

Moving the fence posts: learning preferences of part-time agricultural students

ALAN WOODS

TAFE NSW – WESTERN SYDNEY INSTITUTE

*Participant in the NCVER Building Researcher
Capacity Community of Practice Scholarship Program 2009*



NCVER



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Moving the fence posts: learning preferences of part-time agriculture students

Alan Woods, TAFE NSW – Western Sydney Institute

Building the research capacity of the vocational education and training (VET) sector is a key concern for the National Centre for Vocational Education Research (NCVER). To assist with this objective, NCVER supports a community of practice scholarship program, whereby VET practitioners without research experience are given the opportunity to undertake their own research to address a workplace problem. Scholarship recipients are supported by a mentor, and NCVER publishes their research results.

Alan Woods participated in the 2009 community of practice program. Alan is a teacher in agriculture at a college in TAFE NSW – Western Sydney Institute. In recent years this college has seen a decline in the number of part-time agriculture students. To attempt to halt this decline, Alan's research seeks to understand the learning preferences of part-time agriculture students at this technical and further education (TAFE) campus, to enable course delivery to be better tailored to their needs.

The study comprised a focus group with current part-time students, which was followed by a survey of current and immediate past students to elicit their views on the teaching and delivery of the agriculture program.

Key messages

- ✧ Hands-on practical training is highly valued. Students in this study emphasised a preference for this to be maintained or increased, but a lack of access to on-site livestock and regular industry-supported field days impacts on their experiences and outcomes.
- ✧ Alternative course delivery options such as online support materials and the use of videos may increase access and flexibility but should not replace practical training opportunities.
- ✧ The ability for providers and part-time students to negotiate customised attendance patterns may support increased enrolments.

The author notes that the challenge will be for the agriculture section at this college to respond to these findings and implement teaching and learning strategies which cater to the needs of the part-time student group.

Tom Karmel
Managing Director, NCVER

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Introduction

The object of the research was to improve understanding of the learning preferences of part-time agriculture students at Landisdale College¹ in the context of falling enrolments. Student numbers in part-time (night and weekend) classes reached a peak of 25 students per class in the mid-1990s and have declined since then. The goal of this study was to find out what learning activities would have a beneficial impact on student motivation and enrolment, such that the decline is reversed, and also to initiate discussion about these complex issues and how the resultant courses and agricultural resources could be developed.

Students enrolling in agricultural courses in vocational education and training (VET) give diverse reasons for their participation. Students studying agriculture in a VET context have certain expectations of the outcomes of their courses of study: enhanced employment prospects, certification at a particular level, a broadening of knowledge of production and management, and fulfilment of long-held ambitions to 'be a farmer'. The decision to study on a part-time basis is one taken by students after a great deal of consideration. The competing pressures of work, family life and other pursuits must be weighed up, since a commitment to evening classes and weekend practical activities means a reduction in the participation of other activities. The competition from other distractions remains throughout the duration of part-time study and students are prone to vote with their feet and discontinue study if it fails to fulfil their needs. Distractions include work commitments, activities taking place on their farms, family duties and animal interests, such as attending shows. Students of agriculture at TAFE (technical and further education) on a part-time basis need to engage with their coursework and with their teachers at the commencement of their study and remain engaged to fulfil the specific goals that they have set for themselves.

Declining numbers of enrolled students in a course impact on course structure and curricula and may lead to a reallocation of resources in a teaching section and a change in the delivery of courses. This research has been undertaken as an attempt to better understand the decline in part-time student enrolments and make agriculture at Landisdale College more attractive to potential students. There may be a variety of factors associated with the recent decline in enrolments, of which learning preferences are one element, but this study focuses on learning preferences. Gaining an insight into the way that students prefer to study may also have positive implications for other courses in the teaching section. It should be noted that in this specific case a number of other factors may have influenced the change in part-time student enrolments and the effect of these factors, such as increased pressure on land for housing in the area and other changes in local land use patterns, may form the basis for further study.

For this study it would have been ideal to examine the preferences of potential future students, but this was not achievable within the time frame, so the scope has been limited to examining the learning preferences of current and immediate past students. Students studying agriculture part-

¹ The campus and college referred to in this report will be known as Landisdale College. This college is located on the urban-rural interface of a large Australian city. The area surrounding the college was once a major producer of fresh foodstuffs for the city markets but in the last 20 years it has undergone a change which has seen productive farming land converted to residential use. Landisdale College reflects the issues being managed by many colleges in Australia who provide training in agricultural areas. Improved primary industry production is being achieved with an ever-decreasing workforce as specialist techniques and mechanised processes displace traditional local farming activity. In many cases colleges such as Landisdale that were once situated within farming areas now find themselves as part of the outer urban development of capital cities.

time at Landisdale have in the past had few formal opportunities to express their views or wishes. No regular survey of student satisfaction in the section has occurred, apart from that undertaken by external researchers for the NCVET Student Outcomes Survey.

New learning delivery strategies, especially those involving web-based interaction, have been available for a number of years. Apart from the use of email for contact and distribution, little use is made of the internet for teaching purposes. There is great scope for development of alternative delivery methods in the framework of the course.

In addition to exploring the perceptions of students in the current course, a survey of the teaching staff in the section was undertaken. The survey was limited to those teachers involved in the delivery of courses to part-time agriculture students.

Background

The effective interaction of secondary education, vocational education and training, and tertiary education and research with continued examination of skills needs is required for strong rural development. (Cornish 2005)

Farmers play an important role in the economic and social development of Australia. The provision of food and fibre for domestic consumption and the export income earned from the sale of farm produce contribute significantly to the nation's economic wellbeing. The education of farmers and people intent on becoming farmers has become an important key to the sustainability of the agricultural sector.

There is a relative shortage of current information and material directly related to the topic of part-time students studying agriculture at TAFE. This review covers the broader aspects of agricultural education to highlight the relevance of previous studies to part-time study of agriculture at Landisdale College. Particular emphasis was placed on the engagement of farmers in the learning process, the role of VET providers, online educational opportunities for farmers and the role of agricultural extension providers.

Farm businesses make decisions on production and management issues based on agronomic, financial and environmental information. Those businesses with employees who had attained the greatest level of education were shown by Kilpatrick et al. (2000) to be the most profitable, with a link between participation in training activities and farm profit being established.

There is interest from the federal government and related bodies in the level of skills in the broad rural workforce in Australia. Cornish (2005) reported the changes to skills training that had occurred in the previous decade and the links between changing workforce pressures and the rural communities in which they lived.

There has been a change in the way training and skills improvement has been developed and delivered, as competency based training has come to the fore. Extensive changes have been made to the design and delivery of training and education throughout Australia. Skills development, workplace readiness and delivery of training have changed dramatically.

(Cornish 2005, p.26)

A report by the Agriculture and Food Policy Reference Group (2006), *Creating our future*, discussed the wider benefits for farmers participating in training. These benefits are related to interaction with other farmers and technical experts, as well as the acquisition of new skills and knowledge. A broad range of courses is necessary to cover the varied training needs of individual farmers. Providers of rural training have begun to respond to the need for both formal and informal learning opportunities, and for short courses as well as longer training. 'There should also be greater official recognition of training, allowing it to contribute more to the gaining of formal qualifications and to form the basis of other learning activities in the future' (Agriculture and Food Policy Reference Group 2006, p.106).

