NOTTINGHAM TRENT UNIVERSITY

Course Leader Conference

Research-Teaching Links: Informing curricula and creating outputs

Jacqueline Boyd (Animal and Equine Science)

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Cassie White (Animal and Equine Science)

Introduction

- Aims of the session:
  - Linking of teaching and research
  - Sharing ideas for getting students involved in research
  - How might that differ across subjects
  - How can research-teaching links enhance the curriculum and lead to research outputs

Group discussion

- What does research look like in your discipline?

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Research-Teaching Links: Approaches to teaching to enable research

Natalie Braber – Linguistics, School of Arts and Humanities

Staff eNews

11 May 2015

NTU celebrating successful outcome in Higher Education Review

As an appropriate end to a very busy teaching year, the university has received the report of the Higher Education Review that took place in February. I am delighted to say that the outcomes of the review are very positive. The QAA confirm that all four areas of review (the setting and maintenance of academic standards; the quality of student learning opportunities; the quality of information; and the enhancement of student learning opportunities) all meet UK expectations and we can display the QAA kite mark on all our material.

It is particularly pleasing that the report identified a wide range of good practice and that reviewers highlighted areas where we are sector-leading. These are:

- The innovative approach to employability and engagement of stakeholders;
- The effective partnership between the University and the Students' Union;
- The extensive range of research-informed teaching and learning projects which are enhancing the student experience;
- The effective use of management information which supports the University's quality assurance framework.

To illustrate this good practice, the report makes specific reference to the far-reaching work that is being carried out across the University and which is making a measurable difference to the quality of student learning opportunities. These initiatives include, for example, grade-based assessment, feedback to students, Scale-Up, Epigeum, teaching quality metrics and COGNOS, as well as the range of significant work we do to promote the employability of our students. Also discussed in the report is the comprehensive and analytical use of evidence in annual reporting, the improved quality of data to inform enhancement and the thorough and critical approach we take to Periodic School Review. The positive ways in which we engage students individually and collectively across such a large organisation is also highlighted in the report as is the involvement of our students in feedback and decision-making processes.

