Reflecting on the postgraduate experience: Teaching research methods and statistics

Review of the DART-P sponsored workshop at PsyPAG 2013

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FOLLOWING THE SUCCESS of last year's teaching and career development workshop, this year's DART-P sponsored workshop at the Psychology Postgraduate Affairs Group (PsyPAG) Annual Conference held at Lancaster University focused on postgraduate's experiences of teaching research methods.

The theme for this year's workshop arose from the conclusions of our PsyPAG Teaching Survey which was completed by 140 postgraduate students at 50 higher education institutions (see the article by Davies & Jackson, 2014, in this issue for more information on the teaching survey). Respondents reported an enjoyment of teaching but that the barriers experienced by some undergraduates such as fear of statistics made teaching difficult. For some of the respondents, breaking down this barrier was seen as a positive accomplishment of their teaching experiences, though it was evident that this fear of statistics was a common challenge. Additionally, some respondents reported having low confidence levels in their own ability to teach statistics, sometimes because of their own undergraduate experiences. The workshop aimed to provide postgraduates with teaching approaches that aimed to reduce undergraduate student's fear of statistics and also help with their own confidence levels.

Similarly to some of the respondents to the teaching survey, our invited speaker, Dr Emma McDonald, the HEA Psychology Technician of the Year 2013, told us that she felt like a fraud when she first started teaching statistics. Like most postgraduates, she too thought that to teach statistics, you needed to be a genius and because of this, Emma over prepared for workshops. On reflection Emma thought this over preparation was quite funny, as potentially a lot of her students felt the same way. This idea of a fear of statistics may be very real at both undergraduate and postgraduate stages.

Statistics anxiety, an anxiety that students experience when undertaking statistics (Onwuegbuzie, 2004), can result in adverse learning behaviours such as procrastination over assessment activities or trying to learn everything. Emma described to the delegates how her fear of statistics at undergraduate level has now developed into a love of statistics because of her obsession with trying to understand everything. However, her biggest regret from her undergraduate years was not taking the time to find a statistics textbook she could relate to. She recommended to delegates to find 'the one' textbook, as this is key to helping overcome the fear that we all face.

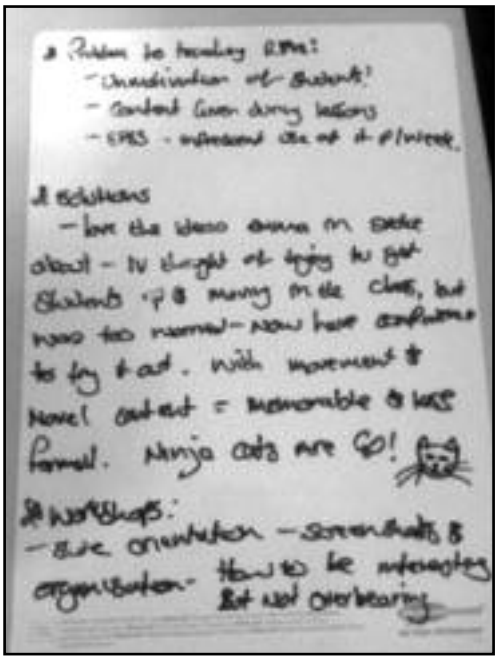
To support her students, Emma is keen on exploring ways to make statistics a more enjoyable subject to teach. Her presentation at the workshop, *'Ninja cats, zombies and space invaders'*, described the creative approaches she uses in teaching statistics. 'Ninja cats' is

based on an example that Andy Field uses for chi-square put together with a video of a cat on the internet to show the idea of cats learning different skills. Also, the use of cats for chi-square is a great example as it reminds students that chi-square uses CATegorical variables! 'Space invaders' describes the use of interesting and engaging data sets and examples to show students how research is built on previous findings. 'Zombies' refers to thinking about the student experience and was devised from a combination of talking to students and hearing about Zombie statistics that just will not go away. In the session to explain certain concepts Emma took a kinaesthetic approach and got the delegates up and moving about. For instance, to demonstrate a scatter plot, Emma asked the attendees to position themselves in the room based on how much they liked statistics and how confident they felt about teaching statistics. Emma pointed out that the way we were standing was like a scatter plot. She recommended using this type of interactive teaching with our own students to help with a deeper learning approach.

Through her presentation, Emma offered five key pointers to delegates to help with teaching statistics. Firstly, do not worry about knowing the answer to every question asked. To support the student's academic development Emma adheres to the saying *'Give a man a fish, and you feed him for a day; show him how to catch fish, and you feed him for a lifetime'*, so rather than answering the question directly, provide directions as to how the student can source the answer, to develop the habit of self-learning. Also being honest and showing you do not know the answer to every question makes you more human, thus approachable to the students. This was another point for delegates, being human and friendly in combination with humour can improve engagement with statistics and reduce statistics anxiety. Thirdly, tweak the slides from your predecessor and inject your own personality into them so that you feel comfortable in delivering the material. To improve, feedback is important; ask students how they are finding the work and make changes accordingly, the sooner you hear of a problem the quicker it can be addressed, so do not wait till the end of the year as it is too late. But at the same time, remember you cannot please or solve everyone's concerns. As we all know, it is difficult teaching a statistics class with varying abilities and ensuring all are ok, but this is why statistics is one of Emma's favourite topics to teach because you cannot get it completely right for everyone but it is a challenge to try and see many achieve.

Emma also pointed out that we should remind students that statistics is an important transferable employability skill from a psychology degree, so it is worthwhile learning. And lastly, do not let your own personal experience dictate your teaching or your student's opinions of statistics; statistics anxiety is real, but there are ways to overcome it! So, the next time you are delivering a statistics workshop, Emma reminded delegates think of ninja cats, zombies and space invaders or use your own fun ways to make concepts more memorable.

Feedback from delegates was given via the use of an interactive method. Small whiteboards gave the delegates the chance to reflect on Emma's presentation and how to incorporate this into their teaching. Laura Neale, a PhD student at Northumbria University, found the workshop *'very engaging, informative and enjoyable. The demonstration of techniques and activities that can be incorporated into workshop sessions really helped me to gain a good understanding of ways in which you can demonstrate different concepts in a interactive and interesting way which can help with learning and improving the student experience. This has also allowed me to consider my teaching style and I have already incorporated some new activities and ideas into my teaching for the coming academic year as a direct result of what I learnt during the teaching work shop.'* Further positive comments were received from Sam Reeves, a PhD student at Canterbury Christ Church University, *'the workshop*



Small whiteboards were used for feedback.

provided great ideas to help postgraduate teachers like myself interact better with their students; ideas on how to make research methods more engaging by getting the students moving about and thinking concepts and statistics physically. Brilliant – I can't wait to test it on my own students!' Both Sam and Laura commented on how useful the past two workshops have been for delegates attending the PsyPAG conference and hoped that 'workshops of this nature continue to exist in the future to assist post-graduates early in their careers'.

In summary, the workshop was well received by delegates and it provided a forum for discussions about ninja cats and moose fishes as ways to creatively engage students with statistics. The organisers would like to thank Dr. Emma McDonald for her brilliant presentation and Division of Academics Researchers Teachers in Psychology (DART-P) for their continuing support.

For more innovative stats teaching ideas, follow Emma McDonald on @Ninja_Cats.

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Onwuegbuzie, A.J. (2004). Academic procrastination and statistics anxiety. *Assessment & Evaluation in Higher Education, 29*(1), 3–19.