

AN AUTHENTIC LEARNING DESIGN FOR FARM TOURS

Christopher K Morgan

Faculty of Science and Agriculture
Charles Sturt University, AUSTRALIA
cmorgan@csu.edu.au

Rod Cox

Faculty of Science and Agriculture
Charles Sturt University, AUSTRALIA
rocox@csu.edu.au

Abstract

Taking students out into the field to visit properties has been a foundation of agricultural education practice in Australian higher education. These excursions are invariably popular with students, but their enjoyment of these activities may be largely due to factors other than the achievement of learning outcomes. This paper reports on a constructivist learning design used for a farm tour whereby strategies were deliberately planned and employed to challenge students to develop their observational skills in an authentic context. Students needed to utilise their prior learning in the area and engage with each other to devise and present proposals to both academic staff and industry cooperators while on the tour.

Keywords

Authentic learning, learning designs, field excursions, agricultural education

Introduction

The utilisation of student tours to commercial farms has been a well-established feature of agricultural education courses in Australia. This has had various benefits including the provision of currency and context to the teaching program in addition to the authenticity to be gained from involving practitioners in the bridging of campus-based tuition and industry practice. Consider, for example, this feedback given by a student to one academic who led such a tour from the authors' campus:

"I enjoyed [the tour] a lot and found it very informative and educational. I learnt so much, not the least that many of my attitudes have been challenged and I have gained new insights and perspectives on many topics that I thought I clearly understood."

It is not uncommon for students to be positive about their tour experiences and, while tours undoubtedly are generally a popular component of the teaching mix, it does appear that very little has been published on the place of these activities in the educational program. While there is extensive literature advocating the benefits of field trips both scholastically and developmentally (e.g. Athman & Monroe, 2002; Nix, R.K., Ledbetter, C.E., & Fraser, B.J. 2001, Dec), unfortunately a scan of the literature fails to reveal the record of enquiry that might be expected showing scholarly investigation into the educational foundations of successful learning designs for student tours to farms.

In this paper, we will explore the reasons why academics may take their students into the field and then present a design purposefully constructed for a farm tour to gain deep learning outcomes. Finally we will offer some reflections on the effectiveness of this design.

Student Tours in Higher Education

The academic organising a tour is confronted with obstacles. For instance tours, especially those that are to go for several days, do not easily fit into university timetables. Unless they are held outside the normal semester teaching timetable such as at weekends or during semester breaks then they are likely to clash with class commitments the students have with other subjects they may be studying. However, with most students relying upon part-time employment to assist them meet their living costs (McInnis & Hartley, 2002), if they are held outside the student's regular timetable schedule then they will likely interfere with the employment situation.

There are other impediments to organising tours. Some reasons suggested anecdotally include difficulties persuading academic colleagues to participate due either to overwhelming heavy workloads or because of their concerns about possible student misbehaviour, the risk associated with unreliable weather conditions and being dependent on the availability, skills, knowledge and goodwill of others, difficulties associated with financing tours, an apprehension among academics of being challenged by practitioners, and a weakening of commitment, or indeed capability, among academics to link theory with industry practice. Regarding this latter point, it is pertinent to reflect that it is not uncommon for there to be differences in the practices espoused by academics and those used by industry (Green & Gerson, 1999).

Added to this, there are academics who question the typical learning design of tours and may consider the same learning outcomes could be achieved through the much less resource expensive alternative of judicious use of a video camera to capture features of farm operations and the academic interviewing of the farmer. Some observers may view student tours to farms as providing easy workload credits for academics who spend much of their time as passengers or overpaid bus drivers and who leave most of the work to the farmer cooperators. The same cynics could see the students welcoming tours as being an easy time for them, a social outing and a restful break from the pressures and monotony of classes.

Due to financial, time and logistical constraints and advances with educational technologies, there has been a trend towards having "virtual" field trips (Hyatt 2002). However, in their study of the advantages and disadvantages of virtual field trips, Qiu and Hubble (2002) concluded that virtual field trips can be very useful as an auxiliary to actual field trips in the areas of preparation and review but are less effective than actual field trips. The real-life experience outside the classroom is more likely to result in superior learning benefits (Ball, 1995; Goldfarb, 1998).

Academics planning excursions to farms anticipate their students will develop and gain sufficient learning benefits to justify their efforts. They will often see these occasions as opportunities for them to engage with their students under more relaxed circumstances. Chickering and Gamson (1987) highlight the importance of student-teacher social interaction and this rapport is enhanced on field trips (Spronken-Smith, 2003; Michie, 1998; Powis, 1999). Additionally, on industry tours, students learn "professionalism" from how their lecturer behaves and interacts with others in the industry (Britton, 1999).

Undoubtedly there are both good and bad tours, just as there are good and bad lectures and tutorials. As is the case with any other teaching approach, organising a good tour hinges on having a good learning design. An upshot of a well-designed tour can be richly rewarding learning experiences and developments.