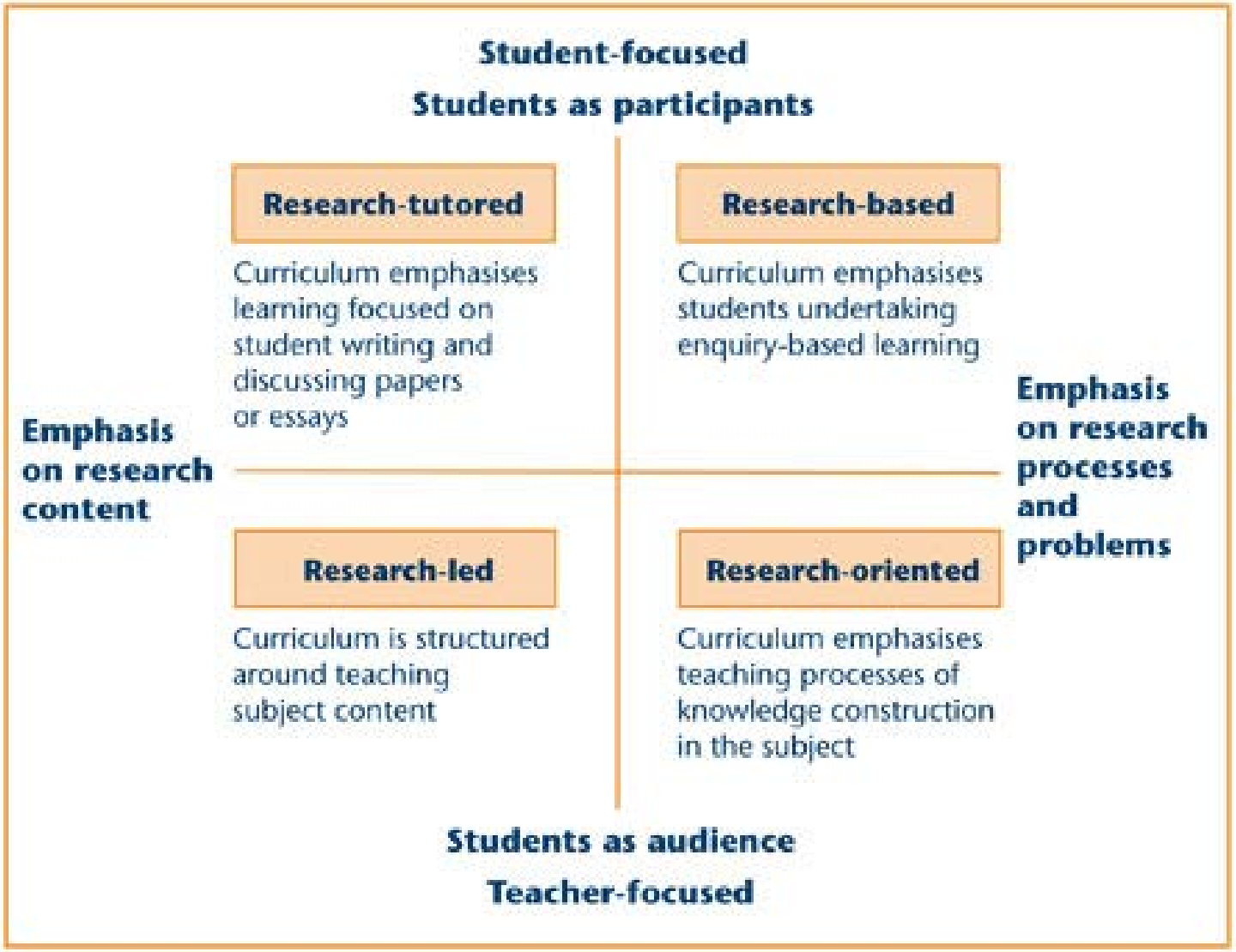
The report also affirms the valuable development work that is taking place to enhance the quality management of research degrees, including at collaborative partners. Improvements in quality oversight and governance of wider collaborative

Teaching and Research

- Many lecturers find teaching and research compete for their time – can be hard to balance.
- However, the two need not be in opposition and can be linked.
- How can we incorporate research into teaching – through active engagement of students.
- Proposes to enhance student learning experience.

Students and Research

- Students have to be assisted to move from passive to active learning.
- Allowing students to form part of ‘learning communities’ permits students and academics to work together and learn from each other.
- These are vital transferable skills once they leave University.
- In order for learning to be most effective, it must be seen as relevant to the real world, and such projects can show students how academic research is relevant to the wider world outside academia.


Student-focused
Students as participants
Research-tutored
Curriculum emphasises learning focused on student writing and discussing papers or essays
Research-based
Curriculum emphasises students undertaking enquiry-based learning
Emphasis on research content
Emphasis on research processes and problems
Research-led
Curriculum is structured around teaching subject content
Research-oriented
Curriculum emphasises teaching processes of knowledge construction in the subject
Students as audience
Teacher-focused

So how can students learn from our research?

- How does the brain learn most effectively?
- Learning occurs through social interaction.
- How a person feels about a learning situation determines amount of attention devoted to it.
- Active learning provides opportunities to connect new experiences to old ones.
- “We remember what we understand, we understand only what we pay attention to; and we pay attention to what we want” (Roettger et al. 2007).

SPUR (Scholarship Projects for Undergraduate Researchers)

- NTU supports promotion of links between research and teaching through projects, e.g. SPUR.
- This programme began in 2007 and was introduced by Working Party for Research Informed Teaching.
- Staff bid for bursaries to involve 2nd year students in research projects.
- Staff gain insight into how students experience research, and how research impacts upon the quality of learning at HE level.
- Results also disseminated to wider student community.

What happens?