This report recommends greater coordination between government, rural industries and training providers, with a view to meeting the needs of specific industry sectors. Government support for training programs, such as the Farm Bis scheme or its equivalent FarmReady, needs to be

continued in all states. This scheme provides funding for individuals to undertake short study courses in areas of farm production, business and management in order to ‘develop strategies to adapt and respond to the impacts of climate change, increasing self reliance and preparedness’ (Industry and Investment NSW 2010, p.3).

Kilpatrick et al. (2000) note that the drivers of farm management decisions have changed in more recent times to reflect some of the greater changes in society. An increase in public awareness of environmental issues such as land and water management has meant on-farm decisions are more closely scrutinised and measured against environmental best practice. Adaptability and responsiveness to market changes are characteristics of modern Australian farmers. As Australian farmers have become more exposed to international markets and currency fluctuations, their responses to changing farming and economic conditions have to be accurate and well advised. Broader educational opportunities for farmers can result in better decision-making on the farm.

VET courses delivered through TAFE are readily accessible and widely located throughout Australia. However, the formal nature of course structure and delivery may not be compatible with the learning needs of farmers. Kilpatrick et al. (2000, p.2) outline the desirable features of farmer education as ‘interactive, relevant, delivered to groups who feel a sense of commonality and presented by credible facilitators in short sessions at convenient times and locations’.

An Australian Bureau of Agricultural Research Economics (ABARE) survey (2006) of sheep and beef producers found that, in relation to attending one training course in farm management or technical skills:

- ✧ 30% of producers are not willing to spend any time.
- ✧ 27% of producers are willing to spend only two days.
- ✧ 17% of producers are willing to spend five days or more in total.

These findings support the view that for training to be effective it must be delivered with reference to the needs of the client group.

Bambray, Dunn and Lamont (1997) summarised the five key preferences of farmers in training delivery as local delivery, short courses, relevant training and hands-on training, apart from some areas of management training where case-study methods are used.

The House of Representatives Standing Committee on Agriculture, Fisheries and Forestry’s (2007) report *Skills: rural Australia’s needs* recommended that governments and the training providers in VET and the university sector develop pathways for the articulation of VET to university in rural skills training and education. This has the potential to increase enrolments at TAFE if it is seen by students as a clear path to tertiary study with credit from TAFE studies.

The delivery of online courses has become a feature of many education providers, with aspects of many units of study available to students. Higher education courses use features of the internet as a repository of course material, an information exchange and a conduit through which assignments and coursework are submitted. Students located in rural and remote areas can have access to similar units of study to those who live in urban areas. In the VET sector many units at varying levels are available online and submission of assignments and work-based evidence such as video footage is now possible.

The use of online learning in agricultural education has not been studied in depth in recent years. Groves (1999) found many possibilities for online agricultural courses, but the relevance of some of the methods of use described is now seen to be limited. Teaching competency-based units, which can include many practical skills, could involve a range of complicated techniques. Provision of high-speed broadband networks would be required to enable streaming of video footage. While the use of computers is widespread in farming industries, there is not as clear a connection between agriculture and computer-based delivery as there is with units in information technology courses.

One of the four principal methods of information transfer in rural industries has been agricultural extension. Marsh and Pannell (1999, p.1) summarise extension as including 'public and private sector activities relating to technology transfer, education, attitude change, human resource development and dissemination and collection of information'. Historically, the traditional key supplier of extension services for agriculture has been the Department of Agriculture or its equivalent in each state. Changes in policies have led to this service no longer being supplied by government. Private enterprise has assumed this important role on a fee-for-service basis, with a range of field days, seminars and field trials being conducted either on the farm or on research farms. Private consultants now play the role once held by departmental advisory officers.

Kilpatrick and Millar (2006) investigated the links between VET training and extension, finding scope for improvement in alignment. They recommended that the providers of extension courses deliver training more closely mapped to units of competency in the training package (now AHC 10 for Agriculture, Horticulture and Conservation and Land Management). Providers of VET training were encouraged to deliver courses of length and content attractive to agricultural practitioners. Industry-supported field days and seminars involving VET providers, private industry, extension officers and farmers could be one method of achieving this outcome. Closer links between providers of education and farmers could lead to greater respect for the desires of clients in designing training courses.

Capacity building in rural communities, according to Macadam et al. (2004), is a key component in the education of farmers and in helping them in the process of adapting to change. Part-time agriculture students take some skills learnt during their TAFE studies back into the communities in which their farms are located, and change management is studied in certificate IV and diploma courses. Resilience within individuals and their community can be enhanced by increasing the ability to adapt to changing circumstances.

Coutts and Coutts (2003) assert that, in addition to the education available from vocational education and training and extension sources, an effective community will provide informal training and support to individuals and groups. 'Mentoring, self-directed learning, experiential learning and other personal and community growth processes are constantly at work within communities' (Coutts & Coutts 2003, p.2). The blending of formal and informal training opportunities is seen as a complementary process for the benefit of the community. Coutts and Roberts (2007) outline the need for providers of extension training to closely align their courses with VET outcomes and provide a clear set of guidelines to facilitate the development and delivery of these courses.

Aslin, Giesecke and Mazur (2006) undertook a comprehensive study of surveys covering farmers' participation in capacity-building activities. Their findings support the views of Kilpatrick and Millar (2006) and the Australian Bureau of Agricultural Research Economics (2006) in demonstrating the preference for short courses and workshops. Activities which minimised the time spent away from the farm were favoured, along with those undertaken at a low cost. Recognition of less formal learning processes and the provision of opportunities for these activities by providers could lead to greater farmer participation.

Table 1 indicates the level of educational achievement in agriculture and related industries compared with all industries. This table highlights the high percentage of those with no post-school qualifications in agriculture compared with all industries and the relatively low levels of education within agricultural occupations at diploma level and above. The training areas offered by VET providers cover certificate I to advanced diploma, and agriculture totals 18.3% in these courses compared with 23.5% in all industries. This indicates scope for an increase in VET agricultural education qualification completion.

Table 1 Qualification level: agriculture and related industries versus all industries, 2003–04

Qualification	Agriculture	All industries
	%	%
No post-school qualifications	73.2	56.2
Certificates I and II	1.3	0.9
Certificates III and IV	11.6	15.3
Diploma/adv. diploma	5.4	7.3
Bachelor degree or above	8.5	20.1
Total	100.0	100.0

Source: Monash Centre for Policy Studies (2004, cited in Department of Education, Science and Training 2006).

In summary, agricultural training is often frustrated by distance and historical patterns of informal learning. Research indicates that formal training has great benefits for the industry but needs a close relationship between employers, trainers and government schemes to blend formal and informal approaches and ensure delivery is timely and convenient in terms of industry needs. While formal skills development builds capacity, it is most successful where it is linked to realistic farming situations and the generation of farm profits. Increasingly, environmental issues and international trade need to be accounted for within the learning experiences. Online activity can overcome the tyranny of distance and offer delivery of knowledge at diverse places at the right time.

Education and training of farmers

The education of Australian farmers has traditionally had four components. The basic level consists of unstructured on-the-job training; the second level is technology transfer or extension training provided by state government departments and private industry; the third level is training in the VET sector (TAFE NSW or its equivalent) and the upper level is university study.

Traditionally, the education of farmers has involved a large component of informal training at the side of an experienced instructor, often a parent, relative or employer. There has been an increasing trend for VET providers, including TAFE NSW, to recognise this informal learning through recognition of prior learning (RPL) or recognition of current competencies (RCC). The formal educational opportunities of the instructing farmer were often limited to early high school levels, with only a relatively small number attending farming colleges.

