

Second year laboratory based group work as an aid to undergraduate project preparation

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Rationale

- There is an increasing need for students in the biological sciences to have:
 - practical experience of developing experimental protocols
 - a conceptual understanding of ethics and risk assessment
- These concepts:
 - are a requirement of final year projects
 - are part of their development as a professional biologist.

Course structure

Week	Practical Activities	Assessment Milestones	Milestone Tutorials
1	Weekly tutor lead practicals linking physiology and biochemistry which are used to develop data handling and subject specific knowledge		
2			
3			
4			Materials and Methods
5			
6		Materials and Methods	Ethics
7			
8		Ethics	Risk Assessment
9		Risk Assessment (PRA)	Materials requisition
10		Materials requisition (PRF)	Troubleshooting
11			
12		ASSESSMENT	

Results

- The key findings of the questionnaires and interviews was that participants felt that at the end of the module they:
 - discussed experimental design principles differently, being much more aware of the planning process needed for building ethics and risk assessment into the experimental design.
 - saw the role of the tutor more as providing guidance on their work rather than as a deliverer of information
 - still felt that the final year project was daunting but were more confident in their ability to independently undertake laboratory based tasks.
 - felt that the group work allowed ‘safe’ examination of experimental design in a new and interesting way.



Conclusions

- This study highlights how groupwork can enhance students' understanding of disparate concepts necessary for project development and professional development in the field of biology
- The construction of an environment where there is dialog particularly enables students to engage with the subtle and complex ideas underpinning the conduct of practical investigations
- Understanding the effect this approach has on students' development as scientists has been useful to us in the ongoing discussions linked to award and module improvement



Further studies

- Correlating the output of final year project work with those students that have taken part in this module
- Evaluating the use of video guides within this module