- “Scholarship of teaching” (Bender & Gray 1999).
- Teaching and learning is not a one-way process.
- Students are active participants in the project from the outset and invited to be collaborators in every phase.
- Students have to work as part of a team and independently.
- Important for the students to realise they are capable of carrying out research independently.
- “Producers of knowledge” (Healey and Jenkins 2009).

How do students benefit?

- Enhancement of the student experience through collaboration and situated learning.
- Projects add valuable knowledge to current research questions and raise new questions.
- Projects can put students (and NTU) into direct contact with the local community.
- Feedback: participation was very rewarding; interest in the subject area; proud to be involved in such a project; enjoyed working with school students; improved their confidence in their own abilities.
- These projects can feed back into taught modules.

Discussion:

- So how do you or could you involve students in your research?

- How might this involvement affect both the curriculum and the research itself?

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“Enhancing Performance”

Employing the analysis of animal athletes to enhance the student experience and performance in Animal and Equine Science

Jacqueline Boyd & Cassie White

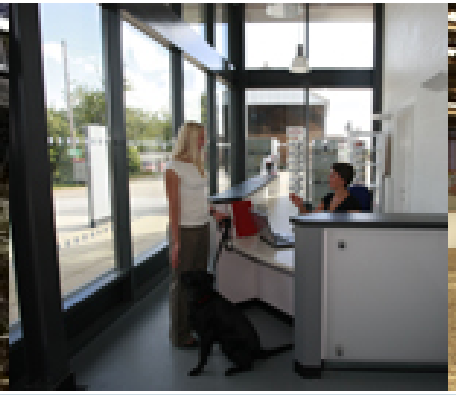
School of Animal, Rural and Environmental Sciences

Nottingham Trent University

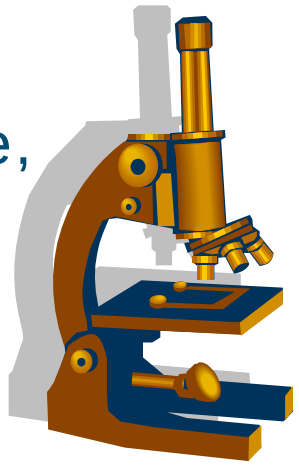
Overview

- How have we taken a novel research area and used it to;
  - Inform/develop courses and curricula
  - Develop analytical skills in our students
  - Promote student involvement in applied animal research
  - Drive output production