On-farm training was supplemented by field officers from state departments of agriculture or related disciplines such as soil conservation services. Training could also be accessed through sources such as machinery dealers after the purchase of a new tractor or implement.

Agricultural education through TAFE has been available throughout Australia since the middle of the last century. Traditional areas of farmer education included wool classing, shearing, farrier trades and dairy farmer training. The regulatory requirements of modern farm production mean that training is now undertaken in farm chemical use, occupational health and safety on farms and licensing of equipment operators such as forklift and front-end loader operators. Certificate-level training in agriculture in New South Wales has been offered at many centres since the early 1970s.

University-level agriculture graduates who take on management roles in farming are often employed by corporate farm businesses or large family farm units. University graduates continue into areas of employment such as research and development and education and extension roles within government departments.

Certificates II, III, IV and Diploma in Agriculture

Students enrolled in certificates II and III undertake competency-based study in units at farm worker/leading hand level. These units have a greater emphasis placed on the practical skills than units at certificate IV or diploma level. Farm managers and supervisors undertake study in these higher-level courses. A clear difference emerges between the delivery of courses: more practical activities in the lower-level courses and more theoretical and assignment-based coursework in the certificate IV and diploma courses.

The delivery of skills-based training has had a higher proportion of face-to-face teaching, principally to ensure transfer of knowledge and skills to a group of students, than for assessment of competency against a standard. In some of the topic areas such as animal handling, tractor operation and farm fencing, only the background information can be delivered by distance learning, as the assessment of competency is difficult to complete by means other than observation and engagement of the learner. Demonstration of techniques and skills, and the ensuing assessment must be conducted in situ on a farm site. Units studied in this manner are popular due to the involvement in hands-on activities and the shared experience of the learners and the teachers.

Agricultural qualifications reflect the usual trends within vocational education and training and, as students progress through their chosen courses and on to higher-level courses, the time spent in these practical activities decreases. Planning, organising and managing aspects of production become the focus of the units studied. Development of management plans and implementation of production strategies form the basis of assessments for these units, and they can be based upon particular case-study properties or situations. The practical aspects of agriculture become secondary to the managing of production processes. It is therefore easier to manage the higher-level curriculum and assessment process within college and simulated environments. However, the hands-on practical nature of the entry-level qualification requires a greater emphasis on practical experiences.

Agriculture at Landisdale College

Landisdale College is situated on over 50 hectares (120 acres) of land adjoining a consolidated university campus. It occupies land that was once the dairy farm of an iconic educational institution established in 1891 and is now subsumed into a broader university context.

The agriculture section at Landisdale College consists of one head teacher, two full-time teachers and up to ten part-time teachers. Other sections at the college include horticulture, horse industry studies, animal care, information technology, business studies and general education. In terms of the students and programs delivered, agriculture is smaller than the first of the three sections listed and comparable in student numbers with the other three sections. Full-time enrolments in agriculture courses in most years are about 50 students (20 hours per week and above) and around 150 part-time students. An additional 200 students are trained each year in short courses of one to three days.

Agricultural education at Landisdale College has been based on a traditional classroom/practical approach, whereby information covered in classroom sessions (at night through the week) has been consolidated with practical hands-on follow-up sessions (principally weekend day sessions). Dissemination of learning materials in three-hour night classes has little appeal for groups of students who do not live within easy driving distance from the college. Generally speaking, if travelling time exceeds learning time, then study is less likely to be undertaken.

Several factors may have impacted on the number of enrolled students. Since the college has now been operating at Landisdale for 16 years, many local students who could have benefited from agricultural courses have already been through the programs of study. However, since the late 1990s, Landisdale College has become the only provider of part-time face-to-face agricultural training in and around the region as other colleges terminated their agricultural course. In 2003 the

college cattle herd and sheep flock were dispersed, reducing the hands-on experiences for students. In addition the pressure of the continued drought through much of New South Wales has diminished the opportunities of industry relationships with active local farms.

Current part-time students at Landisdale College, despite varied social and educational backgrounds, tend to fit into two groups. The first is characterised by ownership of a farm unit (from 25 hectares to 250 hectares) within four hours drive of a major city. These people may or may not wish to take up farming full-time, but each takes a business approach to farm production. Their access to weekend practical sessions related to TAFE activities is limited by the need to ensure their farm, livestock and plants are functioning well. This group of students validates their skills training through on-farm activities.

The second group is made up of students who do not own their own farm. They may have limited access to farms through family or friends but the development of applied skills is restricted. These students rely upon the cooperation between TAFE and practising farmers for the provision of learning opportunities and the practice and validation of skills. Many students in this group are working towards future ownership of a farm. Other students in this group undertake study to further their employment in the agriculture sector as farm supervisors, rural retailers and field officers for government departments and statutory bodies, such as the local Livestock Health and Pest Authority.

Some historical perspective

The agriculture section at Landisdale College has used a mixture of on- and off-site 'hands-on' training for students since it was established in 1993. Students have undertaken cattle handling activities on properties in the local district and further afield, as well as being involved in the management of animals at the college until 2003 when the herd was dispersed.

Animal-based units such as those associated with cattle and sheep management have continued to be delivered at the college since 2004. There are 13 cooperating farms that are available for use for cattle-handling instruction, and sheep handling is principally undertaken in facilities located at an adjacent university site. Development of suitable programs, management of on-farm activities and coordination of site visits have involved considerable coordination time for teachers involved in course delivery. The organisation of farm visits and provision of a suitable range of activities to be conducted at each site and for each specific group of students are major issues in terms of managing the curriculum and assessments processes. Coordinating the wide range of on-farm facilities and their function, ensuring access at suitable times, and providing a safe learning environment have become key features of teaching planning. The maintenance of college-farm relationships is a vital activity in terms of student delivery.

The coordination of the workplace experiences of students has increased as the work associated with maintaining on-site herds has disappeared. In addition, some significant contacts with industry practitioners and commercial interests have been reduced due to the absence of livestock on-site as a focus for industry-centred programs. These include links with local breeders, representative groups such as the Australian Red Poll Cattle Breeders Incorporated, local rural suppliers and the local Livestock Health and Pest Authority (formerly the Rural Lands Protection Board). The college beef cattle herd was used for three years as a sentinel herd by the board's veterinarian in establishing the presence of livestock diseases spread by insects. While the college is able to provide a diverse program of placement experiences at local farms and use the farm bases of some students, there are some relationships that have been lost since the college has not maintained on-site farm animals.

Research methodology

Background to method of research

As a novice researcher I sought information on conducting this project from a range of informed personnel and literature. The underlying desire driving this study was to involve a current group of part-time students as closely as I could with the research, as these were the stakeholder group who had the most to gain from this exploration, in terms of attracting and retaining students through improved learning methods. One paradox in this research project is that it is impossible to glean information from the most important group of stakeholders, potential students, about their preferences for study, as we are unable to define and track a future cohort within the time frame for this project. The current students, the most accessible cohort, will be used in this study to offer their perceptions about their experiences, which will contribute to improving the path for future students.

After discussion with my appointed mentor, Professor Paul Hager from the University of Technology Sydney (UTS), it was agreed that the current students would provide a focus group (a 'narrow avenue') to determine areas of concern in relation to their study and from this, questions for a broader survey could be developed. The survey would be sent to all current students and immediate past students (2005–08). The study would therefore employ a mixed method approach (Cresswell 2009), beginning with the collection of qualitative data, which would then be used to construct a questionnaire to gather the broader quantitative information from the wider cohort of students.