Field trips, including farm tours, bridge the gap between theory and practice (Harper, 2004; Watson, Dawes, Mathieson & Shanableh, 1998). By seeing the actual situation first hand the student in the field is ideally placed to comprehend the interactions between theories, environments and humans and see that reality is not as one-dimensional as theories can imply (Britton, 1999). As a consequence Powis (1999) reports that students have amplified interest, curiosity and appreciation, together with longer-term retention, for the concepts studied. With the concepts being used in context they are more likely to be retained and appropriately applied (Duch, Allen & White, 1998; Harper-Marinick, 2001). As field trips are usually an enjoyable

experience it should not be surprising to find them pedagogically effective. They can provide an environment conducive to learning and one that enhances student motivation (Britton, 1999; Michie, 1998; Watson et al., 1998).

A Farm Tour Learning Design

The remainder of this paper will focus on a particular design for a farm tour that has been evolving over several years of presenting a livestock management subject from the authors' campus. This is a tour of three days duration with final year undergraduate farm management students who have elected to undertake higher-level studies in the livestock field. The tour is scheduled for mid-way through the semester and is preceded by a preparatory series of lectures and practical classes on campus.

The designer of this tour seeks a construct which engages students actively in their learning, a process well supported throughout educational literature including recent works such as those by Brockbank and McGill (2003) and Marquardt (2004). His aim is to have a field trip with a strong process orientation – an aspect promoted by, among others, Athman and Monroe (2002) – and which involves the nurturing and improvement of student communication, teamwork skills, observation and enquiry skills. Furthermore, he seeks to give students leadership opportunities and the challenges of managing group situations and taking responsibility for others in a real business context, all attributes which others have been able to develop on field trips (Gold et al. 1991, Watson et al., 1994). He explains these goals and his expectations regarding them contributing to group discussions in his pre-tour briefing to the students. Group discussions can lead to a greater depth of understanding of the issues and independence as students learn from each other and are not just reliant on knowledge transfer from the lecturer (Kremer & McGuiness, 1998). He wanted a design which would culminate in students utilising effective communication and teamwork skills to generate logical, creative ideas and to exhibit a capacity to apply their learning, all widely recognised as desired graduate attributes (Duch et al., 1998; Kremer & McGuiness, 1998; McIlveen, Greenan & Humphreys, 1997). The learning design he has developed for the tour requires students to pursue, collect, analyse, synthesise and evaluate information – a process consistent with the building of the above higher order skills (Campbell & Piccinin, 1999; McKinney, 1998).

Assessment is viewed as a keystone of the learning design and there is a realisation, as documented by Issacs (2002), that students participate in group tasks more energetically if it forms part of their assessment. It is also seen that, as promoted by Healey and Addis (2004), if self and peer assessment can become part of the learning process then skills of autonomy, judgement and self-awareness can develop. There is extensive literature on the assessment of group tasks but generally they advocate a combination of tutor and self/peer assessment and possibly independent judges (Issacs, 2002; Spronken-Smith, 2003). This is the structure that is employed. The following paragraphs detail the most recent tour presentation using this design.

The tour was constructed to schedule the arrival of the bus at the property to be investigated late in the day. Students had dinner then spent about two hours with the farm manager and key farm staff who gave an overview explaining some background factors about the business [eg brief history of the property, broad details of current enterprises such as size of herd, business structure, organisation of staff and their responsibilities]. A key element of the learning design was that the hosts were instructed to give no details in their presentation about three areas that the students needed to prepare for assessment purposes. Each of the thirty students had been allocated to a group of six and charged with working collaboratively to construct three items – their group's proposed livestock management calendar for the property being visited, appropriate product specifications for the different livestock enterprises on the property, and a marketing strategy for those products. The students were expected to be able to develop these items through a combination of group expertise, their visual assessment of the property being examined and its livestock, an understanding of other related factors about the property gained from property staff,

knowledge gained from preparatory class work, through other case studies they encountered and through their development and learning in earlier livestock subjects studied.

Once the initial presentations were concluded the students were given the opportunity to ask questions to help them better understand the business environment but were not able to seek details of the current management calendar, product specifications or marketing strategies used. Next morning students, staff and host toured the property together on the bus to see animals grazing or else see them being worked in the yards. Here the learning design involved the farm manager being instructed by the staff not to volunteer any information on the livestock being viewed. Instead, the tour leader provoked the students' observational skills with questions such as "How old do you think those calves are?", "What do you estimate is the body weight of those cattle?", and "When do you think those cows were joined?". At this time the academics and the cooperating farm staff deliberately refrained from making any comment as to the accuracy or otherwise of the responses students made to such questions. The students did, however, have the opportunity to quiz the farm staff within the parameters that had been set.

Following this, the students worked on their tasks in their groups. The groups were well separated from each other and the academics, in conjunction with the cooperating farm staff, acted as itinerant facilitators for all groups. This is a design sympathetic to the views of Schön (1991) who advocated that professional practitioners are often faced with conflicting and unique problems whereby they need to "think on their feet" using a collection of theories, processes and experiences. The ability of an experienced professional to deal with this situation is termed "reflection-in-action" and the environment in which this potential is cultivated as "reflective practicum". Reflective practicum is where students learn by "doing" in interaction with someone who is not an authoritarian or expert but a facilitator or coach (Green & Gerson, 1999; Smith, 2001).

