. Inputs	special observation of staff time expenditures, as in time-and-motion study	staff's subjective reports about time allocation

probability of impact by sources of change other than the program.

Guideline 3: While hard evidence is usually ideal, it's more expensive and difficult to obtain.

Evidence is often referred to as "hard" versus "soft." Evidence is "hard" to the extent that it reflects precisely true characteristics of individuals, groups, or situations.⁵

Table 1 shows examples of hard and soft evidence at each level of the hierarchy. Hard and soft constitute a continuum, but the two categories are used for definition.

Guiding Decision Making

Extension program evaluation isn't an end in itself. It's worth doing only if it helps in making decisions about program continuation, priorities, modifications, and so on.⁶

When you select evidence for evaluating Extension programs ask these questions:

1. Which levels of the hierarchy (Figure 1) contain the kinds of evidence we need to make decisions?
2. How "hard" does the evidence need to be?
3. Are resources available to obtain the level and hardness of evidence needed?
4. If resources are insufficient to provide the level and hardness of evidence desired by decision makers:
 - a. Will decision makers be able to use a lower level of evidence, or softer evidence?
If not:
 - b. Can you get more resources?

Without clear criteria, evidence of program accomplishments won't indicate the success of your Extension program. But, you can't judge program success or make sound decisions without enough evidence of program accomplishments.

Footnotes

1. Several elements of the chain have been identified by Kirkpatrick and Suchman. See Donald L. Kirkpatrick, "Evaluation of Training," in *Training and Development Handbook*, Robert L. Craig and Lester R. Bittel, eds. (New York: Mc-Graw-Hill, 1967), pp. 87-112 and Edward A. Suchman, *Evaluation Research* (New York: Russell Sage Foundation, 1967).
2. It doesn't matter initially why participants are interested. They may be attracted to discussions on grain production, etc., because they like to talk, not because of any particular interest in the subject; audiences may begin to watch an Extension television program just because there are pretty girls on it.
3. At levels 5, 6, and 7, *whose* objectives—Extension's or clientele—may become an issue. Degree of consensus on objectives at these levels will depend on adequacy of Extension program planning.
4. Comparing the extent to which objectives and achievements coincide isn't the only way to evaluate program impact. Other approaches

Stanfield, U (1997) Training — If You Grab Them By Their Learning Principles,
The Rest Will Follow. — Managing Change, Building Knowledge and Skills,
Conference Proceedings 2nd Australasia Pacific Extension Conference, Volume 1
2nd Australasia Pacific Extension Conference

ISBN 0446.34571

2nd Australasia Pacific Extension Conference

***Managing change
- building knowledge and skills***

18 TO 21 NOVEMBER 1997

***ALBURY CONVENTION CENTRE
ALBURY, NEW SOUTH WALES***

Conference proceedings

Volume I

Keynote

Address & Concurrent Session Presenters

Wednesday 19th November 1997

REC0007347 C1/V1

So, the “Ten Learning Principles” that I work to are:

1. *I help them learn what they want to learn.*
2. *I recognise and value their experiences.*
3. *I create a safe learning environment.*
4. *I involve them in their learning.*
5. *I recognise they are adults.*
6. *I encourage them to act.*
7. *I encourage them to reflect.*
8. *I encourage them to draw conclusions.*
9. *I encourage them to plan.*
10. *I help them see if their learning has been successful.*

Following these “Ten Learning Principles” won’t ensure success, but ignoring them will guarantee failure. What follows is a crystallisation of an intensive five years of helping people to learn, in both the private and public sectors.

For each Learning Principle, I will describe the spirit of the principle and give some examples of techniques I use to fulfill it. I have used these techniques to plan learning events ranging from a twelve minute training video, two hour refresher course, one and two-day intensive workshops, seven-day residential courses, through to an Extension Learning Forum over four days for 190 learners.

You can modify them to fit any situation!

1. I help them Learn what they want to learn.

I’m learner centered. Humans tend to learn best when we need to know something. We will retain what is useful to us and vaguely remember or forget the rest. So my learning events will be most useful if they contain stuff people want to learn!

If they don’t know what they want to learn, I help them clarify it. The more clearly they know what they want to learn, the easier it is to help them learn, but even a fuzzy start is a good start.

If they have been “sent” to a learning event, I try to untangle what they want from what the “sender” wants. They may have very good reasons for NOT learning it! They need to own what they need to learn. This will motivate them more than most external rewards.

Do they know what they don’t know? Help people explore what they don’t know, but don’t impose your view on them. They may resent it and refuse to own the need to learn, Help them decide what they want to learn and provide that.

If you are working with a group, each learner will also Learn from things others want to learn, but don’t try to “teach” stuff no one is interested in.

Some techniques:

- *Research your audience’s needs before the learning event.*

Conducting Effective Workshops

- *Base the event on their needs and, when promoting the event, be clear what the purpose is.*
- *Make it OK to talk about “What I don’t know yet”- model it.*
- *Spend time clarifying what they want to learn using “Expectations” (2).*
- *Be honest about what you can and can’t offer.*
- *Build a range of options into your plan, encourage choice.*
- *Get them to “Anchor their learnings in reality” (3).*
- *Don’t try to “reward” people into learning.*
- *Use their real-life situations to practice on whenever possible.*



2 I recognize and value their experiences.

Each learner comes with a huge repertoire of experience to draw on. They have positive and negative experiences with the content of your learning event - and also of other learning events. They will act and react from this foundation.

To ignore this foundation is dangerous. It is their starting point for this particular learning journey. It is also the baggage they carry with them. Recognize and value this experience. Consciously or unconsciously, it means a lot to them.

Get to know each learner's starting point and encourage them to be aware of it too. They will need to know it if they are going to be able to measure what they learned. Encourage the learners to share what they know as you share what you know. Avoid the “let’s see how much you get right” approach. If each shares what you know, you will all have a chance to learn.

Some techniques:

- *Be explicit about, and model, your respect for their experience.*

- Use a “Warm-up” (4) exercise that brings out and values their experience.
- Model by sharing your experiences, both triumphant and less so.
- Use “Expectations” and “Warm-ups” to help people surface, and let go of, “baggage”.

3. I create a safe learning environment.

Some teaming environments are not safe. Learners may be embarrassed, be made to feel a fool, be unable to keep up, be looked down on, or even be made to fail. They may feel at great risk emotionally, mentally and even physically. My job is to reduce that anxiety to a minimum and to create a safe environment which is conducive to learning.

While the learning environment must be safe, that doesn't mean it's always going to be comfortable! Learning often happens just outside our comfort zone. A turtle gets nowhere if it doesn't stick its neck out from time to time!

As “Head Learner” my role is to facilitate learning. I do this by keeping the group focused, getting agreement on the content and process, protecting learners, and making sure they get a chance to participate.

I need to be explicit about how this learning event may be different from others they have experienced. I have to be purposeful in setting up the learning environment. I need to model and provide opportunities for safe participation, without creating performance anxiety. I need to design situations and processes that maximize the opportunities to share and learn.

Some techniques:

- Make the learners the centre of the learning activity.
- Be ready in time to welcome learners personally.
- Set up an environment conducive to emotional, mental and physical safety
- Use “Introductions” (5) in a way that creates a safer environment.
- Use a “Warm-up” in a way that creates a safer environment.
- “Roadmap” (6) the program so that they know what's coming.
- Raise “Groundrules” (7) to a conscious level and agree to them.
- Encourage all participants to be involved and design low risk processes, deliberately building in “mistakes are OK”.
- Use an “issues container” (S) to deal with threatening situations.
- Build in variety, flexibility and “free” times which allow people to “keep up” at their own pace and gives opportunity to alter your process if needed.
- Don't coerce people to learn by threatening failure.
- Focus on learning something new, rather than on success or failure.
- Don't test in a way that could lead to public failure.



4. I involve them in their learning.

I ensure my co-learners have a significant input into the learning event. Their experience and questioning will enrich the learnings. I don't have all the answers, their situation is unique and will need a unique combination of solutions. I share my expertise and knowledge, such as it is, and I ensure they can too.

I propose an event design at the beginning and then modify it as we learn together. If they are learning what they need to and are adding to the material I have brought, there is no shame in not "covering everything I planned to". I consciously build in opportunities for them to have meaningful and significant input.

Some techniques:

- *Ask for their "Expectations" at the beginning and work to them.*
- *Find out where each one is starting from.*
- *Keep checking with them, "How are we going?".*
- *Design processes to promote a crossflow of communication.*
- *Build in small group and "social" activities.*
- *Be flexible with timing, processes and expected outcomes.*
- *Check back at the end, "How did we go?".*

5. I recognise they are adults.

Most of us hate being treated like children when we are learning. Adults are different from children, they are older and have more experience, independence and opinions I

Conducting Effective Workshops

I recognize that they have different levels of interest, different starting points and different "Paradigms" (9). I encourage them to talk about these and to respect their own, those of others in the group (and mine!). If I don't try to impose my views on them, we rarely have any problems. Mine is just another of a smorgasbord of opinions out there. I believe my opinions are valid and want to express them well, but I'm also looking to broaden and improve on them. They will probably help me do that.

In Western societies many of us have a problem with authority. I try to be a co-learner rather than a teacher. I value their and my independence and work hard not to compromise that, but to build an interdependent relationship. I'm clear on each of our roles during the learning event.

We adults tend to have plenty on our minds. I try to fit the learning event into their context and then help them to put the distractive elements of life to one side temporarily.

Some techniques:

- *Act like an adult and treat them like adults.*
- *Clarify the roles you will each play during the event.*
- *Be explicit about your intention to respect and value them.*
- *Be purposeful and explicit in your choice of processes.*
- *Create a "Warm-up" that recognizes their context.*
- *Use "Expectations" to focus, leaving distractive elements of life to one side temporarily.*
- *Encourage them to surface levels of interest, starting points and 'Paradigms'.*



6. I encourage them to act.

Koib's Action Learning Cycle proposes that effective learning occurs when learners consciously complete a cycle that includes the stages of acting, reflecting, concluding and planning. The cycle can start at any of these stages, but needs to go through each of the stages at least once for learning to occur.

encourage learners to ACT on the learnings to be able to go through the cycle. In this way they can prove to themselves the value (or otherwise) of the concept being learned. The action may be mental, emotional, or physical, but implies an attempt of something new in an old context, or of something known in a new context.