The focus group

A focus group of eight current part-time students was conducted on 12 August 2009. Bell's *Doing your research project* (2005) informed the basic conduct of the focus group. These students were selected to be purposefully representative of their classmates in terms of study length, age and gender, and their desire to be active in reviewing the course learning methods. It was agreed that I would keep notes rather than record the session and would provide a summary of the discussion for verification by the participants. I provided the group with an outline of what I thought would be topics for discussion but indicated that there was no set agenda. The time allocated for the session was 50 minutes, but it actually ran for 80 minutes at the request of the students, as discussion was robust, broad and covered topics I had not expected. The depth of feeling and commitment these students had for their studies became apparent throughout the meeting. The summary of the focus group meeting is attached in appendix A.

Despite my being clear about the aim of the study and the broad area for exploration, I attempted to encourage the students to adopt ownership of the project. Emerging ideas and subtle changes of direction within the project have been represented to this group for discussion and validation, with some provisions made for their amendments. Directly after the focus group meeting, I formulated questions from the major topics they highlighted for use in the questionnaire and used their reflective feedback to modify the questions.

Insights from Bell (2005) informed the development of the survey instrument. The general questions were further refined through discussions with the focus group and five key questions were selected for the survey, covering the following areas:

- ✧ the relative balance of theory classes against practical classes
- ✧ the provision of industry-supported field days
- ✧ alternative methods of delivery of course work (e.g. online classes, weekend-only classes)
- ✧ the benefit to students from maintaining a herd of livestock at Landisdale College
- ✧ the provision of refresher sessions for previously-studied topics.

Survey design

In consultation with Professor Hager, the survey was intended to be brief, easy to understand and to have answers given as tick-box choices rather than a Likert scale. This style was chosen to minimise the time required for a respondent to complete the survey, therefore maximising the number of completions. A decision was made to post the surveys rather than make them available by email so that any student without computer knowledge, basic or otherwise, would not be excluded. The survey was therefore tailored to the needs of the recipient group.

The survey was sent out to 115 current and former part-time students across the range of courses (agriculture, farming small areas, organic farming, and alpaca production) in the last week of November 2009. The surveys were sent with a stamped return envelope enclosed to encourage responses. A copy of the survey and the accompanying letter to students can be found in appendices B and C.

Another survey was sent to the four teachers in the section who were teaching or who had previously taught part-time students of agriculture. Some modifications were made to questions to allow the teachers to express their thoughts on current and future delivery options. A copy of this survey can be found in appendix D.

Survey responses

There were 41 completed student surveys and three teacher surveys returned, representing a very high level of interest in the subject. The level of response on each survey ranges widely from minimal marking of a box on each question, through to box marking and extensive written responses for each question. It can be assumed that respondents writing a detailed response to a question had stronger feelings than those who responded minimally. More than two-thirds of the respondents gave written responses to the questions.

Although the survey was intended to be anonymous, some students identified themselves on the returned surveys. Some included extra information in response to the issues about which they had particularly strong views.

The participants

Participants in this survey were current or former part-time students of agriculture-based courses run at Landisdale College. Former students were those who had been enrolled in the period 2005–08.

The pattern of study these students undertake in these courses has traditionally been a regular once-per-week classroom session (3–3.5 hours), reinforced by a practical session held every 4–6 weeks on a Saturday (6–8 hours).

From the quantitative data the respondents were 24/41 male (58.5%) and 17/41 female (41.5%), with the original mix of posted surveys at 57 male (54.3%) and 48 females (45.7%).

The following tables summarise the characteristics of the survey respondents.

Table 2 Students' years of study at Landisdale College

Years of study of respondents	Gender			
	Males		Females	
	Number	%	Number	%
Less than 1 year	3	12.5	1	5.9
1–2 years	11	45.8	11	64.7
3–4 years	7	29.2	4	23.5
More than 4 years	3	12.5	1	5.9
Total	24	100.0	17	100.0

Table 3 Age of survey respondents

Age of respondents	Gender			
	Males		Females	
	Number	%	Number	%
20–30 years old	1	4.2	1	5.9
31–40 years old	5	20.8	1	5.9
41–50 years old	6	25.0	7	41.2
More than 50 years old	11	46.0	8	47.0
Total	24	100.0	17	100.0

Table 4 Ownership and access to farm of respondents

Ownership and access to farm	Gender			
	Males		Females	
	Number	%	Number	%
Owner of farm	15	57.7	9	50.0
Access to relative's farm	6	23.1	8	44.4
Don't own/can't access farm	2	7.7	1	5.6
Access to farm at workplace	3	11.5	0	0.0
Total	26	100.0	18	100.0

Note: More than one response could be given for this question.

Survey findings

Analysis of student responses

A complete summary of survey responses can be found in appendix E. Only the first question posed in the survey, about the relative balance of theory classes against practical classes, elicited a strongly divided response. However, responses were nearly equally divided between those who felt the current balance was right and those who favoured more practical sessions. There was no link between lack of access to a farm and desiring more practical experience, as 18 of the 22 respondents favouring more practical sessions owned their own farm. Many part-time students are studying to improve their practical skills and to put them into practice on their own farm. TAFE study gives them a chance to learn skills under supervision and to make some mistakes in a supportive environment. The following written responses illustrate the respondents' interest in ensuring that theory was balanced with practical sessions:

Backing up theory with practical demonstrations.

Reinforce theory with 'doing'.

Happy with current balance.

No attempt was made in the survey to identify the level of course studied by the students. An assumption could be made that those students in certificates II and III (more practical courses) would desire more practical emphasis, and those studying higher-level courses may think the balance about right. This could be an area of investigation in any further surveys.

Students expressed a keen interest in the agriculture section conducting industry-supported field days, with 95% of respondents agreeing with the idea. They identified in their written responses a number of benefits including:

Valuable opportunities to gather information.

Access to new technology TAFE may not have.

Increases contacts with businesses in agriculture.

Previous field days held at Landisdale College have been self-funding through a fee for refreshments for all student participants and the general public. The college facilities would be used for displays, seminars and demonstrations.

A range of suggested alternative delivery methods was compiled after discussion with the focus group of part-time students. By far the most popular option with survey respondents was online notes for class work, followed by weekend-only classes and internet-based learning. Collaborative online delivery and assignment-only modules were the least popular options. Some respondents had little or no knowledge about collaborative online delivery options such as Wiki spaces and

SharePoint, so the responses need to be read with this in mind.² More effort is needed to engage and encourage students to use a SharePoint site across all courses. The lack of popularity for the assignment-only option reflects the desire of students to be part of a network of people with similar interests.

The popularity of the online notes option is perhaps an indication of both the resource-gathering nature of some students and the lack of online resources currently available to these students. The creation of suitable online resources is to be strongly considered in the agriculture section.

While respondents appeared to be generally in favour of some online delivery of their course, their written responses emphasised the need to balance this with face-to-face practical sessions:

Easy to study online for some units, but practical sessions needed as reinforcement.

People spend enough time alone with computers and mobile phones.

I favour the current set up as you could learn bricklaying online but without the practical guidance, you would be useless in the industry. I think many agriculture-based subjects are the same.

The question related to the provision of an animal herd at Landisdale College resulted in 88% of respondents agreeing that their studies would benefit from on-site access to a herd of livestock. It is not surprising that students were enthusiastic about additional learning facilities and resources. A sample of written responses follows

Yes, yes, yes!