The students worked in their groups for 2-3 hours including over their lunch, then orally presented their findings as a group to an audience comprising the academic staff on the tour, the farm manager and cooperating farm staff. The first group to present was the one that was first to indicate consensus had been reached and they were ready to present. While this group was presenting the other student groups remained separated from each other and continued with their preparations. The students were expected to share the oral presentation duties among themselves and they made their own determinations as to how they would do this. It transpired that they divided the group presentation into different segments, assigned each member particular responsibilities, and once each student made his or her presentation the others provided supplementary commentary as they felt appropriate. During the presentation, each student was asked at least two individual questions but others in the group were welcome to add to the response of the individual respondent.

Assessment of the group and of individuals was undertaken at the conclusion of the group's presentation. This involved a mix of peer assessment by the students as well as the academics and farm manager acting as assessors. The model used for this was based on that described by Healy and Addis (2004). With this, each student anonymously rates the performance of each of their group members on a Likert scale against various criteria that reflect their contribution to the whole group performance (e.g. commitment to the task, degree of analysis provided). From this a weighting for each student against the group average peer-reviewed score is determined and this is applied against the group mark to determine the final mark for each individual group member. The group mark is determined by the tour staff and cooperating farm staff. For any student to score well they must ensure their group scores highly from the staff and the farm manager [as this is the base from which their individual mark is determined] as well as impress their other group members regarding their personal contribution to the group's collective effort [as this supplies the factor which is applied to the group mark to determine their individual score].

A general debriefing occurred once all groups had presented and been assessed. All participants were brought together and the farm manager then explained how they go about the various tasks together with their reasoning. Revealed at this point was the actual management calendar, product

specifications and marketing strategies. In doing this the farm manager reflected on points made by each group and explained their strengths and weaknesses and why or why not they might follow through on the various student suggestions [eg “that is a valid observation but we cannot implement your proposal at this time because of financial constraints”].

The same process was then repeated at each of the two properties subsequently visited on the tour. For each subsequent visit, the tour leader changed the group membership.

Evaluating the Tour

A measure of the effectiveness of this design has been obtained from a combination of student subject evaluation questionnaires completed anonymously approximately one month following the tour and student focus group interviews conducted while on tour. All indicate a strong perception among the students that the design employed was a powerful and successful platform for deep learning.

The ratings given in the questionnaires revealed a very high level of satisfaction with the subject, its relevance to their degree and the teaching approach employed. It was clear from the additional comments made by students that they valued the involvement of industry and the authentic case studies they encountered on tour, the skills they had to develop to meet the assessment requirements of the tour, and the managerial decision-making practice they were given. These perceptions by the students were consistent with the comments they made in their focus group sessions. From the perspective of the structure of the tour as a learning design, the following two student comments were particularly pertinent:

“This process challenges us like no other. I wonder how a group of experienced cattle producers might perform under the same conditions we have been put under” and “This tour approach makes us not to be so reliant on our lecturers, we were forced to develop our enquiry skills and observation skills”

Not only have students been very supportive of such a design but the cooperating farmers have responded likewise. The experience for the academic leading this tour has been that the farm managers have been so positive that they have contacted him to request future tours come to their properties, as they feel they gain considerably from both the suggestions made by the student groups and the exercise of being forced to reflect deeply on their own practice. For the academic involved, this has proved to be both a strong personal validation for him for this particular design as well as a motivation to continue with organising tours despite the obstacles described earlier.

There is however another aspect to this type of tour and student learning process and it relates to the academics needing to work closely with leading farm business managers. This exposure inevitably results in an informal evaluation of the knowledge base of the academics, the commercial relevance of the course curriculum, and the learning methodology used by those academics and their educational institution.

Conclusions

Tours to farms can be passive experiences for students with the requirement for activity being on the farmer to supply technical and managerial details and draw attention to features of the operation in the field. The learning design described here is very different to that and, as one cooperating farmer pointed out, this structure “draws in just about all the students” and “it is not so much about going back to uni with facts and figures, it’s about how to extract information, how to assess the situation on a property or an enterprise, and [the learning design] helps students to think a lot more about what they are looking at”. The manager of another farm expressed the view that with this design “the students *have* to listen and look very carefully, they *have* to think about what

they hear and see". However, as Michie (1998) has pointed out, benefits from field trips are not guaranteed and careful preparation, planning and organisation are required.

Consistent with the findings of Harper (2004) the students appreciated the value of being challenged to apply their learning and complete assessable tasks within the field trip. Part of the attraction of undertaking excursions employing this learning design rather than remaining in the classroom has been the challenge to students to learn through observation and questioning rather than questioning alone. By their scrutiny, processing and analysis rather than simply listening the students are actively engaged in the learning process. By repeating the process over several properties on the same tour the students' developing skills can be nurtured and improved. Consistent with constructivist theory this design protects against students being cognitively dependent on their instructors and also provides relevance and authenticity to student learning. Both the students and cooperating farm managers have endorsed the design as a valuable and effective learning structure.

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