This is where the rubber hits the road, acting out in real life or in a Trial run for putting learning into practice.

Some techniques:

- *Be explicit about the action learning cycle.*
- *Be aware some learners do not find it easy to act; persevere and encourage them to persevere.*
- *Prepare people for this by "Anchoring in reality".*
- *Design processes where learners can "fly out" something new in a safe environment.*
- *Encourage practice after the learning event.*
- *Set up "Action Learning Sets" (ID) within your learning event and to follow on.*

7. I encourage them to reflect.

Support learners to REFLECT on what they already know from experience (previous Acting) and to continue reflecting on what they might learn from that. As they experience something different, encourage them to put time into being conscious of how it feels, what they think, what they did.

Some techniques:

- *Be explicit about the action learning cycle.*
- *Be aware some learners do not find it easy to reflect; persevere and encourage them to persevere.*
- *Design processes that enable learners to reflect on what they have felt, thought, or done.*
- *Encourage and plan for "Walk Talk Partners" (II)*
- *Encourage and plan for "Jollrnaliflg"02)*
- *Set up "Action Learning Sets" within your learning event and to follow on.*



8. I encourage them to draw conclusions.

As learners reflect in what they did, they will begin to DRAW CONCLUSIONS from their reflections, a generalization or rule of thumb that is true for them. This is a theoretical framework which they can use to move on to planning their next move.

Help learners to draw out these generalizations and rules of thumb and be explicit about these. Get them to share their conclusions so they can learn from each other.

Another way is to start the cycle here, organize for theory input and encourage learners to plan using it in an artificial or real-life situation. Then support them in actioning it, reflecting, and concluding for themselves.

Some techniques:

- *Be explicit about the action learning cycle.*
- *Be aware some learners do not find it easy to draw conclusions; persevere and encourage them to persevere.*
- *Design processes that enable learners to draw generalizations and rules of thumb from their reflections*
- *Encourage "Journaling"*
- *Set up "Action Learning Sets" within your learning event and to follow on.*

9. I encourage them to plan.

This stage turns the conclusions or generalizations into a PLAN to do something, to put the theory into practice. Support the learner in making their (or someone else's) conclusions into reality.

During and at the end of a learning event encourage the learner to make concrete plans to start to apply their learnings in "the real world". Make sure you leave enough time for this!

Some techniques:

- *Be explicit about the action learning cycle.*
- *Be aware some learners don't find it easy to plan; persevere and encourage them to.*

- *Design processes that enable learners to plan to apply their learning.*
- *Encourage “Journaling”*
- *Design a process where the learner can get feedback and continue the learning cycle.*
- *Link learnings back to “Anchor in reality” they prepared at the start of the learning event*
- *Encourage learners to monitor their learning and continue sharing formally or informally.*
- *Setup “Action Learning Sets” within your learning event and to follow on.*

10. I help them see if their learning has been successful.

Help learners identify what has changed as a result of the learning event. Celebrate even small learnings. They may be new awareness, understanding, attitudes, skills, aspirations or even behaviours. They may include things no-one intended to learn. They may not have appeared on the plan or in the expectations, but if they were learned, they need to be acknowledged. Nothing succeeds like success.

Link their learnings back to what they expected to learn and what their starting point was when they arrived. You can also highlight the next possible steps on the learning journey.

Some techniques:

- *During the learning event review what people are finding new or useful.*
- *Encourage an “It’s good to learn” environment. Support learning as a reward in itself.*
- *Design processes to help learners reflect on what they are learning.*
- *Evaluate the learning event. If you can, learn together about this too.*



Glossary

(1) *“Transformational Learning”*

Long-lasting, appropriate learning that allows a person to dramatically improve the way they function. It comes about when change is supported at six levels: Awareness, Understanding, Attitudes, Skills, Aspirations and Behaviour. Learners who have had the opportunity to consciously make adjustments in awareness, attitude and aspirations as they take on new understanding and skills are more likely to transform their behaviour as a result

(2) *“Expectations”*

A recorded process where learners are encouraged to think about and then share what they hope to get out of an event “What will make this event a success for you?”

(3) *“Anchoring in reality”*

Getting learners to identify real life situations to which they intend to apply their learnings.

(4) *“Warm-up”*

Question/s or activity used with learners when they need to be “warmed up” to the purpose of the event. Can be used to highlight what they have left behind, why they are there, how they relate to other learners. Anything to link them from the past and present to the (future) learning event.

(5) *“Introductions”*

Opportunity for learners to briefly introduce themselves in a semi-formal way. The information you ask for should be tailored to meet the situation. eg “Your name, type of property you work on and who else you know here.”

(6) *“Roadmap”*

To draw up for the learners, on butcher’s paper or some other visual means, the proposed program and/or series of processes planned for the event The purpose is to help them see where you are leading them, see how they are going, and then see where they have been.

(7) *“Groundrules”*

Expected standards of behaviour made explicit and agreed to by all learners. These are usually associated with creating and maintaining a safe group environment.

(8) *“Issues container”*

A sheet of butcher’s paper or similar space assigned to record important, but tangential, issues to be returned to at a later time.

(9) *“Paradigm”*

A filter you look at the world through.

(10) *“Action Learning Sets”*

Groups of learners who work together over time to help each other move through the Action

Learning Cycle on a project or projects. -

(II) "Walk Talk Partners"

Two learners who walk and talk together with the aim of helping each other reflect and draw conclusions. Walking helps to keep reflections broad and shallow so as not to only hone in on one and lose the others.

(12) "Journaling"

Personal semi-formal writing down of reflections, conclusions and plans during and after a learning event.

References

Bennett, C (1975), "Up The Hierarchy", Journal of Extension, March- April 1975, pp7 -12.

Ching, D. (1993) Training in Facilitation: a workshop guide. University of Hawaii: Hawaii

Koib, D A. (1984) Experiential Learning-Experience as a source of learning and development Prentice -Hall, New Jersey

Malouf, D (1994) How to teach adults in a fun and exciting way. Chatswood, NSW, Business and Professionalism.

Cartoons by Paul Lennon (in Recruitment and Selection Standard, DPIQ, 1993) courtesy of Publications Production, DPIQ.

Liu, M. (2001) '*Refining Objectives of extension Programs*'. From *The Field — Development of Workshops and extension Packages*, Gattton, Rural Extension Centre, pp. 33 – 42

Refining objectives of extension programs

Mathias Liu

Introduction

To set extension objectives means to describe the intended results of an extension program, as it is a very important statement of what is to be achieved. Therefore an extension program objective is written in a special way. Indeed it should be a statement, which combines a goal with who is going to achieve the goal, how they are going to achieve it, to what standard and when. As described by Derek Foster in *Developing Extension Process*, (2000); "When establishing objectives for an extension program it is useful to take in the three steps which involve getting a broad overview of the program by asking four simple questions, what? who?. when? and where?".

The gut feeling I had which prompted this project was that extension officers who had the responsibility of writing extension programs in their specialty fields often found it difficult to write sound and realistic objectives which could act as the goal for extension work. This is serious because extension programs become directed towards activities. A major component of these programs are the setting of objectives, which should be based on the overall broad national, departmental, divisional and sectional objectives. The scope of this project is therefore to design a training workshop on objective writing for extension officers both from the government extension agents such as DPI and the non-government organizations that are involved in delivering extension services in the East New Britain Province of Papua Hew Guinea, It is envisaged that the workshop will be conducted at the University of Vudal towards the end of year 2001.

Literature review

Animal objectives

As defined by Hodgetts and Kuratko (1991), objectives, often called goals. are the ends toward which an activity is aimed. In planning, objectives flow from the purpose or mission statement but are much more specific. Therefore, objectives can be set as long term objectives or annual objectives, which are very broad.

In their book titled "Management" 5~' edition, Stoner & Freeman (1992), stated that annual objectives lie at the very heart of strategy implementation— especially when detailed functional strategies are being implemented. They identify' precisely what must be accomplished each year in order to achieve the organization's strategic goals. Thus, annual objectives clarify the manager's tasks and give them a better understanding of their role in the organization's overall strategy. Insofar as annual objectives challenge managers and give them a sense of purpose, they also

increase motivation. At the same time they furnish a quantitative basis for monitoring performance and make it easier to spot performance problems. Well designed annual objectives are linked to the organization's long-term goals and are measurable. It is important that they quantify performance in absolute terms.

As argued by Hodgetts and Kuratko (1991), an important design issue is the way in which annual objectives of different units interact with one another. Managers must coordinate the annual objectives of the organization, resolving their contradictions, setting priorities, and designing objectives to reinforce one another.

An annual objective taken from the East New Britain Provincial Administration — Division of Primary

Industry Year 2000 Works Program reads, 'To coordinate all Provincial Extension Support Services

(Project) as a tool for delivering Agricultural/Livestock/Fisheries development to our rural farmers/fishermen in East New Britain " . -

The need for objectives

According to Hodgetts and Kuratko (1991) the first formal step of planning in any organization is to establish objectives. They help the organization compare itself with the competition. They help the organization to accomplish returns on investment. Operational objectives are efficiency-oriented. They help the organization control internal resources. Typically they would involve plans for cost control, output and employee turn-over. Nevertheless, Giles and Stansfield (1990), stressed that objectives help to give the organization a purpose and furthermore they provide individuals in the organization with a common goal and minimize the risks of going off on too many tangents,

As well as being a very important aspect of management, Giles and Stansfield (1990), emphasized the fact that setting objectives was notoriously difficult. It is difficult because it is elusive and complicated; it is always moving away from you, always involving conflicting strands of thought and frequently defying attempts to be precise.

