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Utilising diverse teaching activities to support first year students

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What was the problem?

- Neuroscience student numbers increasing over 5 years
- 1st year course – shared units/other subjects
- Large cohort (>70 students), lacking identity

→ Core subject content moved to Yr1

- Students struggling with content
- Content lacked breadth and diversity
- Small group tutorials not possible

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Continuing development of undergraduate 1st year Neuroscience units

Teaching the broader aspects of neuroscience

- Increasing breadth of subject area

Providing small group teaching

- Introducing structured large group teaching

Producing competent learners

- Developing scientific & study skills

Creating new teaching activities

- Repurposing the wheel

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Large group workshops

Creating a small group environment within a large group setting

- ❑ Collaborative working in small groups
- ❑ Completing a specific task
- ❑ Introducing scientific and experimental skills

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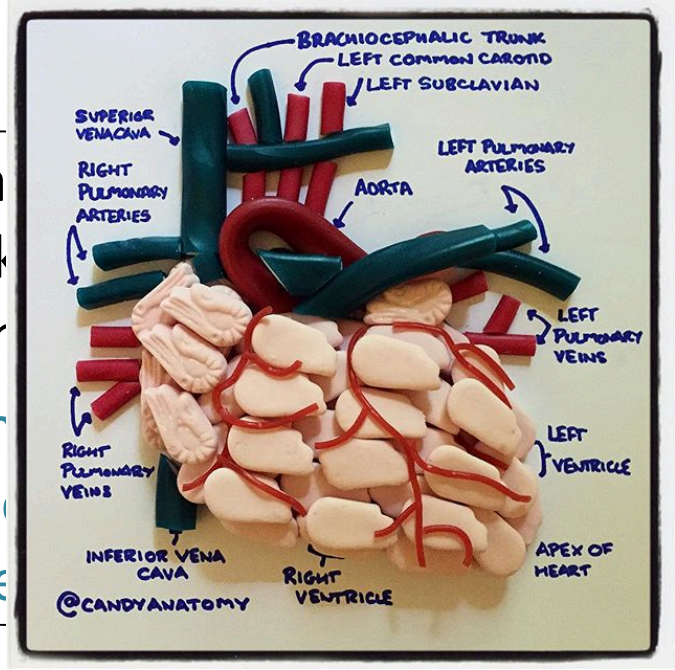

twitter.com/CandyAnatomy

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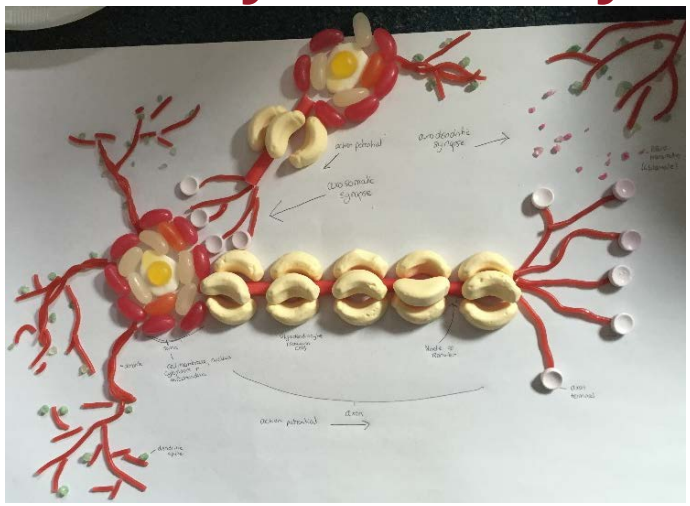

Networking & collaboration

Scientific communication

What is a figure legend?

