

Weaving diverse cultural backgrounds into the training framework: Using participatory learning in a formal training framework to help farmers produce safe vegetables

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Farmers the world over are in an industry that is constantly evolving in response to economic, climatic and consumer influences. Education and training is the conventional means by which farmers increase their capacity to cope with change and remain viable.

Industry & Investment NSW (I&I NSW) is a recognised provider of training in Australia. I&I NSW has been using participatory training for non-English speaking background vegetable growers in the Sydney Basin for the past five years and has found it to be a significantly useful approach.

Market gardening in Australia has traditionally been dominated by migrants who have settled Australia in waves. As a result of the post World War II immigration boom migrants from Italy, Greece and Malta took up farming in the Sydney Basin. In the 1970s and 80s these were joined by Asian growers predominately from South China, Vietnam and Cambodia. Recently growers of African background have taken up leases in the Sydney Basin. Many of these growers have come to Australia from backgrounds of displacement and war and view government agencies with a great deal of suspicion.

In 1998, the NSW Premier's task force on market gardening by people of non-English speaking background recognised that these growers were disenfranchised from traditional education providers such as local technical and further education (TAFE) colleges due to language difficulties, time constraints and isolation within their communities. The introduction of chemical and environmental legislation enhanced the need to engage farmers in formal training (NSW Agriculture 2000). Furthermore it was recognised that these farmers' primary source of information was often the agents who were selling product and whose information was compromised by vested interest in product sales.

The recommendations of the task force included comments regarding the nature of training provided for these particular farmers. The training provided for farmers should be:

- relevant to their needs
- affordable
- at locations and times convenient to them
- funded for and delivered with appropriate interpreter services; and
- provide training notes with a summary in the language of the participants.

These are also consistent with the good adult education principles.

The use of participatory approaches for engagement and training has proven to be highly valuable in meeting the criteria outlined above. A participant focused approach involves the farmer in all areas of training development and delivery. Training is delivered on a farmer's property using a farmer field school method. Farmer field schools are essentially groups of people with a common interest who get together to study the 'how and why' of a particular topic (Gallagher 2003). They are particularly designed for field study, where specific hands-on management skills and conceptual understanding is required. In the case of the Sydney Basin training, farmers are able to develop an integrated pest management strategy, understand soil and fertiliser needs, undertake machinery and irrigation maintenance, develop post-harvest and quality assurance plans and use accounting packages. It is the authors experience that this is a particularly useful approach for learners with low English literacy.

As a group, the participating farmers choose several crops to grow. These can be those they are most familiar with or those they would like to learn to grow, providing a risk-free experimental opportunity to trial a new crop. The production of the crop is used as the main learning and assessment tool; it provides the classroom, the topics and the session structure. The participants are prompted to design small experimental trials, for example, application of compost, using soft chemicals or other integrated pest management tools, to answer questions they have about the crop production. As the crop grows it becomes the primary training tool for discussion as problems arise, for example, pest and disease.

The training acknowledges that, as farmers, they are the ones who are most aware of what difficulties and knowledge gaps they face. Trainers place emphasis on encouraging farmers to

learn how to trial new ideas and to develop the confidence to use these trials to problem solve. Integrating participatory learning into the formal training helps build farmer confidence in their skills. They can then apply those skills to deal with change, test technical ideas and design solutions that best suit their enterprise.

This approach provides a purposeful and relaxed learning environment, particularly for non-English speaking learners. There is less focus on texts and more focus and attention applied to experience. The farmers are more comfortable being out in the field and are often more forthcoming in a relaxed, familiar environment as opposed to being seated in a classroom situation. It is acknowledged by the trainers that the farmers are able to learn from each other and being in the field gives them an opportunity to share their experiences. Trainers can use these exchanges to introduce technical information and thus build participants learning.

In order to comply with the accredited Australian Qualifications framework, (AQF), assessment of competence must occur. Ordinarily in a TAFE or classroom setting this would be by a variety of written or oral assessment tasks. Where these types of assessment styles applied to the non-English speaking participants, they would not fit the fairness and validity tests required within the AQTF. Therefore we have had to develop assessment tools that met the criteria above but were also reliable. Primarily the assessment tools we developed were based upon physical demonstration of tasks, participation in group's discussions, presentations of results of plot experiments to the group and verbal responses to questions. The production of the crop was also used as the main demonstration of competence. Photographs were taken of learners carrying out operations as evidence that they were able to meet assessable outcomes. These approaches avoided the need for written tests where low English literacy prevents fair and reliable assessment.

Another assessment tool that develops over the length of the training is a farm management map. This participatory tool uses maps drawn by the participants of their farms which are overlays of soil, infrastructure, water and environmental noise and waste maps. This tool allows farmers to apply knowledge learnt during training directly to their own properties and produce an environmental management tool that can be used for both long and short term planning. The farm maps are also used as an assessment tool particularly for the outcome – 'carry out simple physical and chemical analysis of soils' and outcomes related to recording chemical spray applications and pest and weed management. Furthermore the introduction of basic farm mapping during this training will make it easier for growers to extend the concept in other areas of training they may undertake in the future such as the produce quality assurance program, Freshcare.

On completion of training farmers are awarded a nationally recognised qualification under the AQF. This is highly regarded by farmers and further helps to integrate them into the wider community. Although formal qualifications are important for many reasons, the real value of this training is that it gives farmers the capacity to solve farm problems themselves. Problems such as the 'big issue' questions:

- How do I use resources (water, chemicals, fertilisers) efficiently?
- What do I need to put in place to meet government legislative requirements?
- How can I develop new crops for changing markets?
- What impact is climate change and possible impending Australian greenhouse gas taxes going to have on my business?
- How do I remain economically viable in an urban environment?