Hierarchy of objectives

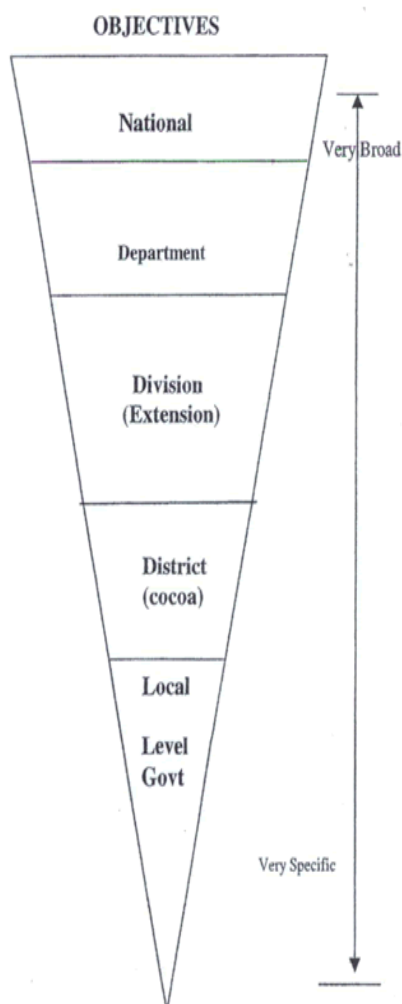
A hierarchy of objectives can be seen as a cone, as stated by Hodgetts and Kuratko (1991). They are established at all levels of organizations beginning at the top and cascading downwards. The country's (PNG) five-year development plan, for example, has objectives in it for the whole nation. They are very general, they apply to the whole country, and usually they do not vary much about how they will be achieved. JRETA and FAO Publications (1989) indicated that these objectives usually appear at the top of the cone,

Beneath national objectives are objectives of the government departments (e.g. Agriculture). These are not as broad as they refer to specific stakeholders, in the case of agriculture these objectives may refer to rural families instead of the whole population and to agriculture instead of the whole economy. They should be more precise about how something is going to be achieved.

As depicted in the diagram on page 3, the Extension Division has the farmer education responsibility of this objective and this is written as a division objective. At the bottom of the cone there are the objectives of the region, group, Island, Unit, and or districts. In essence these objectives should have very specific, or concrete statements about **who?, what?, by how much? And by when?**. They should be

consistent with all of the objectives in the cone right up to the national ones (IRETA AND FAO Publications 1989).

A hierarchy of objectives



Adapted from IRETA and FAO Publications 1998

Examples

For all people of the nation, to provide increased opportunity to produce or to buy through increased incomes their basic needs for adequate food, shelter and clothing.

For, to help increase standards of living through increased subsistence production by 20% and the export of agricultural products by 20% over the 5-year plan production.

Amongst rural families, to encourage by educational methods increased plantings of subsistence gardens and adaptation of improved management methods so that subsistence production increased by 20% and export by 20%.

That at least 40% of cocoa farmers in the region increase cocoa yields from 400 to 600kg/ba through adaptation of improved husbandry practices by end of the 5-year plan. That 40% of cocoa farmers in villages A, B and C with access to roads increase cocoa yields to 800kg/ba through adapting recommendations on fertilizer use and black pod control in the next five years.

SMART goals

Goal formulation involves reviewing and understanding the organization's mission and then establishing goals that translate the mission into concrete terms. (James A. Stoner and R. Freeman 1992).

Fell (1979), stated that SMART goals are:

❖ **Specific.**

This means they are detailed, focused or particular. A goal or objective is specific when everyone knows exactly what is to be achieved. They are more specific because they narrow the desired outcome and provide specific information about what is to be accomplished. Further, it means spelling out the details of the goal.

❖ **Action oriented**

Action-oriented implies that the goals indicate an activity, a performance, an operation or something that produces results. Action-oriented goal statement should also tell what it is that will help us reach the goal, what is to be done. Action verbs used in the objective describe the type of activities to be performed.

❖ **Realistic**

Realistic implies that goals are practical, achievable and possible. Realistic goals must motivate and drive people to strive to reach attainable goals. Such goals must drive people to feel that they can achieve what they set out to achieve. Unless there is a need for the goal, the goal is not realistic and practical. Similarly, setting unrealistically high goals, which are impossible to achieve, is a waste of time. But equally they are de-motivating and therefore defeat the whole goal setting process.

❖ **Time Bound**

Time bound means scheduled, regulated by time, there is a finite time, a deadline or a milestone to the achievement of the goal. Time bound is often spelt out within the constraints of the resources available. Time constraints encourage action to get activities completed. Deadlines encourage activity as people generally put off doing things if no deadline exists because we always have something else to do that is a more immediate priority. Goals are easily achieved when time, resources and alternative solutions are freely available.

Foster 1998, pointed out that in setting objectives there are three steps involved:

Step one is the coarse level which constitutes:

❖ ***What?:*** which broadly indicates what one is trying to achieve, specifying the desired behaviour change or the steps needed to be taken towards the change, It also describes the desired outcome but not how one intends to achieve the outcome. Furthermore, it states what mental changes will occur or what people will be doing differently to demonstrate achievement of the target.

❖ ***Who?:*** refers to the audience, i.e. the number of people, in what industries, using what type of practices, on what type of farms, establishments and organisations.

❖ ***When?:*** stipulates the time limits and indicates the location, of where one is trying to achieve the objective, and refers to a time limit for the outcomes.

- ❖ **Where?:** refers to the definition of the audience and their location.

The second step refers to Bennett's Hierarchy to refine objectives. This hierarchy can be used for both big extension programs and workshops. It offers a framework for objective setting as it provides a hierarchy of evidence from broad change focused at the end results' down to very pragmatic operational input needs for successful implementation at the 'inputs mid resource' end of the scale. The hierarchy can be viewed from two perspectives — input objectives and output objectives.

This step is really a check as establishing high quality objectives is important, especially in extension projects or individual extension events that are evaluated by measuring the extent to which predefined objectives have been achieved. The objectives need to be in a form amenable to evaluation.

Situational analysis

Using the semi-structured and snow ball interview techniques I set out to interview four extension officers from the Division of Primary Industry in East New Britain Province, two extension officers from the Regional Office, Department of Agriculture and Livestock and two officers from the Pacific Heritage Foundation. The purpose of the interview was to gauge an understanding of the way these officers frame objectives of their extension programs and where their objectives have stemmed from. Another reason was to establish whether there was a real need to tailor a workshop on objective- writing for extension officers.

The following are examples of objectives taken from the Year 2000 Annual Works Program for the Division of Primary Industry in East New Britain Province.

01. Marketing Section

Objectives: Training of divisional officers including district officers

To ensure that a Provincial Marketing Data Base is established to improve future planning and reporting to the government and the private sector,

02. Tree Crops Section (Coffee)

Objectives: To introduce arabica coffee expansion to higher altitudes and less developed areas (Pomio & Baining) of the Province

To improve coffee extension, post-harvest and marketing in the Province.

Quotes from two DPI extension officers about the objectives they have set for their sections:

Extension Officer No 1

It seems that my objectives are very general and I find it very difficult to implement them, as the resources allocated to me are scarce. I can't evaluate my objectives. -

Extension Officer No 2

Setting the objectives for my extension program is one thing while implementing it is another thing. A lot of the objectives I have set over the years as an extension officer have been taken from old extension programs and may not be realistic.

Judging from the interviews with the various people charged with the responsibility of compiling extension programs to service the rural sector, there is obviously a

need for these officers to understand where their objectives should derive from and how they should be framed so that these objectives can be properly evaluated. Some of the officers also expressed their concern with regards to writing extension programs. As expressed by one officer, "objectives are a major part of any program; therefore it would be good to conduct something in extension program and planning". While I would be more inclined to do something to cater for this suggestion, it would be slightly remote to the scope of this project. Nevertheless, appreciate the fact that good extension workers have an empathy with the people and a desire to help their country. They are some of the greatest assets. By training and servicing them well, we will help boost production and increase export earnings. Obviously, just by a glance at these objectives one can draw a conclusion that there is a need for extension officers to be trained in the area of objective writing in extension programs.

The good extension worker identifies farmers' needs and helps them to achieve their objectives. However, there are also national objectives to be considered. Most countries have some form of long term planning for agricultural development. Often national objectives are unrealistic. Frequently planners who are out of touch with farmers set them for political or economic reasons.

The facilitators of this workshop will be mainly drawn from the Extension and Management Section of the Department of Agriculture at the University of Vudal. I will take overall responsibility of the workshop while Peter Navus and Malakai Tabar will assist in facilitating.

The facilities and other resources within the university will be utilized in this workshop. It is envisaged that the workshop will be conducted over two days.

Objectives of the workshop

Output objective

- 1. The anticipated end result will be that 80% of extension officers in the Division of Primary Industry within the Department of East New Britain will be able to write SMART objectives of their extension programs within the next year (2002).*
- 2. When the extension officers write their year 2002 extension programs 80% of them would have written SMART objectives for these programs*

KASA

The two levels of evidence according to Bennett's Hierarchy to foster a broad shift in knowledge and attitude, are described below:

- K: All extension officers know how to write SMART objectives and the rationale for writing such objectives for their extension programs.*
- A: Most extension officers continue to write SMART objectives for their extension programs.*

The anticipated response to this workshop will be that 80% of the extension officers develop a positive attitude towards writing SMART objectives for their extension programs.

Principles

Adult learning principles will be used in the conduct of the workshop, with an action-learning framework to drive action for change and improvement in objective

writing. Participants will be encouraged to effectively review some of the extension objectives they have written and rewrite them using SMART principles in groups of not more than five people. Group presentations will be done as a way of encouraging the groups to share what they have done with the whole group.

Burns (1995), an education theorist, has highlighted five practical theories of andragogical model learning which can be used in such an adult learning design.