Utilising a marking scheme

CREATE A PICTURE

DISCUSS your picture in your group

DESCRIBE to another group

WRITE A FIGURE LEGEND

PEER MARKING

Formative tasks, aiding students to develop scientific skills (e.g. writing figure legends)

eBiolabs Integrated tools for laboratory teaching

Followed by summative assignments

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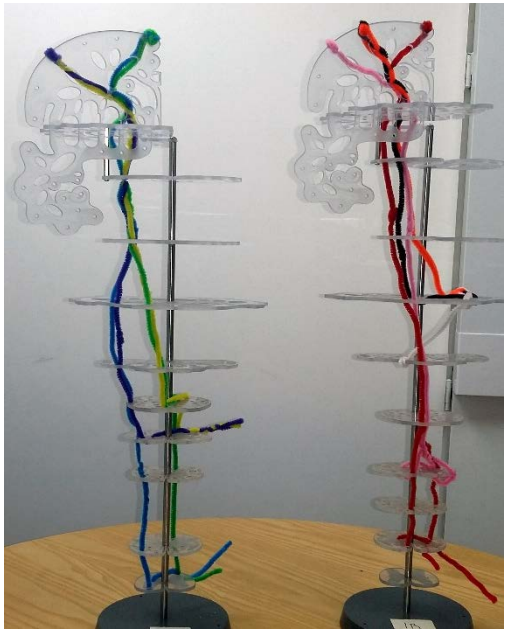
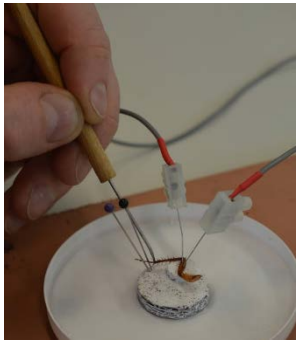
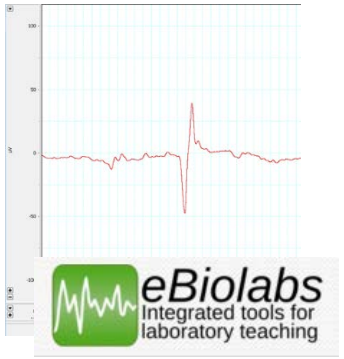
Brain towers



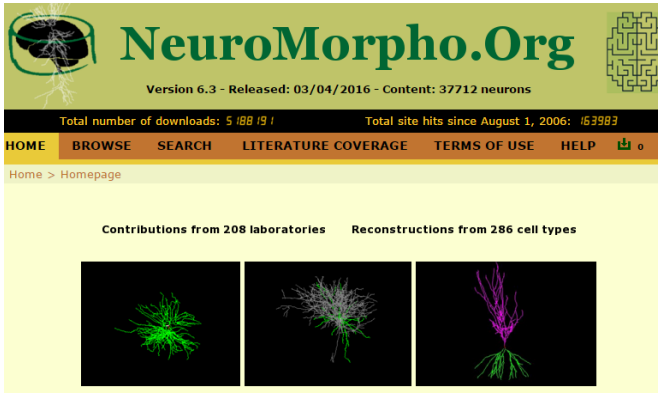
Neurophysiology practical





PeerWise

Ask | Share | Learn



NeuroMorpho.org database

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Student comments, feedback and evaluation

eVoting

Questionnaire

Google Docs

Course content

Activity session structure

Skills development

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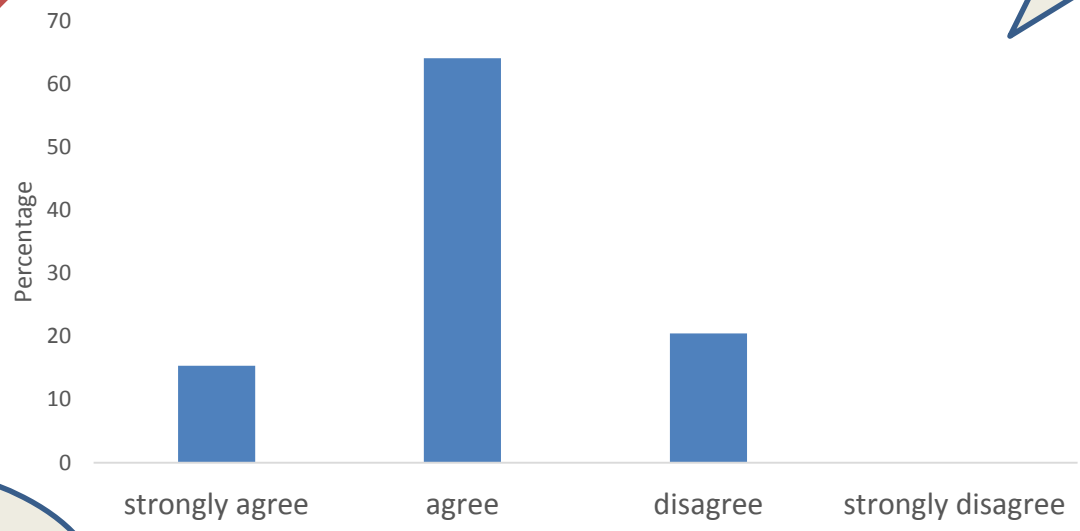
Course content

Q. Lecture content at the correct level?



Aspects you liked?