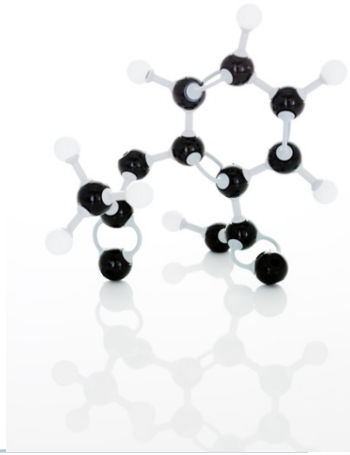





School of ARES



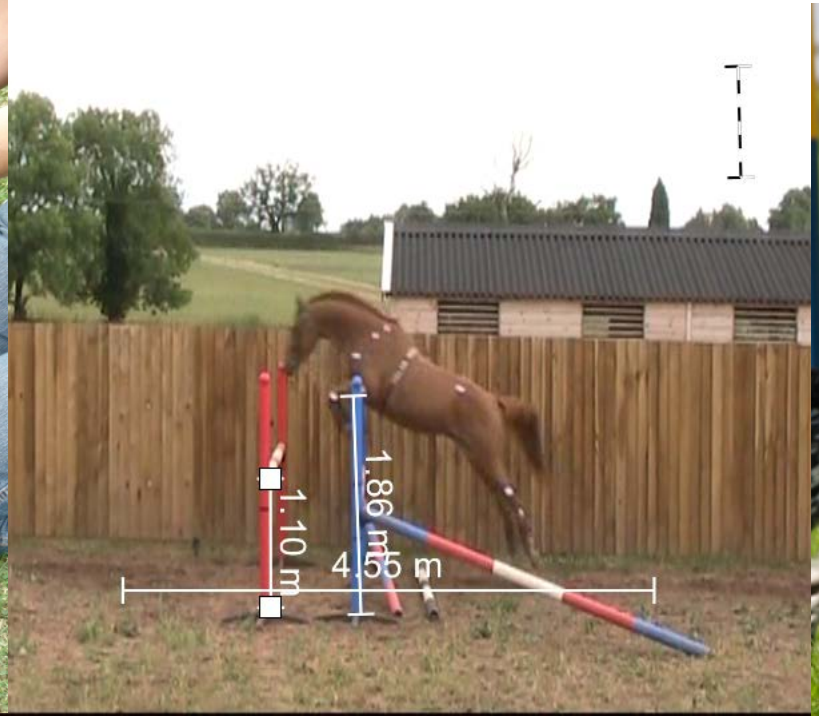
- Further education to PhD level in animal, equine, agriculture and land based subjects
- Vocational and applied aspects of academic programmes
- Increased numbers of research-active staff
  - Divergent experiences and expertise
- We strive to implement a research-informed teaching strategy at all levels
  - Application of current and novel research
  - Embedded to curricula
  - Promotes a fluid approach while maintaining academic standards
  - Promotes currency and relevance of course content



The research-teaching nexus

- Links disciplinary research and student learning in that discipline (Neumann, 1994)
- Enhanced student engagement and inclusion within the wider academic body promotes **student retention**, **enthusiasm**, **confidence** and ultimately, **academic success** (Edwards, Jones, Wapstra and Richardson, 2007)
- ***Widely suggested to promote motivation and engagement with the learning process***
  - **Ultimately leads to enhanced performance and success!**

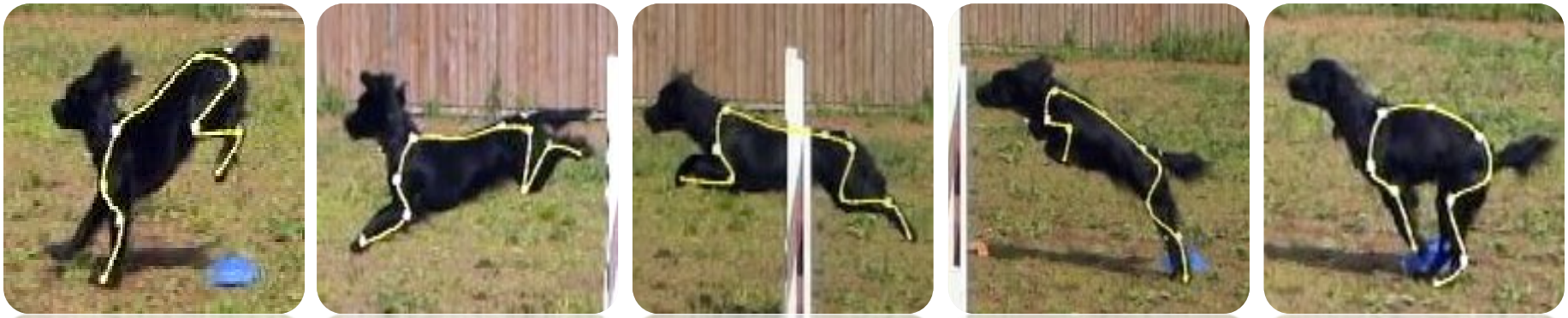
The animal athlete



- Novel area of applied animal research – especially canine sports

- Opportunity to combine staff interests and expertise with student awareness of “real life” applications of science