These theories are that:

- 1. Adults must know why they are required to something new as a motivating factor to learn. Adults will invest time and effort in their learning where they know there is direct benefit to their standing in their organizations. It is hoped that in this workshop, participants will understand the rationale for willing SMART objectives by evaluating some of the objectives of their extension programs in previous years.*
- 2. Adults are responsible for their own learning. They tend to resent imposition when they walk into an educational or training setting. This is where participants must be able to value their experiences so that such experiences can become learning blocks in such workshops,*
- 3. Existing In any group of adult learners is a range of individual differences. Thus, facilitators must put more emphasis on individual learning goals. This is where experiential learning techniques, group discussions, and problem solving exercises become paramount.*
- 4. Adults are task-oriented and problem-centered in their learning approach, more so to problems that face them in everyday life in their work-place and homes. Therefore to enhance this learning approach the use of written objectives of their extension programs in this workshop will, to a certain degree, relate their learning to real world examples.*
- 5. Intrinsic factors, such quality of life, self-esteem and job satisfaction are motivating factors in adult learning approaches.*

Participation description

It is anticipated that the process will be tailored to embrace level five and six of Pretty's typology. The thrust here is to stimulate participants to derive solutions and fill in gaps in their knowledge about SMART objectives. The workshop will be seen as a means of assisting Individual extension officers to better understand the situation they are in so that they make better choices towards framing better and more realistic extension objectives. Therefore, the main paradigm of extension will be education and human development as the workshop is being tailored towards educating extension officers in framing SMART objectives.

Workshop design

The design of the workshop will take into account the:

- process to be used in conducting the workshop, and*
- resources required to conduct the workshop.*

Creation of the process will involve the meta—process, which outlines the whole picture of how the desired output will be accomplished, while the micro-process involves the smaller parts of activities embedded within the meta-process. In essence the micro-process is paramount, as these activities will determine how best the Meta process will best be achieved.

The main parts of the mew-process take into account the:

- range of extension tools to be used, which will include a handbook on setting objectives;*

- learning principles and participation, which will include adult learning principles, learning paradigms, description of participants and learning styles; and*

- workshop objectives, which will include course statements, Bennett's Hierarchy refinement of objectives and SMART statements.*

Workshop Meta-process

The micro-process is as follows:

- 1. Planning-meetings will be conducted by the overall coordinator and the facilitators;*
- 2. Production of training manuals, including the budget;*
- 3. Conduct awareness campaigning, targeting the various clients;*
- 4. Discussion with clients;*
- 5. Setting and confirming workshop dates;*
- 6. Registering participants,*
- 7. Preparing workshop program;*
- 8. Booking and preparation of training site;*
- 9. Distributing program to clients;*
- 10. Conducting workshop; and*
- 11. Evaluating the workshop.*

Conclusion

Looking back at the objectives initially set for this project 1,1 realize I have achieved a lot more from this project than I initially expected. I found in this case, a number of learning actions were important in making decisions needed to complete this project. Interactions with peers and shopping around for ideas have been very

important teaming experiences. Reading and asking were important learning actions, but thinking and filtering ideas were the most important. The interview sessions with the extension officers were valuable, as the result enabled me to gain a broad overview of their situation. This I hope will form a sound rationale for conducting this workshop. The challenging part of this project will be the actual organization and conduct of the workshop as I will be able to put into practice some of the concepts I have learnt.

References

- Burns R 1995, The Adult Learner at Work: a comprehensive guide to the context, psychology and methods of learning for the workplace, Business and Professional Publishing, Sydney, Australia.*
- Foster.Derek 1999, Developing Extension Processes, Rural Extension Centre, University of Queensland, Gatton Campus.*
- East New Britain Provincial Administration: Annual Works Program, year 2000. Division of Primary Industry, East New Britain Province.*
- Fell, R 1997, Action Learning and the Application of Adult Learning Principles giving meaning to Accredited Training for Extensionists, Managing change — building knowle4ge and skills, Conference Proceedings, 2nd Australian Extension Conference, Albury, November. 1997.*
- Giles, T & Stansfield 1995, The Farmer as Manager, 2nd edn, Bookcraft Ltd. UK.*
- Hodgetts, R M & Kuratko, D F 1995, Management, 3rd edn, USA.*
- South Pacific Institute for Research, Extension and Training in Agriculture and Food and Agriculture Organization. 19B8. USP Alafua Camous Apia Western Samoa.*
- Stoner J A F, Freeman RE 1992, Management. 5th Edn. Prentice-Hall international. Inc. London UK.*



Anna Yamanea and Amy Yowana from Highlands Agricultural College discuss their issues with workshop co-facilitator Laurie Fooks.

VISUAL AIDS AND POSTERS

These extracts on using visuals to support speech and Poster Presentations contain some useful hints. They are extracted from:

Malmfors B., Garnsworthy P. and Grossman M. 2000, *Writing and Presenting Scientific Papers*, Nottingham University Press, UK

1. VISUALS SUPPORT YOUR SPEECH

Supporting a speech with visual displays is very useful in science communication, as well as in providing variation and in stimulating interest throughout the presentation. Tests have shown that people absorb more, and retain the information better, when it is communicated to them in both words and pictures, as compared with words only (Figure 82).

It is essential that the visuals used are clearly seen and meaningful to the audience. They should relate to the words spoken, be well organised and emphasise the important points. A visual that is overloaded, difficult to read or understand, or not apparently related to the speech will only be distracting.

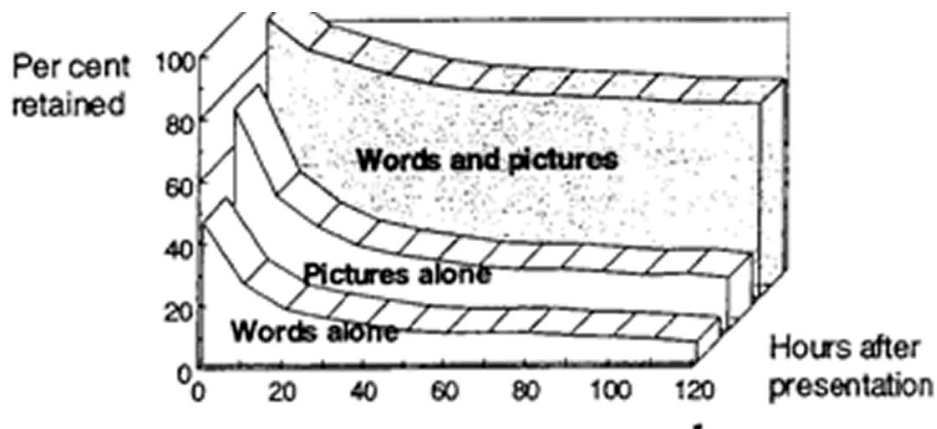


Figure 8:2. Audience retention of presented information¹.

Modified from Woelfle, R.M. (Ed.): A guide for better technical presentations, p.37. MEE Press New York (1975). Results from US Air Force.

Which visuals to use?

The visuals mainly used in oral presentations at scientific meetings are:

Overhead transparencies (acetate sheets)

Slides for a projector

Electronic presentation (computer-based projections)

Other visual options are films and videos. In a small meeting it might also be an option to use flip charts or a writing board.

When deciding on which type of visuals to use, you need to find out what technical equipment will be available in the presentation room. Another factor that might limit your choice is the equipment on hand to produce your visuals. Remember though, that using the most modern methods for producing and showing visuals is no guarantee of a successful oral presentation. In fact, technical sophistication may even be a drawback, because there is more that can go wrong, and it might require quite a lot of practice and good luck. You can do a lot with simple means. For example, if you don't have access to a colour printer, you can still add colour to transparencies or make a drawing by hand.

Use a font size that can be read from a distance

It is an absolute necessity that everyone in the audience can see and read your visuals, including those sitting at the back of the room. The speaker should never need to say: "You probably cannot see this, but..." If that is what you expect don't use the visual! The font size might have been sufficient in a small room, or on a large screen, but always be prepared for the fact that the screen may not be large enough. Before making all Use a large your visuals, check the readability of a few of them font size under various conditions if you are not certain of the font size needed. When using PowerPoint, for example, you can also look at your slides in "slide sorter view". If they are hard to read, your font may not be large enough.



Use a large font size

The standard layouts offered in presentation software are intended to make it easy for you to balance the display and to use a proper font size. Note, however, that you might still need to change the line spacing or to move the text to get balance in the visuals. Therefore, it might be just as good, or even better, to use the option "blank page". Then you will be more active in designing your visuals.

When writing text on visual displays you should think of the following:

Each display should be simple and easy to grasp quickly. It is usually better to produce two simple displays rather than overloading one.

Bullets can accentuate the text. Use dots or numbers, or insert symbols like squares, circles, hands, arrows etc.

A large font size must be used for the text (minimum 20-24 points); headings preferably larger. In the standard layouts the font size is usually around 30 points for text and 40-45 points for headings.

Words written in lower-case letters (or with an initial capital) are easier to read than words all in capitals.

Font types without serifs (e.g. Arial or Helvetica) are often said to be more easily read in short text messages, whereas fonts with serifs (e.g. Times New Roman) are easier to read in full paragraphs. If you want it to look less formal, use e.g. Comic Sans.

Bold text might be seen better, but only if the text is brief.

Show a table or a graph?

Research results are often presented in tables in the written scientific paper. In visual displays for oral presentation, however, tables are often converted to graphs, which usually makes it easier for the audience to grasp the message quickly. If the precise data are important, use a table. But if the major purpose is to show a trend or to make a comparison, a graph can be far more instructive. Below you see the same data illustrated in a table and in a graph (Figure 8:4). Which one of those do you think will best help the audience to catch the message?

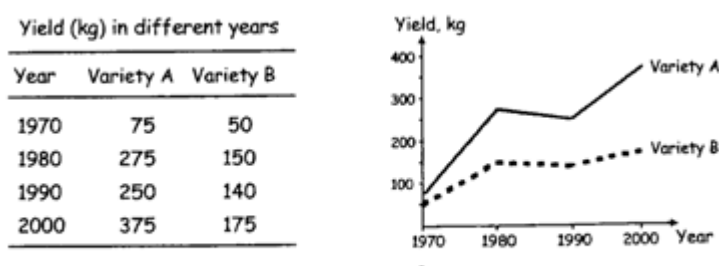


Figure 8:4. The same data illustrated in a table and in a graph (line chart).

As with text displays, both tables and graphs must be simple and not overloaded. The time available for the audience to look at each table or graph will be very limited. Make sure that it is clear what they contain. Abbreviations should be avoided as much as possible, but if you have to use them, make them logical. Help the audience to catch the conclusion(s) from each table/graph. You can, for example, write a summary conclusion in connection with each table or graph shown.