"The variety of content"

"Anatomy practicals"

"Content was interesting
…. Workshops and HDRs are useful"

"The unit had variety in the lectures"

"Workshops/Hands on practicals"

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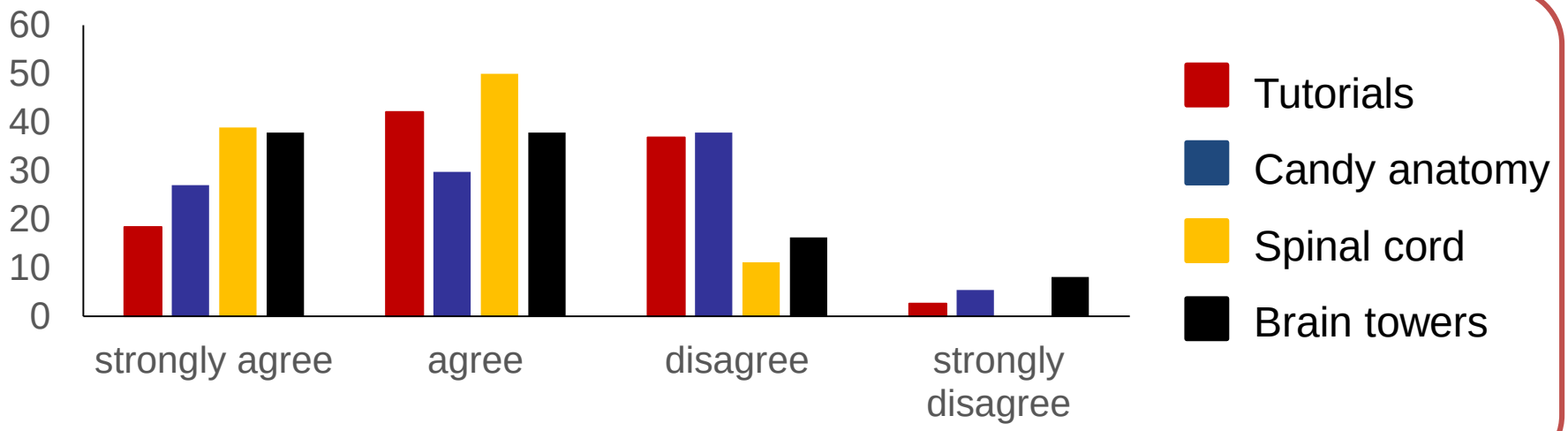
Teaching activities

Q. Teaching activities helped me understand the associated lecture material



Students reported that structured sessions were more useful than large group tutorials in helping them to understand lecture content.

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Talking things through & developing ideas with others

Didn't cover every element only looked at one part

Explaining your picture to someone else

understanding wasn't good enough to be confident of the model I was making

hands on learning

Knowing what to include (in there) was useful

I hadn't pre-learnt what we were revising

Visualising the anatomy

Let us do more than one picture …… we can revise more

Really helped with socialising with fellow students

colour coded sweets

Had to be detailed... Labelling the image

How to write a figure legend for assessed work (workshop 2)