Ridiculous **not** to have cattle on-site.

Would allow students to assess seasonal change and the effects of management decisions in a continuum.

All the facilities are on-site already and TAFE could make money from sales of livestock.

Would save a lot of time, money and resources.

The students are the stakeholders in focus in this study but they are just one of the set of stakeholders with an interest in developing the course. The teachers were also supportive of on-site farm animals but the reality is that college management would have to explore the cost–benefit equation between increasing enrolments and retention against the additional resource expenditure and responsibility of on-site animals.

The possibility of attending a refresher course to hone skills previously learnt at the college met with favour from the vast majority of respondents. The few ‘no’ and ‘don’t know’ respondents noted that they could contact the teacher to keep up to date. Fewer written responses were received for this question than the other questions. Some students undertake study prior to the purchase of a property and a number expressed a view that it could be an update of skills and introduction to new techniques at the same time, as the following written responses illustrate:

Opportunities would enhance confidence and safety.

Be aware of technological and educational developments.

Activities such as refresher courses and field days can provide valuable college–student–industry–public interaction. A broader range of short courses aligned to skills updates would provide a further avenue of students and potential income.

² Wiki spaces allow students to discuss particular problems and build up information about topics by adding to or amending information already posted. A SharePoint site is a web-based application which can be set up for each class as a repository of course notes and links (managed by the teacher), a class forum (where students log on to access the information and to send class-related messages to the teacher or to other students) and a site for the teacher or students to upload files or photographs. Students can submit questions to the forum looking for answers from the teacher or other students. Assignments can also be submitted through the SharePoint site.

The teacher survey responses

Three of the four teachers returned their surveys. The questions focused on how the section was responding to the needs of students and what teachers considered could be done to increase the attraction of the courses. All teachers were in favour of more emphasis on practical sessions, with one response indicating that repeating practical experiences was a key to good student learning. Another response indicated that teachers need to be perceptive enough to judge the level of knowledge uptake within a group of students and to adjust the course delivery to respond to different student needs.

The idea of interaction with private industry through field days was seen as a positive move. An integrated approach to one-day exhibitions and displays of new technology with Industry and Investment NSW (formerly NSW Department of Primary Industry), local rural resellers and industry groups was suggested.

The teachers surveyed accurately reflected the student responses to alternative methods of delivery of course materials, with a similar range of responses. One teacher saw their role changing to one of coordinator of students and information, with a collaborative session, online or face to face, facilitated by the teacher. It was suggested that a more flexible approach to the conduct of classes, both in the timing and the content, was needed.

The benefit of having a herd of animals on-site was reinforced by the teachers, with an emphasis on the responsibility for animal management being part of the role of a farm worker or owner, which can be simulated for students before they are placed in a real situation. Two respondents noted that the teaching of yearly production cycles could be better achieved with a number of animals resident at the college.

Refresher sessions were seen to be another opportunity to engage with students, private industry, extension providers and the adjacent university and its students. A committee of people representing the different interests could be formed to promote this idea.

When asked if the agriculture section was providing the best opportunities for our students, two teachers selected 'No'. These respondents pointed out that the limited resources were restricting the educational possibilities and that the section could not replicate what took place on a commercial farm. The one positive respondent indicated that, while resources were limited, the staff did provide a good environment for the students to learn.

One respondent noted that there were possibilities in the near future for the development of resources linked to sustainable energy and therefore a 'greener' image. If units or courses can be developed based on the use, installation and maintenance of the new technologies such as solar and wind power on farms, this could lead to a new avenue of potential students.

In summary, the teaching staff were generally positive about embracing the changes in course delivery that might be needed to ensure the section's future. From the perspective of the teachers surveyed, they felt they had the capacity to provide a more flexible approach to part-time student education.

The challenges for agriculture at Landisdale College

This survey was a vehicle to help provide some insights into the learning needs of part-time students at Landisdale College. The challenge to the agriculture teaching section is to respond to the survey findings and provide the pattern and style of agricultural education desired by the students. Changes in course delivery need to be considered in order to attract suitable numbers of part-time students, which will enable the courses to continue, and for students to be engaged with their learning until they choose to exit any of the courses.

From the information gathered in this small-scale survey, a number of different approaches to the delivery of part-time agriculture courses might be considered. These are:

- ✧ weekend classes
- ✧ video stories
- ✧ interactive classroom
- ✧ new patterns of attendance
- ✧ access to resources online.

Information about these topics is included in appendix F.

Conclusion

This research was undertaken to gain a better understanding of the learning preferences of part-time students of agriculture at Landisdale College. A focus group was used to develop questions for a broader survey and responses to this survey were received from 41 current and immediate past students. Questions in the survey referred to areas of study such as the balance of theory and practical sessions in courses, the provision of industry-supported field days and refresher courses, a range of methods of delivery to be considered as alternatives to the current teaching methods and the benefit to students' learning outcomes from the re-establishment of a herd of cattle and sheep at the college. The analysis of returned surveys indicated overwhelming support for the conduct of field days, the re-introduction of a herd of livestock as a teaching tool, and provision of refresher courses for returning students. Respondents were almost equally divided between maintaining the current balance of theory to practical and desiring more practical instruction. Respondents indicated a strong desire for more online support materials and moderate support for an increase in computer-based learning.

Interpretation and consideration of the survey responses led me to the following conclusions:

- ✧ There is clear support from students for industry-supported field days to be held regularly at Landisdale College. These sessions could encourage closer links with private industry, practising farmers, providers of agricultural extension services, students of agriculture and related study areas from the nearby university and the general public with an interest in agriculture. These field days would need to reflect the topics currently being studied by students, which is not necessarily the case with the College Open Day currently held in September each year. The validity and relevance of the field days can be strengthened by aligning the topics to be covered with units from the Agriculture, Horticulture and Conservation and Land Management Training Package (AHC 10).
- ✧ The agriculture teaching section at Landisdale College could adopt a range of alternative methods of delivery for its part-time courses. Wider use of the internet as a supporting platform for study should be undertaken, and each commencing group of students should be quizzed on their preferences for different delivery methods. The use of SharePoint sites for each class, online access to resources, student forums and links to further information are necessary for a more efficient use of students' available time. Consideration needs to be given to setting up online sessions in a virtual classroom for specific events or for using information from guest lecturers, farm managers and industry experts. Further training of staff in the use of these techniques may need to be undertaken. In addition, training sessions for students to familiarise them in the use of these technologies will need to occur in the first few weeks of study.
- ✧ Teaching staff could be encouraged to undertake more training in the use of video technologies to enable the presentation of information from farms in areas not easily accessed (out of the local area, interstate and from international sources). The capture of images and information from different farms, either by these teachers or accessed from another source, could form the basis of a video resource for use across a range of topic areas and a range of courses. If the video resources were uploaded to the internet, then they could provide learning opportunities for students at any time outside class.
- ✧ Consideration could be given to exploring a cost–benefit analysis of managing some farm animals on-site. This cost–benefit analysis would have to be framed in terms of generating an expanded intake and therefore income from courses. While it is evident from the survey that

over 85% of the students are farm-based or have access to farms, this does not decrease their desire for more animal interaction on-site, and indeed may well be driven by this being their natural environment. Student learning environments have to be developed with both the needs of student stakeholders and management in mind. There have been major changes in agriculture and farming in the past decade, so reviewing the most appropriate and cost-effective environment for agricultural students might be timely. Any option to increase student attraction and engagement may be worthy of review. The survey responses suggest it is something the students find very valuable and may help to attract additional student numbers. Management of some livestock on a leased, shared or permanent basis would give students the optimum training for managing their own animals or those of an employer. Cycles of production, breeding management, nutrition and animal welfare considerations can be best taught with ongoing access to the same breeding animals. The use of cooperating farms needs to be continued in order to broaden the level of students' understanding of different animals and different environments and they should continue to play a role in this initiative. The development of a management and financial plan for the on-site livestock would enrich units of study for part-time students.