Tables should not be complex. Two or three rows and/or columns are usually enough. The font size must be as large as for text displays. Rounding off the figures adds to clarity. The table visual must not be a non-enlarged copy of the full table in the paper, but could be a part of it.

Making attractive graphs should not be a problem, because there is useful software available for that. Which type of graph to choose depends on what you want to illustrate (see Figure 2: 1 in the chapter "Sections of a Scientific Paper:"). Use a:

Line chart (diagram) to show a trend

Scatter chart to show dispersal or a line fitted to data

Bar chart to make comparison at specified occasions

Pie chart to show proportions

Minimise criss-cross reading of your graphs. If possible, write definitions next to each line or pie-segment, instead of having explanatory legends outside the graph.

2. POSTER PRESENTATION

Poster presentations of research results are used increasingly at scientific meetings and on other occasions. Including a poster session as an alternative to oral presentations means that the number of papers/abstracts can be increased; posters can also have several advantages for the presenter.

Research results can be presented effectively in a poster:

Main messages can be highlighted

Viewers can study the information at their own pace

Opportunity for questions and meaningful dialogue between poster presenter and viewers

The poster might be reused - e.g. at the presenter's home institution

Posters require a lot of time for preparation. Meeting organisers thus have a great responsibility in planning a poster session so that both poster presenters and audience get the most out of it. It is important that posters are located where the audience can find them easily, and that time is allotted in the programme for these presentations, which should not coincide with oral presentations in the same Scientific area. Poster sessions without the opportunity

for meaningful dialogue with the author(s) preclude one of the major benefits of this form of communication.

ATTRACT VIEWERS AND SHOW THE ESSENTIALS

Poster sessions are often filled with a large number of posters, and there is intense competition for audience attention. You need to make the audience curious or interested enough to go closer to your poster, but be aware that you have only a few seconds at your disposal to achieve this. The phrasing of the title and the overall appearance of the poster, therefore, are of utmost importance. To maintain and further arouse interest, your poster needs to have a brief, clear message, so that the audience can quickly grasp the most important points to see how it applies to them. Thereafter they may look for more details, and possibly discuss the topic with you as well.

As with oral presentations, it is important to adapt to the poster audience. think ahead of their probable questions, both for deciding the content of the poster and for preparing the dialogue part. The poster is often structured like a scientific paper, using headings such as Introduction, Objectives, Methods, Results and Conclusions. Another option could be to use more informal headings, like short statements or questions. Novelty might help make the poster more attractive.

Whatever structure is used, the title of the poster and its number in the meeting programme must be given at the top of the poster, followed by the author names and addresses. In addition, the poster should show why the topic is important, the objectives of the study, the most important results, and the main conclusions and possible implications. The methods used are normally mentioned very briefly, whereas the results (with emphasis on visuals) form the largest part of the poster. You may want to include a lot of information, but remember that the viewers might miss your main messages if you overload the poster!

DESIGNING THE POSTER

Before you start planning the poster, you must know the requirements for height and width as specified by the meeting organisers. Make sure you get it right so that you don't make a poster in landscape orientation when it should have been in portrait. The meeting organisers may also set rules for how to structure the way that you find best. It is important to have some consistency within a poster, but variation between posters may add substantially to a poster session. So use your imagination to make an attractive and informative poster, and remember that the key for a successful poster presentation is simplicity!

Choose layout and content

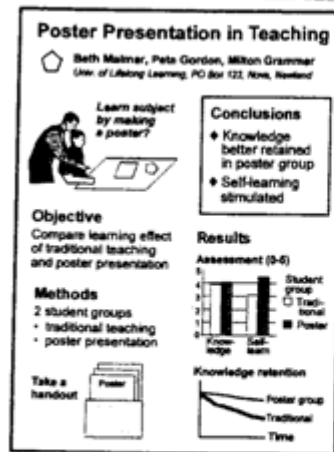


Before deciding on the poster layout it can be helpful to set up a one-page model in proportional scale, either on paper or on the computer. The content can be arranged in columns running down the poster, or in rows running across it. If the poster is wide, then it might be best to arrange the information in columns, so that the viewer walks along the poster from left to right; especially if many people can't be expected to read from the poster at the same time.

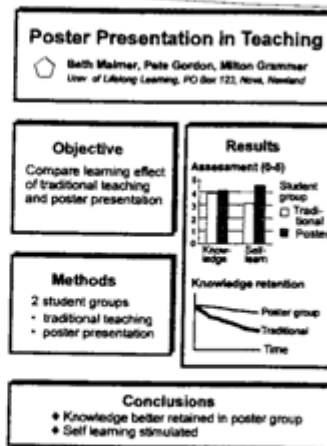
The key messages on the poster should be placed where you think the audience will notice them best. Arrange the content in a logical order, maybe starting with the importance of the topic at the top-left, and ending with conclusions at the bottom-right of the poster. If you choose to do it this way, make sure to emphasise the conclusions, and don't hide them at the very bottom of your poster. Another solution might be to place the conclusions centrally on the poster, at eye-height for the audience. There is no single answer as to how to do it. Your poster should be self explanatory, and the sub-sections could, for example, be numbered to guide the viewers.

Visual displays, such as tables, graphs, photos and other illustrations (e.g. drawings, paintings and clip-art) can make the poster attractive and easy to understand, assuming that they are relevant to the poster topic. Strive to find a balance between the poster text and the visual displays, both with regard to size and proportions of the poster. Some examples of poster layouts are given in Figure 9: 1.

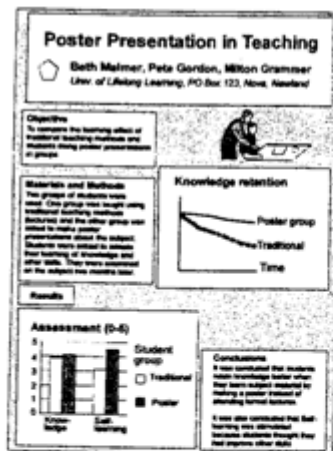
A poster needs a unifying background, which separates it from the poster board and neighbouring posters. To achieve this, you can mount the individual elements of the poster on coloured cardboard manually ("multi-part poster"), or you can produce a "single-sheet poster". These alternatives are dealt with in the next section. Remember that the background must not be distracting. It is the message that should be emphasised. If you want to unify groups of data on the poster, then you might use a sub-background colour that harmonises with the main background.



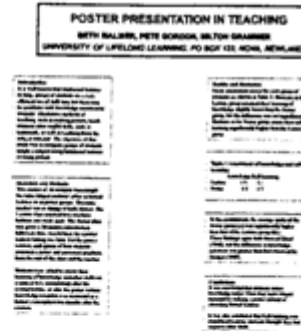
Unifying background. Conclusions at eye-height. Attraction illustration and handout.



Distinct sections. Poster somewhat "spotted". No unifying background. Conclusions far below eye-height.



Unifying background. Text on the sheets too small. Visuals larger than needed. Conclusions hidden.



Enlarged manuscript mounted on the posterboard. Should not be accepted!

Figure 9.1. Examples of posters.

If you want to accent part of the poster, then you could choose a contrasting colour. Text is usually read best when written on a background that is light (e.g. light beige or grey), but not pure white.

Occasionally you see posters that consist of a number of individual sheets mounted directly on the poster board, often with a dark frame around each and

some empty space between the sheets. This usually gives a spotted impression, and we don't recommend this approach.

Each section of the poster should contain just a few messages. You do not need to write complete sentences; so delete most of the words, but leave the meaning. The details can be given in a written paper. For example:

Description of Materials and Methods
Description of Materials and Methods
in printed summary for handout **in the poster:**

<p>Two hundred people, who regularly attended the Heart Clinic at the Royal Free Hospital, were randomly assigned to two equal groups of 100. One group was asked to consume two eggs per day for thirty days and the other group acted as controls. Blood samples were collected from each patient at the start and end of the trial period for cholesterol analysis by the method of Smith (1996). Patients were weighed at the time of blood sampling.</p>	<p>Treatments (30 days duration)</p> <p>A 2 eggs per day (n=100)</p> <p>B Control (n~100)</p> <p>Measurements (days 0 and 30)</p> <p>Plasma cholesterol</p> <p>Body weight</p>
---	--

Don't overload the poster! Leave empty space; that is important if the viewer is to catch the content; but make sure that the text and graphics don't appear unrelated. Remember the purpose - to awaken interest and stimulate discussion.

Make the poster

Just like visual displays used in an oral presentation, posters can be created on the computer, either partly or fully. You can use software for word processing, presentation, graphics, drawing and layout. Before making the individual elements of the poster, you should decide how it will be mounted. A poster can be produced in different ways, e.g.:

Multi-part poster

By "multi-part poster" we mean a poster where the individual elements are produced separately (usually with a computer) and mounted manually on a joint background paper or card. To make the poster stable, the background paper can be pasted onto cardboard or foam-core board. The poster can be given "life" and a deeper dimension if some parts, e.g. illustrations and graphs, or some demonstration materials are attached so that they stick out a little from the background.

The multi-part poster often needs to be split into segments for transport as carry-on luggage. The final mounting is done at the meeting site, where the segments are put together with broad tape on the back. The poster can be completed in large parts while still at home, but save some text sheets, illustrations etc. to paste at the final mounting, so that you can hide parts of the joints. The final mounting is easier if the segments are taped and folded in pairs before transport.

Single-sheet poster

If you want your poster to be produced as a single sheet, you can create it digitally on the computer screen by using layout or presentation software, and then print it on a special type of printer to achieve the desired size. Another option is to mount the individual poster elements on background paper, and then make a photographic reproduction. The single sheet poster can be printed on soft paper (and might also be covered with plastic laminate), or it can be printed on cloth, which makes the poster easy to transport. To transport the paper sheet safely, you might need a poster cylinder.

It is not easy to say which type of poster will be best. The single-sheet poster is simple to mount at the meeting site, but the equipment needed to produce it may not always be available, or may be expensive to use. If well done, the multi-part poster might be more "alive" than a single-sheet poster, but be prepared to spend time at the meeting site on the final mounting. The ultimate preference is largely a matter of taste. What you should never do, however, is just to enlarge your written paper to form a poster; this is guaranteed to look dull and unprofessional, and people will not waste time reading it.