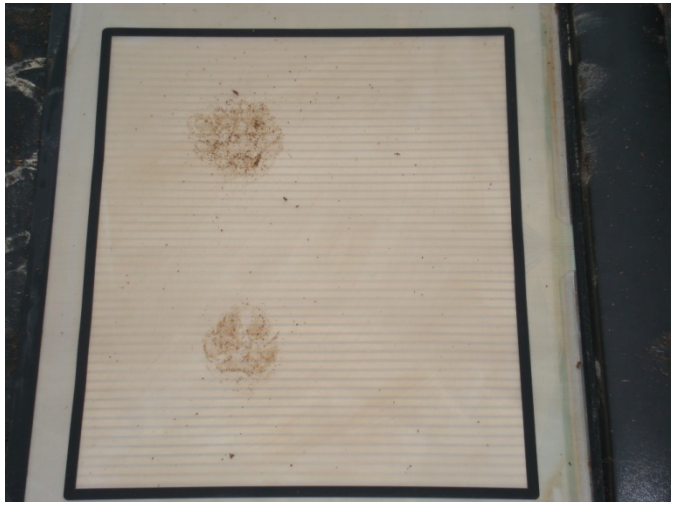
The animal athlete

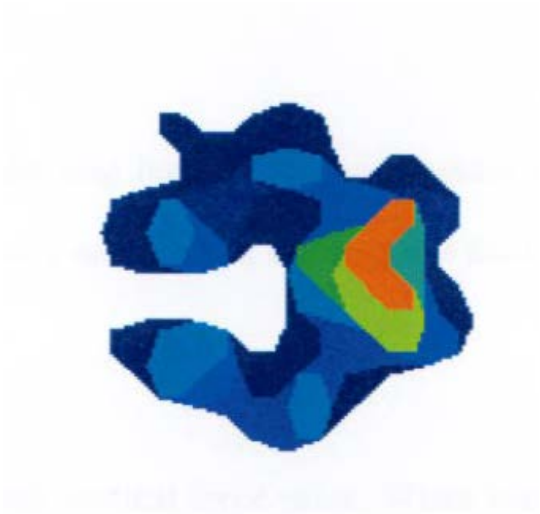


- Nature of project work
  - Direct animal handling/contact
  - Opportunity to become familiar with novel equipment and software
  - Team-work and peer-instruction

