Development of online land-based learning resources for FE/HE students and industry stakeholders

Dr Jennie Litten-Brown
Introduction

- There is a potential gap in the understanding of prospective HE students regarding the key skill requirements for degrees in the land-based sector.

- The requirements of the project were to develop a series of online tools that would:
  - Encourage students to undertake land-based degrees
  - Account for the unmet needs of the labour markets
  - Develop practical, mathematical and research skills
  - Create tools that complement industry stakeholder requirements.

- When developing the tools, factors such as use by dyslexics were taken into account.
Progress South Central

- The project was undertaken in collaboration with Progress South Central Lifelong Learning Network.

- PSC seeks primarily to:
  - address those barriers to progression from vocational Further Education into and within Higher Education that might be removed by a better understanding of the needs of learners and employers.
  - support institutions to design and deliver provision which meets the needs of both learners and employers.
Roadmap of Tools Under Development

Tools aimed at industry & students
- Debating tool
- Chairing meetings

Tools aimed at students primarily
- Research tools
  - Nutrition analysis
  - Glucose assay
  - Animal dissection DVDs
- Statistical tools
  - Introduction to statistics
  - Woodland survey case study
  - Invertebrate sampling case study
- Behaviour tools
  - Captive animal
  - Farm animal
  - Safari animal

Key
- In planning stage
- Under development
- Completed

17th June 2010
Tools Aimed at Industry and Students

- These tools are designed to be useable by all stakeholders and develop skills that are useful when dealing with meetings and discussions.

- **Debating Tool**
  - This tool will take the form of a presentation interspersed with a scripted video that lays out the correct structure and process of a structured debate.

- **Chairing Meeting Tool**
  - This tool again in the form of a presentation with a scripted video provides guidance for chairing and running efficient meetings.
Tools aimed primarily at students

• The tools aimed at students provide guidance as to some of the basic requirements at HE level:

• **Research Tools**
  - These cover aspects such as experimental design, risk assessment and spreadsheet use while also through instructional DVD show laboratory demonstrations that may not be practical in all institutions.

• **Statistical Tools**
  - The general introduction to statistics tool is designed to both give an overview of the key statistical methods but also a tutorial on the correct interpretation of statistics. This tool is supported by key land-based case studies which demonstrate different statistical methods.
Tools aimed primarily at students

- **Behavioural Tools**
  - These will show a set of complementary video-based tutorials that demonstrate basic animal behaviour observation studies but also a case study of the comparison between captive, farm and safari animals.

- While these tools are under active development, the project is at a stage where key sector stakeholders are being canvassed to identify other areas for development.

- The following slides will show some example pages from the tools developed so far.
Descriptive Statistics

• Numerically, descriptive statistics are mainly concerned with the frequency distribution and measures of location such as:
  – the mean
  – the median
  – the mode

• Descriptive statistics also look at the dispersion (spread) of results using measures such as:
  – the range & interquartile range
  – variance
  – standard deviation
Standard Curve

Equation for best fit

\[ y = 141.6x - 6.5707 \]

\[ R^2 = 0.9968 \]

Indication of how ideal line is

Known value (this is the determined value for actual samples)

Measured value

GLUCOSE CONCENTRATION (µg/ml)

ABSORBANCE at 540nm
Mean and SEM

- Mean: Columns
- SEM: Error bars

Values for different treatments:
- Treatment 1: 5.1
- Treatment 2: 5.2
- Treatment 3: 5.3
- Treatment 4: 5.4
The Heart

• The heart is a big pump that circulates the blood around the body.

• If you lived to 66 years old it would beat 2.5 billion times.

• In adults, the heart pumps 8000 gallons of blood every day.
# AREA HEALTH AND SAFETY RISK ASSESSMENT FORM

<table>
<thead>
<tr>
<th>Assessment Reference No.</th>
<th>Area or activity assessed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment date</td>
<td></td>
</tr>
<tr>
<td>Persons who may be affected by the activity (i.e. are at risk)</td>
<td></td>
</tr>
</tbody>
</table>

## SECTION 1: Identify Hazards

Consider the activity or work area and identify if any of the hazards listed below are significant (tick the boxes that apply).

1. Fall of person (from work at height)
2. Fall of objects
3. Slips, Trips & Housekeeping
4. Manual handling operations
5. Display screen equipment
6. Lighting levels
7. Heating & ventilation
8. Layout, storage, space, obstructions
9. Welfare facilities
10. Electrical Equipment
11. Use of portable tools / equipment
12. Fixed machinery or lifting equipment
13. Pressure vessels
14. Noise or Vibration
15. Fire hazards & flammable material
16. Vehicles / driving at work
17. Outdoor work / extreme weather
18. Fieldtrips / field work
19. Radiation sources
20. Work with lasers
21. Hazardous fumes, chemicals, dust
22. Hazardous biological agent
23. Confined space / asphyxiation risk
24. Condition of Buildings & glazing
25. Food preparation
26. Occupational stress
27. Violence to staff / verbal assault
28. Work with animals
29. Lone working / work out of hours
30. Other(s) - specify

## SECTION 2: Risk Controls

For each hazard identified in Section 1, complete Section 2.

<table>
<thead>
<tr>
<th>Hazard No.</th>
<th>Hazard Description</th>
<th>Existing controls to reduce risk</th>
<th>Risk Level (tick one)</th>
<th>Further action needed to reduce risks (provide timescales and initials of person responsible)</th>
</tr>
</thead>
</table>

Name of Assessor(s) | Signed |
Review date | Number of continuation sheets used:
Access to Resources

• The ultimate aim of the project is to provide the tools as a free online resource.
• The tools will be made available to anyone wishing to use them but promoted primarily among the land-based education and industry sectors.
• Hosting of the resources will be on a site similar to the Engage In Research interactive resource for bioscience students developed by the University of Reading (http://www.engageinresearch.ac.uk/)
Conclusion

- The ongoing project at the University of Reading will provide a long-term free resource for prospective students and key industry stakeholders.
- The resource is such that additional tools can be added at any time in the future as further needs are identified.
- It is hoped that this project provides a good model for the provision of complementary learning resources that can be translated across other subject areas with specific case studies adapted to specific requirements.
Funding

- This project has been co-funded by:
  - Progress South Central
  - The University of Reading through its University Teaching Fellowship Scheme.