When making the poster, it is also important to think of the following:

Colours will enhance the poster, but too many colours will distract or give a disjointed effect. Title and headings can preferably be written in colour, but the body text is usually easiest to read in black (or dark blue). Colour can be used to highlight separate or associate information. Think of the background colour when you choose colours for headings. Remember also, that colours on a digitally produced poster may not look the same in print as on the computer screen.

Bullet points are easier to grasp than text paragraphs. You can use regular bullets or insert various symbols as bullets; the font Monotype Sorts, for example, gives you many options.

The font used should be easy to read and can be either with serifs (e.g. Times New Roman) or without serifs (e.g. Arial and Comic Sans). Use a font with proportional spacing between characters, rather than one with fixed pitch (e.g. don't use Courier). Bold letters in the title and headings may facilitate reading from a distance. Words in lowercase letters (or with an initial Capital) are easier to read than words in all UPPERCASE letters.

Text size must be large. If the room is crowded it might be difficult for the audience to come very close to the poster. The poster title should be easily read from a distance of 3-5 m and the text from 1.5-2 m. The font size (points) needed for this is about 110-120 for the title, 60-70 for headings and 30-40 for the body text.

Tables and graphs must be easy to read and to understand (for examples of different types of graphs, see Figure 2: 1 in the chapter "Sections of a Scientific Popes"). Use an appropriate font size, limit the amount of information, and enable the viewer to quickly grasp what the table or graph is about. A written conclusion/take-home message directly over or under a table or graph might also help the viewer.

Clip-art can be useful to illustrate the poster; modify or compose clip-art to fit your purpose if necessary. You might also put an "attention-getter" above or under the poster. The attention-getter could be made in cardboard, for example, or it could be a striking photograph.

A matt poster surface is usually preferable to a glossy one, because light reflecting from a glossy surface can make your poster impossible to read.

Glossary

The following definitions are based on explanations from The Pocket Macquarie Dictionary, the Encyclopaedia Britannica, and Askin (in press). They provide an introduction to the languages of science and to the notion of science as a human knowledge system. If the range of definitions is inadequate for you then expand the list by consulting a reputable science dictionary.

Accuracy In terms of instruments and scientific measurements, accuracy is defined as the conformity of an indicated value to an accepted standard or true value (see also precision).

Action Learning Cycle, the phases that individuals and groups go through as they attempt to undertake new learning and to make changes as a result.

Action Research is based on the idea that the researcher does not remain an observer outside of the subject of investigation, but becomes a participant in the relevant human group. The researcher becomes a participant in the action, and the process of change itself becomes the object of research. Action research arises from behavioural sciences and is applicable to human activities that are attempting to solve problems (Checkland, 1981).

Aims, the intended outcome or purpose of a system or program in specific terms. Also see goals.

Amount, refers to mass, volume or aggregate; use number when units are involved.

Analysis of Variance, a computational and statistical procedure that is often used to analyse the data from an experimental study.

Andragogy, the art or science of helping adults learn.

Applied Research, research that aims to provide practical outcomes.

Basic Research, research relating to or forming a base of fundamental principles. Sometimes called theoretical or pure research.

Belief, the acceptance of a truth or reality without complete proof.

Bennett's Hierarchy is a table that is an aid to planning a communication product. It lists the objectives, expectations and development of the product as a hierarchy of ranging from community to resource considerations.

Biology, the science of living matter in all its forms.

Biophysical Sciences, branch of biology concerned with the study of biological structures and actions using the principles of physics.

Block, a set of plots to which a certain set of treatments is applied.

Brainstorming is group exercise in seeking possible solutions to a problem. It involves the following steps: 1 Select one member of the group as the recorder. 2 Write the question to be answered in a prominent position. 3 Ask for possible solutions to be called out. 4. Record possible solutions until ideas cease, without allowing their value or relevance to be expressed. 5 Evaluate the ideas, and propose possible solutions.

Cognitive processes, the process of learning and knowing.

Communication medium, the medium of communication, such as press (print), radio, television, mail, e-mail, internet, call centre.

Communication product, a specific item, based on a communication medium that attempts to transfer a message to one or more a receivers.

Communication, passing on or sharing of thoughts, opinions or information.

Competition effect may occur in field experiments. If two adjoining plots have treatments, which cause different types of growth, the edge row of the plot with the more vigorous growth will gain at the expense of the weaker row next to it and so the difference in yield recorded (if no discards are allowed at harvest) will over-estimate the effect of the treatment.

Context, the circumstances or facts that surround a particular situation or event.

Control, can refer to the untreated plot or animal in field experiments. For instance a herbicide treatment may reduce weed growth compared to the untreated control.

Copyright, the exclusive, legally secured right to publish, reproduce, and sell the matter and form of a literary, musical, dramatic, or artistic work. Copyright laws are designed primarily to protect artists, publishers, or other owners against any unauthorized copying of their works. A copyright supplies a copyright holder with a kind of monopoly over the created material, which assures control over its use and the financial returns from it.

Correlation, the relationship between two or variables and the correlation coefficient is a measure of the correlation.

Cosmology, the study and theory of the origin, structure and workings of the universe.

Critical thinking, making conclusions or recommendations on a problem through the synthesis of information from various sources and possibly involving original and lateral thinking

Data (plural), datum (single), facts and statistics collected together for reference or analysis- known information from which inference may be drawn. Frequently used as a synonym for facts, observations or results from experiments.

Deductive reasoning or Deduction, the process of drawing a general conclusion from facts.

Development is the application of information from research as new products or process.

Economics, the science of the production, distribution and consumption of wealth.

Edge effect, if a fallow path or a different crop borders a plot, the growth near the edge may be atypical of the treatment.

Editing , the preparation and arrangement of material for publication, a task based on skill, experience and good English expression rather than just knowledge of the subject area.

Engineering, the branch of science and technology concerned with the design, building, and use of engines, machines, and structures.

Ethical communication, a commitment not manipulative in the communication process.

Ethics, a branch of philosophy that deals with moral principles.

Experiment, an act or operation for the purpose of discovering or testing something.

Extension, the transfer of information from research and development to potential beneficiaries, using an appropriate medium.

Extension, transfer of information from science to potential beneficiaries, using an appropriate medium.

Fact, an indisputable truth known by actual experience or observation.

GANTT chart, a planning tool that considers the sequence of steps in a project and their relative timing and duration.

Gender sensitivity in communication, actively ensuring that specific socio-cultural groups (for example: women, men, youth, aged, unemployed etc) are not excluded, disadvantaged or put down by a communication activity.

Goals, the outcome of a system or program in broad or general terms. See Aims.

Host organisation, Any individual, group, institution, company, organisation or association that is the prime instigator of the conference.

Humanities, the study of literature, philosophy, art, languages etc.

Hypothesis, a proposition, idea, theory or other statement adopted as a starting point for discussion, investigation or study. Hypothesis testing is a form of statistical inference that uses data from a sample to draw conclusions about a population parameter or a population probability distribution.

Inductive reasoning or Induction, logical process of making conclusions based on past experiences and instances.

Information, facts provided or learned about something or someone.

Innovation, the application of an invention, which comes from research, to a significant market need.

Integrate, is a popular word these days but is often used incorrectly. It means to combine parts into a whole. Be sure that join, mix, combine or amalgamate would not express your meaning more clearly.

Intellectual Property, industrial property (inventions, trademarks, and designs) and copyrighted materials (literary, musical, photographic, and other artistic works) that are protected by international convention.

Interval is the space or period of time between two events.

KASA, Knowledge, Attitude, Skills, Aspirations, the changes in people's understanding and thinking arising from communication activities or products.

Knowledge, facts, information, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject.

Language, any basis of communication and understanding, such as a set or system of chosen symbols, which allows people to communicate with others who are familiar with the system.

Lateral thinking new ways of doing something by making associations with apparently unrelated areas rather than following a logical train of thought.

Management, the direction or control of activities for specific outcomes. It is a practice rather than a science, performance rather than knowledge.

Measurement, a quantitative result from measuring, which is the process of judging the size, quantity etc. of something.

Mind-maps are personal tools for arranging ideas before commencing to write. They consist of a central word or concept, around which you draw the 5 to 10 main ideas that relate to that word. With each child-word you

again draw another 5 to 10 ideas that relate to it. In this way a large number of related ideas can quickly be produced and arranged as you write.

Modelling, building and/or using models to study biophysical or socioeconomic systems.

Models, a computer program containing a series of mathematical equations that mimic 'real-life' biophysical or socioeconomic processes.

Natural Sciences, sciences dealing with objects in nature.

Number, consists of numerals or digits.

Objectives are clear descriptions of the expectations from an activity.

Observation, qualitative information received from noticing, watching or noting events.

Opinion, a personal judgment or belief not held firmly enough to produce certainty.

ORID, an acronym for a structured approach to reviewing a learning experience. Objective- what did I actually do? Reactive – how did I respond? Interpretive – what does it mean? Decisional – will I do things differently?

Original thinking, novel and independent thoughts

Outliers, measured values that appear unusually large or small and out of place when compared with the other data values. Statisticians can identify an outlier and then review the appropriateness of its inclusion in the data set. If an error has been made, the outlier can be rejected. However if it is a valid value it may indicate incomplete knowledge and a need to form a new hypothesis for testing in another experiment. Thus valid outliers can be important triggers for advancements in knowledge.

Paradigm, a pattern or example.

Parameter, a constant quantity that enters into the equation of a curve or calculations.

Participatory Research, applied research that involves potential beneficiaries in its planning, execution, interpretation and application.

Pedagogy, the art or science of teaching children.

Physical Science, the study of natural laws and processes other than those dealing with living matter.

Plagiarism, claiming the writings of another person to be your own. Such fraud is generally in violation of copyright laws. However if only thoughts are duplicated or expressed in different words, there is no breach of contract. Nor is there a breach if the work was developed independently.

Precision, the degree of exactness with which a quantity is stated. For example, two experiments (differing perhaps in design, layout etc.) testing similar treatments applied to the same crop (or animal) are said to be of differing precision if the standard error per plot is greater in one than in the other (the latter has greater precision).