Examination of the animal athlete

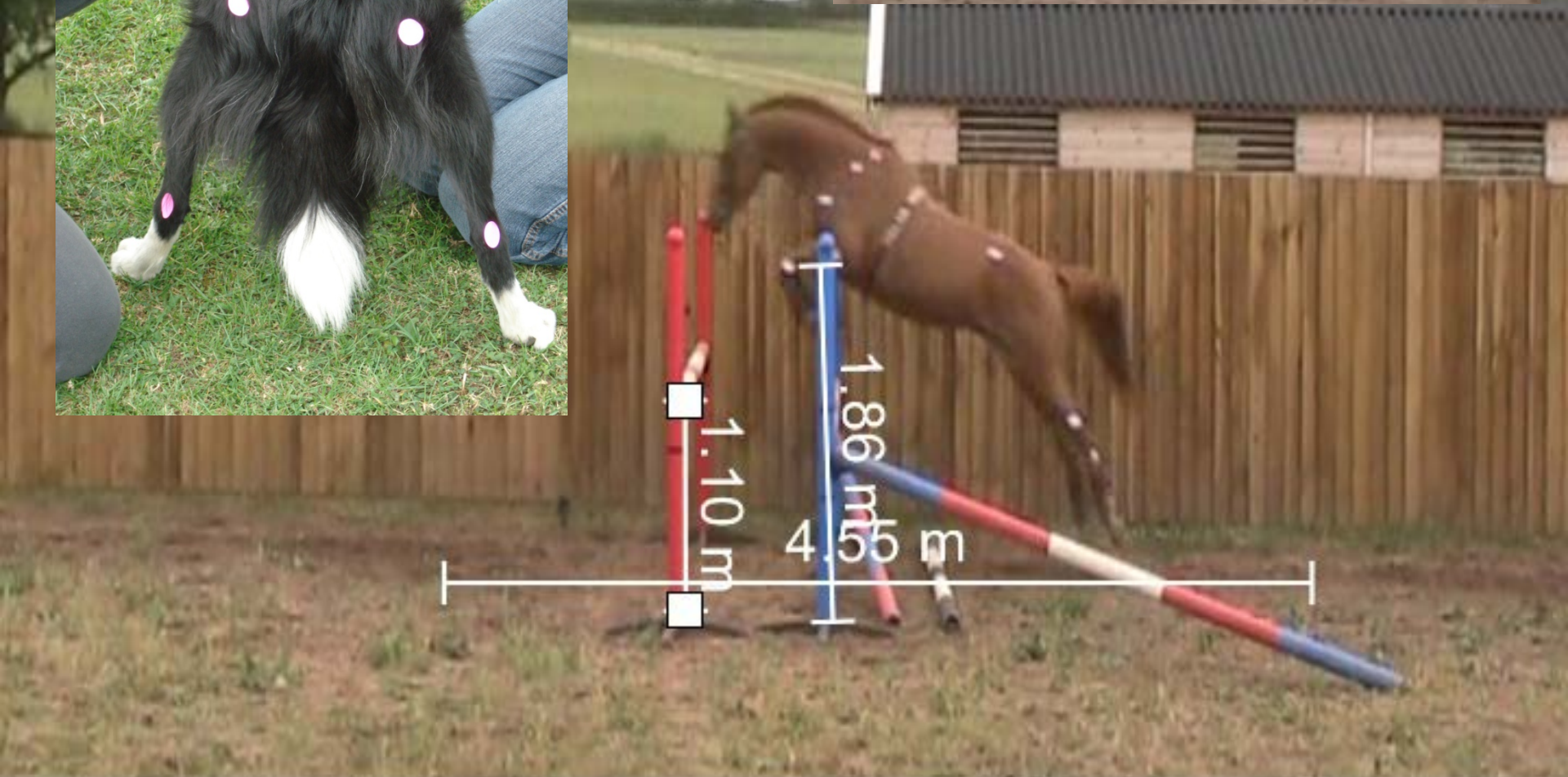
- Use of Tekscan to monitor forces/pressure





- Range of potential;
  - Ground forces at take off and upon landing
  - Determination of movement – measurement of fatigue; injury identification; diagnostic tool

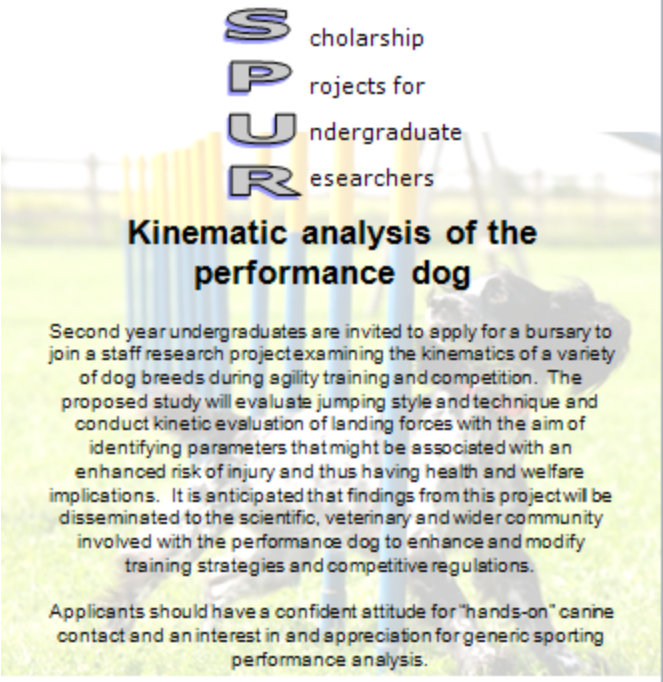
Use of Dartfish – dogs and horses



Ongoing research projects

- Vacation studentships examining canine and equine performance
  - Forming the basis of dissertation projects
  - Aided by two Nuffield vacation students
    - Undergraduates working with prospective university students