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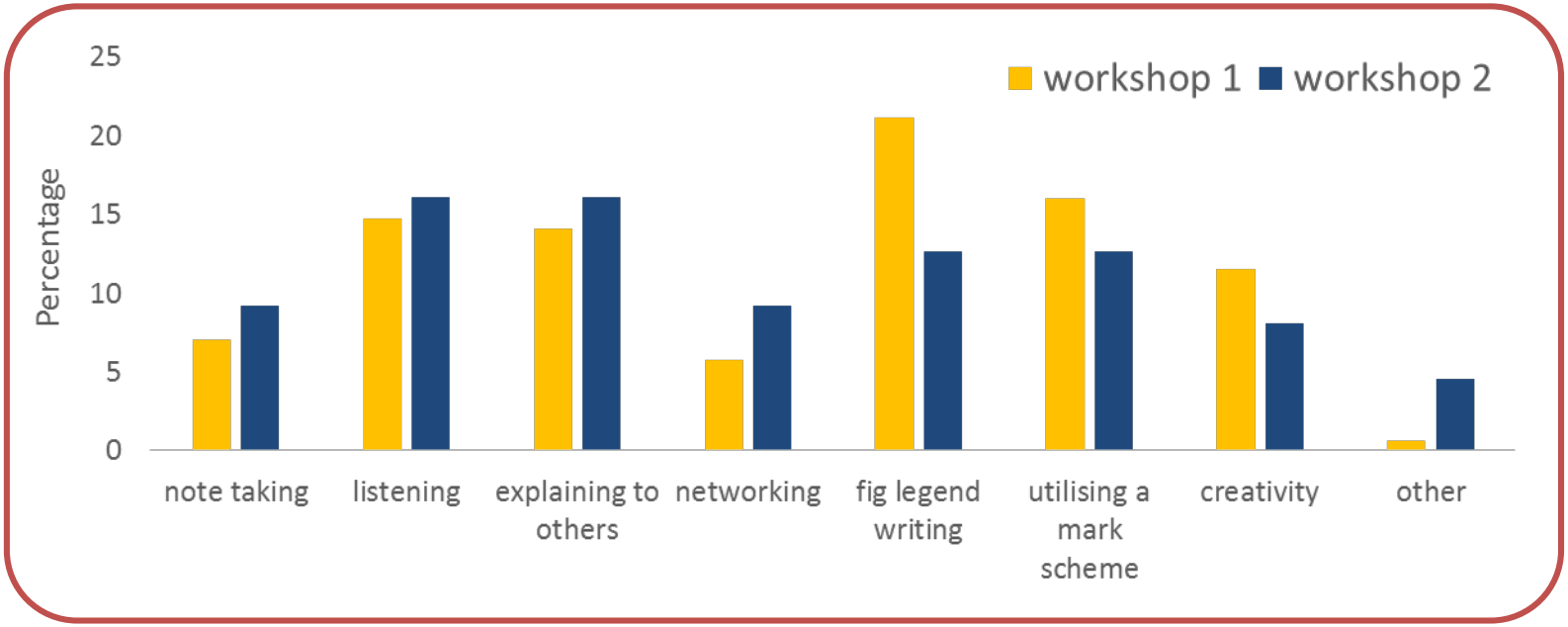
Development of skills

Q. Teaching activities helped me develop the following skills



Students developed figure legend writing skills as well as other scientific communication skills

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Conclusion

- Students like the variety of lectures
- Hands-on workshop sessions & practical sessions
  - supported student learning and subject understanding
  - Facilitated development of core scientific skills and communication
  - Encouraged student interaction
- Structured sessions were perceived to be “more useful”
  - Encourage enquiry driven learning
  - Utilising established (and even forgotten) resources for another purpose
- Student still request small group tutorials ……

  as well as more workshops & problem solving tutorials

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Acknowledgements

Curriculum development

Andy Doherty
Clea Warburton
Jack Mellor
Zaf Bashir
Natalie Hawkes

Workshop and Practical class development

Andy Doherty
Myma Baptist
Steve Fitzjohn, Pete Brennan
Dave Gee, Tanya Saunders, Steve Chapman
Debbie Martin

Activity resources

- Candy anatomy: http://www.theguardian.com/science/blog/gallery/2015/sep/03
- Braintowers: . Greene JR. (2009). Anat Sci Educ 2:34–40
- Peerwise: Galloway KW & Burns S (2015). Chem Educ Res and Pract 16: 82-92
- Neurophysiology: Ramos RL et al (2007). J Undergrad Neurosci Educ. 5(2) A28-A34
- NeuroMorpho: Chu P et al (2015). J Undergrad Neurosci Educ. 13(2): A95–A100.