Probability, a term that deals with uncertainty. It is a numerical measure of the likelihood that a particular event will occur. Probability values are assigned on a scale from 0 to 1, with values near 0 indicating that an event is unlikely to occur and those near 1 indicating that an event is likely to take place. A probability of 0.50 means that an event is equally likely to occur or not to occur.

Refereeing, the critical evaluation of the methods, results and discussion (i.e. the content) of a paper in respect to the standards or policies of the intended publication.

Regression, the statistical relationship between a dependent variable Y and or more independent variables X₁, X₂ etc; Y becomes a function of X e.g. $Y = bX + a$.

Repeatability, with industrial and scientific instruments it is the closeness of agreement among a number of non-consecutive measurements in the same operating conditions. It is usually expressed as the product of the standard deviation of n measurements and the student t value for n.

Replicate, in a non-factorial experiment, this means a set of all the treatments; in a factorial experiment it means a set of all factors and their combinations. "Without replication" means, paradoxically, that there is only one replicate.

Research and development or R & D, two intimately related processes by which new products are created. Research and development is the beginning of most systems of industrial production. Innovations that result in new products and new processes usually have their roots in research and have followed a path from laboratory idea, through pilot or prototype production and manufacturing start-up, to full-scale production and marketing.

Research conference, a consultation a meeting, retreat, seminar, symposium or event for discussions on a specific topic.

Research, systematic enquiry or careful examination into a subject in order to discover facts or principles.

Resolution, the process of separating closely related forms or entities to the degree to which they can be discriminated.

Rich Pictures are a tool for improving our understanding of complex topics. We link together the various components of a topic, and relate them to ideas from other topics and to our experiences to form a diagram of our understanding. Drawing a rich picture of a topic involves two steps: 1. Identify the main ideas, terms, parts of your understanding and represent these with icons where possible. 2. Draw lines between terms that are related, and draw or write on each line an icon or phrase identifying the nature of the relationship.

Sample, a small part of a whole that is meant to have similar characteristics to the whole.

Science, a systematic study of mankind and the physical world based on reproducible observations, measurements and experiments, and the knowledge so gained.

Scientific information, the information derived from the scientific methods that are applicable to natural and social sciences. It is based on the analysis of data and/or observations collected by scientists.

Scientific method, a systematic and rigorous process of devising a hypothesis from existing knowledge, testing it by experimentation and using the results from experiments to either support or reject the hypothesis.

Seminar, a meeting of students or experts to discuss a specific topic, usually of short duration and based around a keynote speaker or facilitator.

Sensitivity, the ratio of change in output from a steady state to the change of input that causes output to change.

Significant difference, exists when values depart from the null hypothesis in accordance with the confidence intervals of a statistical test – usually 95 % or 99 % probability.

Simulation, running a model to mimic or simulate a biophysical or socioeconomic systems and a series of simulations, which are conducted in response to a systematic change in one or more inputs, is called a **simulation experiment**.

Social Science, any discipline or branch of science that deals with human behaviour in its social and cultural aspects. The social sciences include cultural anthropology, sociology, social psychology, political science, and economics. Also frequently included are social and economic geography and those areas of education that deal with the social contexts of learning and the relation of the school to the social order. History is also regarded by many as a social science.

Sponsor, those bodies that provide either material or financial support for a research project or for running a conference.

Stakeholder, Any person or organisation that has a vested interest or benefits in some way from a research project or conference.

Standard deviation is the square root of the variance of a population.

Standard error is the standard deviation of a sampling distribution.

Statistics, the science that deals with the collection, classification and use of numerical facts.

Summit, a meeting between top-level officials

Symposium, a meeting or a conference usually based on a collection of opinions or articles on a topic by several people.

Technology, a branch of knowledge that deals with science and engineering as applied to industry. Similar to applied science.

Traditional knowledge or Indigenous knowledge, knowledge and beliefs held by indigenous populations that have usually not been established through scientific methods. Whilst such knowledge can provide a valuable insight for regular science it can also be misleading.

Treatment, a condition imposed upon a subject in order to bring about a response that can be measured or studied in some way.

Valid data, true, accurate and precise data within the limits of the experimental methods, a vital assumption when analysing results from experiments. Erroneous or fraudulent data corrupts the scientific methods and can lead to adverse personal and social consequences.

Value, is a derived ratio e.g. 3g MJ^{-1} but 3g or 1MJ are quantities.

Variable, a symbol or term that may be assigned different numerical values. An independent variable is a variable in a function that determines the value of other variables. A dependent variable has its value determined by other variables. For example in the equation, $y = 5x + 2$, 'x' is the independent variable and 'y' is the dependent variable.

Variation, the natural variability in our biophysical world. For example in biology, any difference between cells, individual organisms, or groups of organisms caused either by genetic differences (genotypic variation) or by the effect of environmental factors on the expression of the genetic potentials (phenotypic variation). Variation may be shown in physical appearance, metabolism, fertility, mode of reproduction, behaviour, learning and mental ability, and other obvious or measurable characters. In the physical world there are spatial and temporal differences in components of the environment such as climate or soils.

WHWC chart, a planning tools that complements a GANTT chat and describes When, How, Whom, and the Cost of activities in a project.

Extracted from : Mortiss, P. 1993 "Extension for Rural Change", 2nd ed.
QDPI, Brisbane

11 determining rural community needs

introduction

Before extension workers can start a program in their district, they must know what aspects of rural life need changing and what opinions and attitudes the target audiences have on these topics. Time and effort spent in determining people's needs and attitudes ensure that any program designed to affect change is based on a topic which is seen as relevant by the community. This will allow extension workers to design work programs which will communicate effectively with target audiences.

This chapter explains techniques of determining community needs and opinions. A similar range of methods is used for both the static approach to programming where a detailed situation statement is developed as the basis for selecting objectives and the more fluid participative approach where professionals and clients interact to develop a common understanding. The difference is one of emphasis. The traditional approach emphasises quantitative data and expert opinion while the participative approach relies more on qualitative data and client sources.

get to know people informally

During routine visits and office contact, extensionists get a good idea of the day-to-day concerns of their clients. Some clients may be particularly perceptive, analytical and have a wide range of personal contacts. Take particular note of their opinions. However, the danger in using informal contact as the main means of determining needs is that it might give a biased result because those in regular contact with the extension officer are self-selected and may not be a fair sample of the district people. Use both formal and informal methods to get an accurate picture of the district community.

study written records

In most countries, government, universities and other bodies collect and record relevant information on rural areas and conduct special surveys on particular topics. Some South Pacific countries conduct a regular agricultural census which records the number of farmers in each location, their crops and livestock and basic details of each national industry. Peruse such records to obtain a summary of the various industries and perhaps gain some historical perspective on

medium-term trends. However, written records have the disadvantage that they may be out of date and do not convey the motivations and feelings of people at the moment.

conduct group meetings

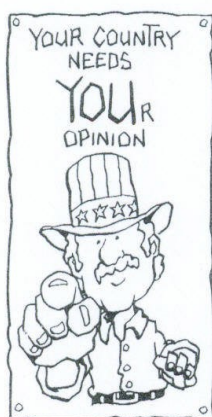
Conducting meetings especially for the purpose of revealing individual and community needs can be an effective method as it stimulates thought and mobilises energy. However, once expectations are raised, the person who conducts the meetings risks losing credibility if the meetings are not soon followed by action. The techniques to use in conducting meetings are detailed in chapter 10 'Working with groups'.

work with planning groups

Planning groups comprised of concerned citizens can be helpful in guiding extension programs and suggesting new areas of activity. Committee members should be alert to community and district conditions, be intelligent and articulate and have the time to devote to the work. These people are often hard to find and extensionists who work with planning groups often have to encourage active citizens to join the group as well as stimulate and educate group members.

In the USA, extension workers commonly work with planning groups made up of representatives from various interests. In Illinois, the county extension agents work with, and are partly responsible to, program councils' which are comprised of local citizens with an interest in extension. The original idea behind the agents having only a minimal influence on the councils was that when the council members felt responsible for their output, they would be more highly motivated and therefore more likely to produce a high-quality, relevant program.

An extensionist's leadership ability may be critical in producing an effective program. Wissmann (1991) has found that Illinois extension agents who produced high-quality programs substantially influenced the decision-making process of their program councils. They did not passively accept council programs and priorities but became either actively involved in decisions or subtly influenced them. Successful agents felt they should intervene because they had insight and special knowledge by virtue of their experience and training.



conduct a survey



Extensionists can choose between conducting either an informal, quick information-gathering survey or a more formal, statistically based survey.

The informed person's survey

The *informed person's survey* is a means of quickly gathering information about an area. It avoids the expense and time involved in conducting a survey based on a random sample. The method involves interviewing selected people throughout the district who are well informed because of their years of experience, special expertise, number of contacts, or key positions in information networks. For example, farmers strategically placed in the district, professional people, and key people in businesses are able to give a quick impression of district problems and concerns.

A variation of this technique is the *key informant method* by which information is collected over a period of time from residents who know the community well. Special efforts can be made to involve those representing a variety of lifestyles, ages, viewpoints and ethnic backgrounds (Butler and Howell, 1980). This method needs time to build a good relationship between the survey conductor and the informant. The method is capable of eliciting high-quality information on issues and events from silent majorities or minorities once rapport is built up.

Statistical surveys

Well designed, statistically valid surveys can give an accurate picture of the district enterprise mix, population age, income, and the state of the districts' industries. However, they are time-consuming and expensive to mount. By the time results are analysed and the report written, the issues may have changed. Furthermore, such surveys do not capture the immediate worries and enthusiasms of people. *Acting quickly while people are alert and keen to move is a key factor in most successful extension programs.*

Extension workers have realised the disadvantages of statistical surveys. Conway (1987) suggests that statistically based surveys often do not ask the key questions or obtain the critical data. He maintains the context of the data may be as important as the data itself and that variations may be more revealing than the resulting averages which are often the sole output of conventional surveys.