- ✧ Consideration might be given to customising the attendance pattern of each course at the beginning of each semester. Broad guidelines for attendance could be given in any support documents prior to enrolment and the actual attendance plan could be developed after discussion with the group of students in the first class session. This would balance the expectations of the students with those of the teaching section. Any course with a planned significant change to the class session/practical session balance would need to be advertised as such before enrolment. Courses that might be offered as weekend-only attendance or those with a significant online component would fit into this group.

The challenge for the agriculture section will be to implement these recommendations to provide for the needs of the part-time student group and to promote these changes to the courses available for study at Landisdale College.

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Appendix A – Summary of focus group

FOCUS GROUP MEETING: ISSUES ARISING

WEDNESDAY 12TH August 2009

The following information is a representation of responses of a group of eight part-time agriculture students at Landisdale College in August 2009. These students have been attending on a part-time basis for at least three years and up to ten years (on and off) in one case. They are familiar with the workings of TAFE and of Landisdale College specifically. Four students own farms ranging from 40 hectares to 200 hectares.

This focus group was organised to allow these students to outline their feelings and concerns and give feedback about the way classes are currently delivered, and to develop a series of pertinent questions for a broader survey of current and past students (intended to be conducted in September 2009).

The points following are in the order they were raised rather than any other order.

Issues arising from the discussion

- ✧ Students are short of time available for study due to family and work commitments (weeknights and weekends) and their own farm commitments (weekends).
- ✧ Information can be disseminated during class sessions by the use of photo and video footage gathered from farm visits and ‘voiced’ by the teacher or the farm owner. Discussion could be led by the teacher or students who were familiar with the farm.
- ✧ Students have been disadvantaged since the sale of the TAFE cattle herd in 2003. The ability to discuss relevant topics and follow up with inspections of animals ‘in real time’ have been lost. When the same link is made with animals on cooperating farms some of the relevance has diminished. Long-term study of a specific herd has been replaced by ‘snapshots’ of different herds at different times of the year.
- ✧ The benefit to students of hands-on practical sessions is real and long-lasting. Studies involving machinery, cropping, pastures and weeds are best delivered using practical sessions.
- ✧ The face-to-face component of course delivery is important to all students in this group. Developing a class identity and building friendships are fostered by a healthy classroom environment. Students with their own farms are able to add considerably to the education of those who don’t own farms by sharing their on-farm experiences.
- ✧ The students place a high value on the interaction they have with each other in and around the classroom.
- ✧ There is a perception among the students that the physical attendance at TAFE is closely linked to the learning experience. If students are at home doing directed study (assignments, projects) they are highly likely to be distracted by the everyday issues of their lives. An approach to teaching that involves the use of home computers by students (for example, Adobe Connect) will not be readily accepted by this current student group.

- ✧ An increase in the use of a SharePoint site with access to class notes, unit outlines, resources, references, photos, videos, as well as a communication link between students will be welcomed. While all students do not frequently (daily) use the internet they would keep tabs on updates from a SharePoint site.
- ✧ Better use could be made by the students of the resources in the college library and available online. More use can be made of computers within the classroom environment. An email listing of the class members will foster the use of computers.
- ✧ Students said they were interested in studying units or topics again some time after they had previously studied them as they gained further understanding by practising what they had learnt. Revising units of study at increasing levels of expertise was beneficial.
- ✧ There needed to be an expectation on the part of both students and the teacher that a certain freshness had to be maintained in the classroom. Learning is stimulated by new information or new ways to present familiar topics.
- ✧ Students respond to discussion on a broad range of topics in addition to the core units being studied. The idea of a forum for general discussion in a classroom is to be encouraged.
- ✧ The idea of refresher courses for practical units can be useful for returning students, especially those who may not have had the chance to practise the particular skill or technique previously studied.
- ✧ Animals are the 'backbone' of the study of practical agriculture at Landisdale College. A small herd of cattle would be a great attraction to potential students. A number of the current students commenced study when cattle were run at Landisdale and their current studies compare unfavourably with their original time at the college.
- ✧ Provision needs to be made to include regular field days as part of the learning experience for agriculture students at Landisdale College. Industry experts, departmental officers and those with a commercial involvement in agriculture could be among the participants. The broader community have previously been invited and involved in field days at the college site.

Appendix B – Covering letter for students

AGRICULTURE SURVEY PARTICIPANTS

Dear

You have been sent this short survey as you have previously studied (or are currently studying) some units of Agriculture at XXXX College.

As part of a research project through the National Centre for Vocational Education Research (NCVER), this survey of past and current students is being undertaken to assess the ability of the Agriculture section to meet the learning needs of its part-time students. Information gained from the survey will be used to help identify teaching and learning methods and course delivery arrangements that best suit part-time students.

Responses to the survey will be anonymous unless individuals wish to identify themselves. All information gathered through this survey will only be used for the scope of this survey and will not be used for any other purpose. If you would like to receive a copy of the survey outcomes and the research report you can register your interest with the researcher, Alan Woods, at the email address listed below.

Thank you in advance for your contribution to improving Agriculture courses.

Researcher

ALAN WOODS

Teacher of Agriculture,

XXXX College of TAFE

ph

mob

email alan.woods@tafensw.edu.au

Research Scholarship Information

NCVER "Building Researcher Capacity" 2009

NCVER/Victoria University/AVETRA

GUIDE TO COMPLETING THE SURVEY

This survey should take no more than 15 minutes to complete.

The following survey consists of a series of questions relating to your studies at XXXX TAFE.

Each question gives a simple option to tick, then allows you to better express yourself with a few lines of writing. Detailed answers will allow more information to be gathered, and should result in better outcomes for current and future students.

Please feel free to express your views on what you think can be done to maintain and improve the quality of agricultural education provided by the section.

This is your chance to have your say in how things can be done within the Agriculture section.

After you have completed the survey you can post it in the stamped return envelope provided in the pack.

Appendix C – Student survey

AGRICULTURE STUDENT SURVEY (November 2009)

Units in Agriculture are currently delivered with a mixture of face-to-face teaching and, where applicable, on-farm practical sessions to link theory and practice.

Do you think the balance of face-to-face and practical teaching

- should have more theory?
- should have more emphasis on practical sessions?
- is about right?

Comments _____

The Agriculture section has, in recent years, hosted a number of industry-supported field days covering topics of importance to students and the broader rural community. Topics have included livestock management, animal health and nutrition and electric fencing.

Do you see industry field days as an important component of studies in Agriculture?

- Yes
- No
- Don't know/not applicable

Comments _____

Many alternative delivery methods for teaching and learning have been developed in the last 10 years. The classroom/practical delivery model has been the main method used in Agriculture at XXXX TAFE. Are there other methods of teaching and learning that you would like to see trialled at XXXX TAFE, such as

[You may tick more than one box]

- Internet-based learning (on-line)
- Weekend-only classes
- Assignment-only modules
- Collaborative on-line delivery (Wikispaces, Sharepoint "Virtual classroom")
- On-line notes for classwork plus practical sessions
- Any other methods?