- Aided both student and staff development
  - Relevant contacts and guest speakers
  - Students develop additional skills
  - Initiation of additional research
  - Career opportunities
    - Research assistant position



Scholarship
Projects for
Undergraduate
Researchers

Kinematic analysis of the performance dog

Second year undergraduates are invited to apply for a bursary to join a staff research project examining the kinematics of a variety of dog breeds during agility training and competition. The proposed study will evaluate jumping style and technique and conduct kinetic evaluation of landing forces with the aim of identifying parameters that might be associated with an enhanced risk of injury and thus having health and welfare implications. It is anticipated that findings from this project will be disseminated to the scientific, veterinary and wider community involved with the performance dog to enhance and modify training strategies and competitive regulations.

Applicants should have a confident attitude for "hands-on" canine contact and an interest in and appreciation for generic sporting performance analysis.

For more details of the project and information about how to apply, please contact:
Dr Jacqueline Boyd: jacqueline.boyd@ntu.ac.uk
or Cassie White: cassie.white@ntu.ac.uk

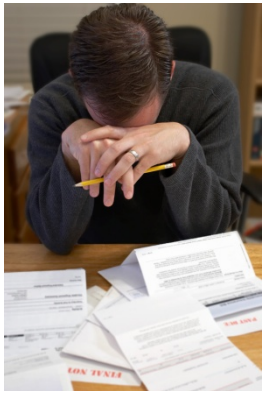
For more details on other SPUR projects contact:
Helen Puntha, Research Officer for C.A.D.Q: 0115 8483161

The Reality……. student perspective

- **Anecdotal evidence**;
  - "Opportunity to become involved in something new and different"
  - Puts other learning into perspective – "that's why!"
  - Potential for career development/realisation
  - An opportunity to become involved in "real science"
  - Development of additional transferable skills
    - Supervision/team working/independence
    - Data analysis/collection
    - Reality of science as a career
    - Presentation skills
    - Report writing
    - Networking – BCUR
    - Maintenance of alumni contact
  - **Value added benefit**

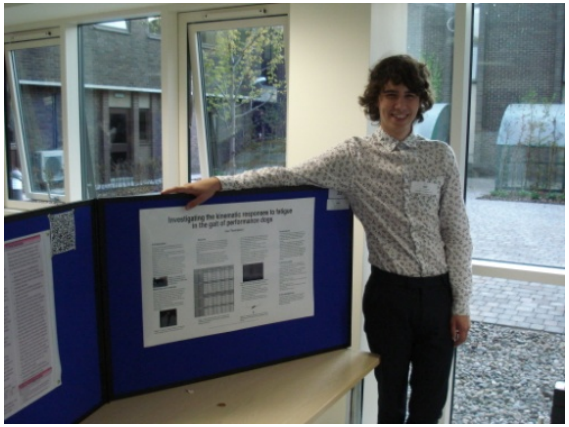
The Reality……. staff perspective

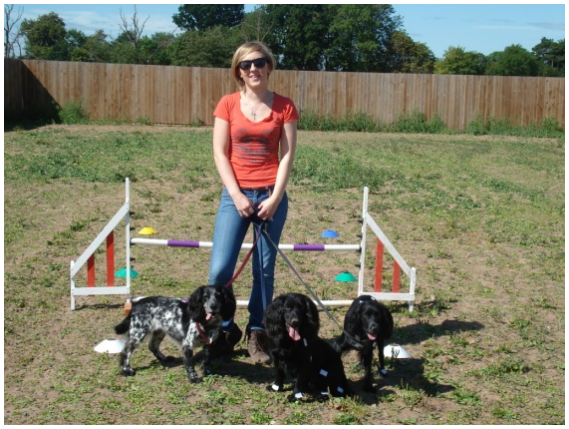
- Costs
  - **Increased staff workload**; supervision and training, seeking/applying for funding, module alteration, modification of teaching approach
    - Mediated by support from all associated parties
  - Projects becoming “selective”
    - “Open to all” opportunities within curricula and on voluntary basis



- Benefits
  - Novel research opportunities/ideas (“Facebook Effect”)
  - Increased motivation to drive teaching from research
  - Maintains currency of curricula and personal development
  - Output potential!