However, statistically based surveys do have their uses. They are able to uncover previously unsuspected relationships between variables which casual observation does not reveal. The quantitative data

is useful for convincing administrators with a background in the physical sciences. The basic steps in the design and conducting of questionnaire surveys are set out in chapter 14 'Evaluating extension activities'.

use other sources

Other sources useful for compiling information on client needs and community resources are:

- records of client queries
- extension organisations' past programs
- opinions of rural industry leaders
- contacts with agribusiness
- research workers' opinions.

consider the 'rapid rural appraisal' method

Extensionists have developed the concept of rapid rural appraisal (RRA) as a dynamic method of quickly gaining sufficient knowledge of an area to begin extension or research work. Although the concept was originally developed to explore complex farming systems in poor areas of developing countries, many of its methods are universally useful.

The name 'rapid rural appraisal' gives the impression that it is a quick but relatively superficial technique to use when there are insufficient resources to conduct a thorough questionnaire survey. However, the range of techniques used, the flexibility of the approach and its capacity to accommodate and adapt to unforeseen opinions and technical relationships mean that RRA is capable of giving more useful 'people-oriented' information than the conventional survey. However, its use does not preclude using statistically based surveys where more formal surveys are appropriate.

RRA is good for generating participation early in the program and it is more capable of handling the linkages between the social, economic and physical factors involved. Carruthers and Chambers (1981) define RRA as 'a systematic, but semi-structured activity carried out in the field by a multi-disciplinary team and designed to acquire quickly new information on, and new hypotheses about, rural life'. There are six basic principles of RRA (Lovelace, et. al., 1988) which are discussed in the following pages.

Exploratory and highly iterative research

Researchers make a concentrated effort to examine research topics in an exploratory, open-ended manner so as to increase knowledge and overall understanding. Although initial theories are formulated to

guide research, these are primarily used as vehicles for, and are in many ways secondary to, the acquisition of knowledge.

Formulated hypotheses are subjected to repeated testing, revision and refinement throughout the research process. Inappropriate hypotheses are abandoned and new ones are formed during the learning process as knowledge accumulates. Much of this is accomplished through 'iteration', a process of repeated checking which permits the testing, re-testing and refinement or re-formulation of ideas.

Rapid and progressive learning

The exploratory and self-checking nature of rapid rural appraisal and the intensity with which the research is conducted enable researchers to learn rapidly. Although the research may begin in some cases with only limited information and rudimentary knowledge of the topic under study, the quality of information and knowledge rapidly increases as 'new questions and new insights ... allow researchers to move toward an understanding of real problems and their solutions' (Lovelace, et. al., 1988).

Triangulation

Using several different sources and means of gathering information helps researchers in finding variation, understanding complexity, and increasing overall accuracy. To accomplish this, RRA practitioners examine research topics and questions from several different points of view (usually a minimum of three, thus 'triangulation'). This increases accuracy and reliability of research findings by cross-checking the collected data. In most RRAs, variations in at least three different dimensions are used, for example:

- 1 units of observation (e.g. single farms verses districts)
- 2 team composition
- 3 research methods.

Use of indigenous knowledge

A basic assumption of RRA is that rural inhabitants are extremely knowledgeable about local conditions and that their knowledge is crucial for informed and successful rural development. Researchers thus emphasise learning directly from rural inhabitants about rural conditions, problems and needs. Semi-structured interviewing is the main method used for obtaining information on indigenous knowledge.

Interdisciplinary approach and teamwork

Rural conditions and problems are usually complex and embedded in whole farm systems. Experienced RRA practitioners find that it is seldom possible for a single researcher or a single discipline to shed adequate light on the diverse factors and interrelationships involved. RRA researchers have therefore adopted an interdisciplinary team approach in which social and physical scientists contribute ideas and expertise.

Flexibility and the use of conscious judgement

Because RRA emphasises an intensive and repeated process of learning, it must be flexible. This fosters creativity and enables researchers to modify research plans, methods and techniques whenever and wherever it is needed. There is no standard methodology to use in a RRA—rather there are a suite of techniques which can be used in various combinations:

- secondary data review
- direct observation
- conceptual tools
- semi-structured interviews
- analytical workshops.

Secondary data consists of reports, maps, aerial photographs etc. that already exist and are relevant to the project. The review process involves searching for relevant data and summarising these in diagrammatic models, simple tables and brief abstracts. The aim is to be critical and to look out for what has been missed, but not to spend time here that could be better spent in the field.

Direct observation includes measurement and recording of objects, events, and processes in the field, either because they are important in their own right or because they are indicators of other variables that are important.

Conceptual tools consist of a wide variety of simple techniques for gathering, analysing and summarising information. These tools include maps, transects seasonal calendars, flow diagrams, charts, graphs, decision trees and venn diagrams.

One of the most important RRA techniques is *semi-structured interviewing*. This is a form of guided interviewing where only some of the questions are predetermined and new questions or lines of questioning arise during the conduct of the interview in response to answers. The information is thus derived from the interaction between the knowledge and the experience of the interviewers and the



interviewed. The latter may be groups, for example farm leaders, or key informants such as school teachers or local government officials, or the farmers themselves selected on one or more criteria.

One of the conceptual tools used in semi-structured interviewing is, for example, listing priorities: 'what is the most important problem you have in potato production?' and 'what is the next most important?' and so on. The responses of several different farmers to these questions can be compiled into a table of ranked production problems. A similar approach can be adopted to seasonal changes, for example, 'which month requires the most labour?' (McCracken, 1988).

A summary of responses to ranking and diagramming can be shown to target groups to stimulate ideas and to check and modify them. Diagrams are particularly useful in semi-structured interviewing, as they can be shown to interviewees to reduce the need for explanation and expression of ideas in abstract terms. Venn diagrams help analyse the relationships between people or institutions. They consist of touching or overlapping circles of various sizes, with the size indicating their importance and the overlap indicating the degree of contact or the strength of relationships.

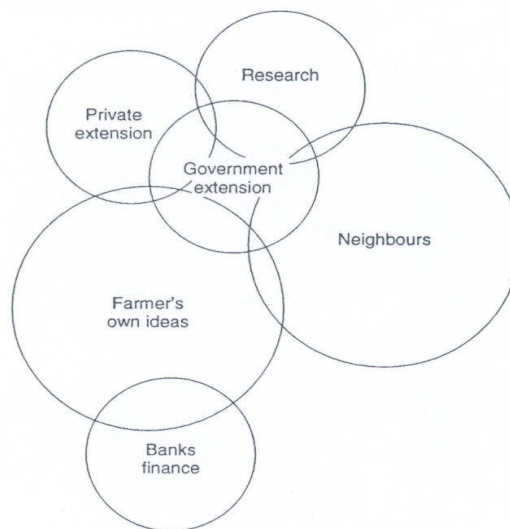


Figure 11 A Venn diagram

The final RRA technique is the *analytical workshop* for the research team. This takes place very soon after field visits, is semi-structured and allows for a multidisciplinary analysis of the field information. The analytical workshop is able to reach conclusions quickly about farm problems and avenues of tackling them. Because the researchers have worked together and exchanged information during the appraisal process they have a common understanding of the issues, and the practical nature of the information collected means little further time is spent analysing data. The fact that farmers are actively involved in giving details—of notations, yearly cycles of activity, problems and their priorities and other data—means that extension and research activities derived from the RRA process will be tightly focused on priority needs of rural people.

*learn from
the Sondeo
RRA*

The Sondeo approach to assessing farmer constraints and technology needs was developed in Guatemala (Hilderbrand, 1981). Although it was designed to assess needs in advance of agricultural research, it is also a useful technique for assessing extension needs. The Sondeo method of rapid rural appraisal is designed to last about a week and uses two-person teams comprised of a social scientist and a physical scientist. Each should be well trained in their own field and have a working understanding of one or more other fields. This multidisciplinary approach helps each team member to contribute to and identify with the final report. Quantifiable information is not emphasised in the Sondeo and therefore no lengthy data processing and interpretation follows the survey.

The process

On day one, the whole team, which may comprise ten people, makes a preliminary reconnaissance of the whole area under study and begins to define geographic limits of an identifiable farming system. After each discussion with a farmer, the team meets off the farm to discuss its findings.

On day two, members pair up—one physical scientist and one social scientist—and survey farms and form ideas on the situation in the area. Half-way through the day, the whole team meets to discuss its findings. The team pairs are changed to minimise interview bias and bring a true multidisciplinary approach to the survey. The limits to the area begin to be defined as well as the kind of technology likely to

mining rural community needs

Day three is a repeat of day two. Teams meet during the day to discuss findings and pairs are changed.

Day four sees each member of the team being told what section of the report they will be responsible for, and then re-formed teams return to interviewing in the field for half a day. In the afternoon, the group discusses the morning's findings before members begin to write their individual sections of the report.

On day five team members usually find they need additional information which they or other team members do not have. They therefore return to the field to fill in any gaps in information. In the afternoon each team member reads his or her report to the group for discussion and approval.

On day six, each section is read again and the total report is compiled and conclusions are drawn and recorded. The team then makes specific recommendations. The final product is a single report generated and authored by the entire multidisciplinary team and should be agreed to by all members.

Advantages

The advantages of this method are that it can process a large amount of information in a way that includes the views of many disciplines and it applies time pressure so that analysis and report writing are speedily completed.

Conclusion

The key to conducting successful extension activities is knowing rural people—knowing their technical problems and their attitudes. Using participative methods to gather information builds rapport with people and helps generate support for the extension programs developed.

Participant Evaluation Sheet

Date: Location:

1. Gender Male Female

2. Please indicate how beneficial your participation in this course was from a personal and professional point of view (please tick the appropriate box):

1	2	3	4	5	6	7
Not at all	Very little Benefit	Little benefit	Some Benefit	Beneficial	Very beneficial	Extremely beneficial

3. General Comments:

4. What were the most useful things that you gained from the course?

5. What was least useful to you?

Conducting Effective Workshops

6. What changes or other material would you like to see in the content?

7. What comments do you have to make about the process - the way the course as delivered?

8. In what ways, if any, has participation in the course impacted on your beliefs/future approach to teaching and learning?

9. Please make some comments about the venue of the course – the location, suitability, food, room quality etc

10. Please make any other comments about the course and/or suggestions about how to further improve any aspect.

Thank you for your assistance