Comments _____

At present, the Agriculture section delivers training in livestock-based units of study with the assistance of a number of co-operating farms on which the practical training occurs.

Do you think that your studies in livestock would benefit from a herd/flock of livestock being run permanently at XXXX TAFE?

- Yes
- No
- Don't know/ not applicable

Comments _____

Current students have indicated that regular "refresher" sessions on previously studied topics would be useful to them. These could take the form of a practical demonstration (such as boomspray calibration, animal medication) or an update on the latest information on techniques, procedures, varieties etc.

Do you think these refresher sessions would be useful to you?

- Yes
- No
- Don't know/not applicable

Comments _____

Now, some information about you ...

Are you

- Male

- Female

Are you aged between

- 20 and 30
- 30 and 40
- 40 and 50
- 50 +

Have you studied at XXXX

- less than 1 year
- 1-2 years
- 3-4 years
- 4 years +

Do you have access to a farm?

- Your own farm
- A relative or friend's farm
- Don't own/can't access farm
- Your workplace

Comments? _____

Thank you for taking the time to complete this survey. Alan Woods

Appendix D – Teacher survey

AGRICULTURE TEACHER SURVEY (November 2009)

Units in Agriculture are currently delivered with a mixture of face-to-face teaching and, where applicable, on-farm practical sessions to link theory and practice.

Do you think the balance of face-to-face and practical teaching

- should have more theory?
- should have more emphasis on practical sessions?
- is about right?

Comments _____

The Agriculture section has, in recent years, hosted a number of industry-supported field days covering topics of importance to students and the broader rural community. Topics have included livestock management, animal health and nutrition and electric fencing.

Do you see industry field days as an important component of studies in Agriculture?

- Yes
- No
- Don't know/not applicable

Comments _____

Many alternative delivery methods for teaching and learning have been developed in the last 10 years. The classroom/practical delivery model has been the main method used in Agriculture at XXXX TAFE. Are there other methods of teaching and learning that you would like to see trialled at XXXX TAFE, such as

[You may tick more than one box]

- Internet-based learning (on-line)
- Weekend-only classes
- Assignment-only modules
- Collaborative on-line delivery (Wikispaces, Sharepoint "Virtual classroom")
- On-line notes for classwork plus practical sessions
- Any other methods?

Comments _____

At present, the Agriculture section delivers training in livestock-based units of study with the assistance of a number of co-operating farms on which the practical training occurs.

Do you think that your students would benefit from a herd/flock of livestock being run permanently at XXXX TAFE?

- Yes
- No
- Don't know/not applicable

Comments _____

Current students have indicated that regular "refresher" sessions on previously-studied topics would be useful to them. These could take the form of a practical demonstration (such as boomspray calibration, animal medication) or an update on the latest information on techniques, procedures, varieties etc.

Do you think these refresher sessions would be useful to your students?

- Yes
- No
- Don't know/not applicable

Comments _____

Do you think we are providing the best opportunities for students at XXXX TAFE?

- Yes
- No
- Don't know/not applicable

How can we change our methods to achieve better outcomes for students?

Are there other topics/projects/items/methods we can include to make studying Agriculture at XXXX more attractive and satisfying for students?

Thank you for taking the time to complete this survey. Alan Woods

Appendix E – Summary of survey responses

In answering the question:

Units in Agriculture are currently delivered with a mixture of face-to-face teaching and, where applicable, on-farm practical sessions to link theory and practice.

Do you think the balance of face-to-face and practical teaching:

✧ should have more theory?	0/41	0%
✧ should have more emphasis on practical sessions?	22/41	54%
✧ is about right?	19/41	46%

Written responses related to more emphasis on practical sessions referred to:

- ✧ backing up theory with practical demonstrations
- ✧ reinforcing theory with ‘doing’
- ✧ we can watch and listen, then do’.

Written responses related to ‘about right’ referred to:

- ✧ differences between teaching and learning styles
- ✧ depends on the subject
- ✧ happy with current balance.

In answering the question:

The Agriculture section has, in recent years, hosted a number of industry-supported field days covering topics of importance to students and the broader rural community. Topics have included livestock management, animal health and nutrition and electric fencing.

Do you see industry field days as an important component of studies in Agriculture?

✧ yes	39/41	95%
✧ no	1/41	2.5%
✧ don’t know/not applicable.	1/41	2.5%

Written responses included:

- ✧ valuable opportunities to gather information
- ✧ must be related to currently studied topics
- ✧ good way of keeping up
- ✧ access to new technology TAFE may not have
- ✧ contacts with businesses in agriculture
- ✧ broaden views and knowledge.

In answering the question:

Many alternative delivery methods for teaching and learning have been developed in the last 10 years. The classroom/practical delivery model has been the main method used in Agriculture at Landisdale TAFE. Are there other methods of teaching and learning that you would like to see trialled at Landisdale TAFE, such as:

[You may tick more than one box]

✧ internet-based learning (online)	12
✧ weekend-only classes	16
✧ assignment-only modules	3
✧ collaborative on-line delivery (Wiki spaces, SharePoint)	8
✧ online notes for class work plus practical sessions	23
✧ any other methods?	10

Students were not limited to one response for this question. The ‘other methods’ written choices were face-to-face delivery and the current mix of classroom and practical sessions.

Written responses included:

- ✧ easy to study online for some units, but practical sessions needed as reinforcement
- ✧ attendance at TAFE means I put aside that night, if at home I would find other things to do
- ✧ net-based courses good for those who can't get to TAFE
- ✧ I favour the current set up as you could learn bricklaying online but without the practical guidance, you would be useless in the industry. Many agriculture-based subjects are the same
- ✧ couldn't have studied my course if it was by any other method
- ✧ classroom/practical method allows sharing of knowledge as well as meeting new people with similar interests and needs
- ✧ weekend-only classes good for people working and for short courses
- ✧ face-to-face allows opportunity for questions to be asked
- ✧ new methods could limit travelling
- ✧ more daylight if the classes are on weekends
- ✧ a computer course for agriculture would help
- ✧ extended field trips are useful
- ✧ only have time on weekends
- ✧ can bring in farmers or teachers from other regions online for different perspective
- ✧ people spend enough time alone with computers and mobile phones.

In answering the question:

At present, the Agriculture section delivers training in livestock-based units of study with the assistance of a number of co-operating farms on which the practical training occurs.

Do you think that your studies in livestock would benefit from a herd/flock of livestock being run permanently at Landisdale TAFE?

✧ yes	36/41	88%
✧ no	1/41	2.5%
✧ don't know/not applicable.	4/41	9.5%

The responses to this question need to be read with the full understanding of the historical perspective of cattle and sheep at Landisdale College (see Background to research).

This question elicited the strongest written responses and took something of a 'common sense should prevail' approach. The five 'no' or 'don't know' respondents were from the Alpaca course, and had no expectation of alpacas being run at the college.