Outputs…..





Dogs' agility put to test

By David Parker
d.parker@newarkadvertiser.co.uk

ANIMAL science students helped a national dog agility team prepare for a major event by inviting them to train at their campus.

Nottingham Trent University students, based at Brackenhurst campus near Southwell, invited the Kennel Club's Agility Team Great Britain to train there on Monday.

The 16 dogs and handlers were preparing for the European Open in Belgium in July.

The dogs honed their skills on an agility course in the Mary King Arena, while the handlers took part in fitness sessions.

The students helped the team with training and conducted observational research to help with their coursework and dissertations.

Animal biology student Jen Alcock, 20, of Southwell, said: "My course is based on domestic animals but it is important to see the agility side as well.

"It's not often we get the chance to observe such high- grade dogs."

First year student Samantha Aldam, 19, said: "We have lectures on how to build performance dogs so this will add to what we have learned."

Dr Jacqueline Boyd, the course leader for BSc (Hons) animal biology, said: "This was a good opportunity for our students to see good health and welfare, fitness and training in action, and to get involved in the practical side of things with Team GB.

"A lot of students didn't realise there was so much science behind this.

"It's not just that they stick some fences out to jump over. There is a lot of preparation going on.

"They got a good idea of how they can maximise performance and minimise injury risk.

"It is all very well standing in the classroom talking about animals but this gives them an opportunity to actually see them in action."

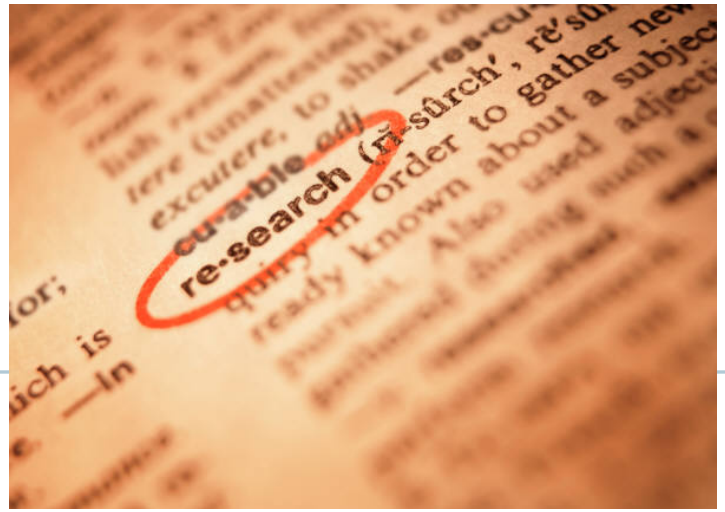
Caroline Kisko, the Kennel Club's secretary, said: "Team GB training at Nottingham Trent University for the upcoming European championships is of great benefit to both parties and we hope the preparations go well and wish the team the best of luck for Belgium."

MATT GOODLIFFE puts his dog, Quincy, through its paces. 270513JT1-39

- Amazing student interest and local press coverage
  - Gaining extra skills/experience
  - Wider world application!
  - Peer reviewed publications

In summary….

- Implementing and recognising the research-teaching nexus is a valuable addition to our curricula
  - Student **and** staff benefits
  - ***May*** be instrumental in “future proofing” aspects of higher education
  - **Value added benefit** in a competitive and changing environment
  - We believe that we can not only enhance animal athlete performance but ultimately also the performance of our students



Group Discussion

- What role can course leaders play to facilitate the enhancement of curricula and outputs through research-teaching links on their course?

Individual reflection and planning

- We have provided you with a time planner – can you note down key ideas, goals or plans as well as how and when you could implement these?

References

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