Whilst most farmers are unlikely to consider these sorts of issues on a daily basis, they are the issues the farmers face in the long term and form the basis of the changing nature of farming. By encouraging farmers to link technical knowledge with real life problems they are able to develop skills that can be applied to these situations as they arise over time.

Barriers to participatory learning in a qualification framework

There are a number of elements critical to a national accredited training system, such as we have in Australia, that provide difficulties under a participatory-based training program. These include a lack of flexibility, a rigid framework conflicting with individualised training ideals and treatment of competencies as discrete training entities and not a portion of a continuum of learning.

The training delivered to farmers in NSW is partially funded by the NSW Department of Education and Training. This funding is given contingent upon delivery of units of competency as stipulated in the training packages. The units of competency being delivered in the training, whether that is the Certificate III in Agriculture or a short course program, have to be

nominated at the outset of the program. Here lies the first major confrontation with a participatory approach to training. In order to secure funding for delivery, which is essential for the disadvantaged migrant farmer groups, competencies that will be delivered have to be nominated upfront. This is before any opportunities arise for discussion with potential trainees, so there is no opportunity for the learners to decide what they will learn and which competencies they think are most suited to their business or education needs. As this is one of the primary elements in a participatory approach it restricts the scope of the participation and limits the ownership the participants have of the whole process.

Usually the first day of a farmer field school or similar participatory program involves a discussion of learning needs which frames the program of the school. We still do this, but in such a way as to meld the pre-ordained competencies into the identified learning needs. Where needs arise that are clearly not going to be met by the defined competences we identify additional competencies and work them into the learning program. This is an advantage for the learner, however, what this means for NSW DPI is that we are delivering more competencies (as we are still required to deliver and assess the nominated competencies) than are being funded, and this is not sustainable in the long term. Under the present funding arrangements with NSW Department of Education and Training's strategic training program (STP), there is little way of avoiding this. The system of funding only particular, pre-defined competencies and no others does not provide for flexible, customised participatory training.

The second area that presents difficulties is the rigid, tiered framework. The AQF levels represent certain levels of responsibility within a workplace:

- AQF I –entry level farm hand
- AQF II – farm hand
- AQF III – leading hand
- AQF IV – supervisor
- AQF V –manager
- AQF VI – business and financial manager.

The difficulties lie, in that most of the farmers are sole owner-operator enterprises with one person operating across all these levels. A certificate qualification at any one level does not adequately provide the skill range required to meet the needs of the participants. For example a small area vegetable grower might need basic grounding in safe tractor use (RTC2309A Operate tractors), technical skills in safe chemical use (RTC3704 prepare and apply chemicals), technical irrigation management skills, (RTE4605 Schedule irrigations), skills in producing the crop (RTE5014 Manage agricultural crop production) and business skills (RTE6901 analyse business performance). It is not possible under the present AQF system to provide one qualification that addresses the range of skill level described here. At most two units of competency can be from a level other than the one described by qualification level.

The third area of difficulty is the treatment of units of competency, with both the funding systems and the AQF framework as discrete training entities. There is an expectation that there is a clear delineation between one unit of competency and another in the delivery. That one 'topic' follows another with individual assessment events marking progression into a new topic. 'Today we are doing soils and fertilisers, tomorrow we are doing irrigation', where as in reality, particularly in participatory training such as a farmer field school, there is no delineation between competencies as topics of study. The learning progresses along with the crop and as issues arise, crop nutrition for example, they are discussed in a holistic manner along with connected issues of irrigation and soil fertility. Assessment is continual, observational and practically demonstrated by the advancing crop. Marking a point in time where each competency is delivered is not possible, only at the completion of the entire participatory process is competency achieved.

Overcoming these difficulties require novel approaches in training delivery and assessment. The approaches described above have been developed to overcome these difficulties. What brings assessment and learning together into a consistent approach, over the course of a number of years and courses is the 'learner profile' strategy. This has been developed to track each learner through the participatory process and provide consistent method of evidence gathering and recording. The profile consists of personal information and individualised assessment sheets. Certain learning targets are agreed to and written into the learning plan and signed off by the trainer and learner when they are achieved. The targets involve particular questions being answered correctly and the demonstration of particular activities and skills addressed by the competency. The competencies are clustered into groups that make production sense and are assessed when circumstances in the crop production cycle allow.

Together, the field based work, hands-on experiments, reporting to the group, mapping, class discussion and assessment by demonstration make up the participatory approach in the farmers field school model. It is a method successful in overcoming language and literacy difficulties and really engaging participants in their learning. At the same time it provides credible evidence of learning and competence. Participatory approaches in training, particularly for non-English speaking participants, provide real and measurable skill development. It is a legitimate approach to use within the AQF, provided assessment can be tailored to suit the needs of the client group. Problems arise with the degree of flexibility allowed by funding arrangements and the framework itself, however, these can be overcome to a satisfactory, but not perfect, extent by novel assessment approaches and a capable, experienced trainer. Greater attention needs to be given to incorporating participatory principles into program flexibility when formulating funding arrangements, so as not to limit the participatory experience for the learner.

Plate 1. Farmers measuring root depth of field school crop



Source: Smith 2008

Reference List

- Gallagher K 2003, 'Fundamental elements of a farmer field school', *LEISA (Magazine on low external input and sustainable agriculture)*, 19: 5-6.
- Dixon D (ed.) 2000, *The Premier's task force on market gardening by people of non-English speaking background*, NSW Agriculture, Orange, NSW.