Written responses include:

- ✧ immediate access for reinforcement of ideas
- ✧ still retain access to other farms
- ✧ would allow students to assess seasonal change and the effects of management decisions in a continuum
- ✧ would save a lot of time, money and resources
- ✧ can see results over the period of the course
- ✧ staff could schedule procedures to suit classes
- ✧ absolutely!!
- ✧ closest to doing it on our own farm
- ✧ continuous observation, handling and treatment of the herd
- ✧ all the facilities are on-site already. TAFE could make money from sales of livestock
- ✧ yes, yes, yes!
- ✧ husbandry processes could be followed, developments watched, breeding programs devised
- ✧ more confident handling of stock
- ✧ ridiculous not to have cattle on-site
- ✧ can judge your ability to handle cattle
- ✧ can see how a farm is run
- ✧ it's a rural environment, I would expect to see livestock at Landisdale
- ✧ a more realistic proposition for future owners and farmhands
- ✧ reinforces the theory previously learnt
- ✧ gives students more hands-on learning.

In answering the question:

Current students have indicated that regular ‘refresher’ sessions on previously studied topics would be useful to them. These could take the form of a practical demonstration (such as boomspray calibration, animal medication) or an update on the latest information on techniques, procedures, varieties etc.

Do you think these refresher sessions would be useful to you?

✧ yes	38/41	92.5%
✧ no	1/41	2.5%
✧ don’t know/not applicable.	2/41	5%

The ‘no’ and ‘don’t know’ respondents noted that they could contact the teacher to keep up to date.

The written responses included:

- ✧ opportunities would enhance confidence and safety
- ✧ could be a benefit for different activities
- ✧ update knowledge and different skills
- ✧ retain what is taught and practise skills
- ✧ be aware of technological and educational developments
- ✧ a great idea.

Fewer written responses were received for this question than the other questions.

Appendix F – Different approaches to delivery of part-time courses

Weekend classes

A regular practice for student attendance is a block release system, whereby students attend sessions over a two- or three-day period. It can be supported by course materials being available to students for some time before the session, and the pre-reading and background knowledge is in place before the session. It is critical that as many students as possible attend the sessions since information would be presented only once. Some flexibility in work arrangements would be necessary for students, and they would need as much forward-notice of dates as possible.

This method of delivery reduces the potential student numbers, as those students who own their own farm generally use weekend time to work on their farm. This held true for those who live on their farm and for those whose farm is in another region of New South Wales. Organising weekend classes for students means that some would be absent due to other commitments; this was confirmed by the written responses to the related question in the survey. Conversely, this method is favoured by students who do not have their own farm.

Video stories

One alternative that could be considered involves a pre-class visit to the farm by the teacher, and the collection of images (still photographs, video footage) of salient points of the farm. The topography, an indication of the soil type, water storages, indicative animal types and facilities and improvements could be captured on disc to be shown at a later class.

One benefit of this method would be that all are likely to have some familiarity with the physical aspects of the farm before visiting, and those who did attend would only need a short introduction to find their bearings. If a video camera was used during the visit to record activities undertaken on the farm (soil sampling, plant identification, animal-handling activities), then students not attending the farm could at least see what had happened. There is a further benefit for other students, as the footage can then be viewed by different classes at a later date.

TAFE NSW has released a series of 'video stories' related to sustainable farms and vineyards. Produced by the Centre for Learning Innovation, these online stories investigate the farming practices of farmers in different parts of New South Wales through a connected series of interviews and video footage of farms, animals, farm improvements and natural features. An accompanying script, along with questions and assignment topics, allows time for students to absorb and analyse the material. Access to farm documentation (record sheets, paddock information) enables a complete picture to be drawn and kept. The information can be distributed to students via a series of resource discs held by the class teacher or in the section.

There could be an opportunity to use this method to capture information from interstate farms and from overseas. Once the images and documentation are gathered, they can be distributed and disseminated widely. If structured correctly, the material can be used across a range of subject areas and across courses. For example, it is possible to use information on river bank management in agriculture studies, as well as in conservation and land management studies.

Interactive classroom: bring the farmer/expert to the students

The use of online classroom (web-based) technologies such as Adobe Connect is now widespread in VET course delivery. Students are given an invitation to log into a website which provides a list of other participants and a virtual classroom space. This space has a simulated whiteboard upon which information can be displayed. A class is conducted with verbal input via headsets from teachers and students in addition to typed responses in a complementary chat box. Students can view information on their screen and can be involved in break-out rooms (smaller groups of students discussing topics). The supervising teacher has the ability to join in these break-out groups to direct and facilitate discussion, and may also share their own screen with all participants (a pertinent external link to a related website, for example).

Students are given an outline of the topics to be covered in future sessions and can read in advance or research work to be presented. Uploading of work to the 'classroom' can be done during the sessions, with all students then having access to work presented.

A feature of this style of delivery is being able to engage with experts; for example, a farmer whose farm is scheduled to be visited by a group could be part of the classroom procedure. The farmer could present information, via PowerPoint slides or by video images, from the farm and then lead discussion. The information presented can be retained for student access after the session and referred to for further study. It is envisaged that experts from private industry or government departments might also present information to the student group.

Rigorous preparation by the farmer and teacher would be required to enable the highest standard of presentation. Preparation by students before the class would also be required. Students undertaking comparative case studies of farms could use this method to research a number of different farms without having to travel very far.

Problems exist with internet access for students in remote areas and with the range of skills that students have with information technology. Minimum internet and computer system requirements would need to be met by students, or they would need to access their closest TAFE library to participate. Several introductory sessions may be needed to familiarise students with the use of this technology. It is reasonable to expect that there is scope for this or similar platforms for student learning.

It should be noted that this is not an exhaustive list but the three alternatives outlined are within the capabilities of the agriculture teaching section, and could be readily implemented with some additional resources and minimal funding changes.

New patterns of attendance

During the course of this research project a new group of part-time agriculture students enrolled in Certificate II in Agriculture Studies. Some students had expressed a desire to attend night classes once or twice every month (as opposed to classes once a week). Discussion and negotiation with this group led to night classes being held every third week and an associated practical class every sixth week. Fewer units of study were undertaken by the students but there was the expectation of a greater emphasis on completion of these units.

Informal discussions with students from this group of certificate II students at the completion of their first semester of study (December 2009) indicated generally positive responses. Most were happy with the educational return and all were comfortable with the balance of attendance and knowledge and skills gained. From this group eight students out of ten who first enrolled indicated that would re-enrol in a future course with a similar attendance pattern.

It is anticipated that this pattern of attendance will become more widely adopted by the agriculture section as an option for students at enrolment.

An interesting aside to the certificate II class was the enrolment of three school students in the group, each enrolling with an interested parent. School students have to get permission from their principal to undertake TAFE studies at night, on the understanding that if their school studies are affected they will withdraw from their TAFE course. Students enrolling in TAFE courses while they are still at school are highly motivated in the areas they choose to study. The pattern of attendance chosen for this new group was well suited to these students as it required fewer nights at TAFE. The units of study chosen supported some topics of the school agriculture and primary industries courses. There may be some opportunity for marketing this pattern of attendance to interested senior school students.

Access to resources online

The survey responses highlighted the desire of students to access information related to their course of study online. This can be achieved through the use of collaborative technologies such as Wiki spaces and SharePoint sites. A short introduction in a computer laboratory can make students aware of the technology and the processes involved, and this can be achieved by any of the agriculture teachers in conjunction with information technology teachers. Students are then able to access information and links to related sites at a time and place suitable to them. It is possible for students to connect with each other through these sites and they are useful for discussion, sharing of issues and information. Classes in other disciplines use sites like these to solve detailed problems and undertake case studies in greater depth than an individual student might achieve on their own. Sites are already available on TAFE networks for these applications.

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