Abertay University

WHERE'S THE FLIPPING STATS?

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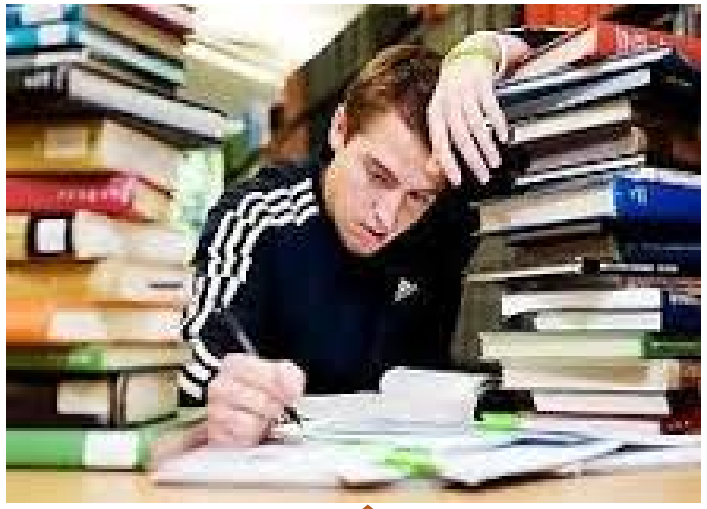
Division of Science

Why On-line lectures?

- 1 or 2 hour lectures +
- 1 hour tutorials +
- 3 hour laboratories

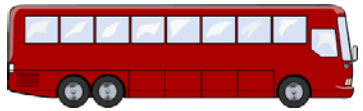
- Home : Coursework



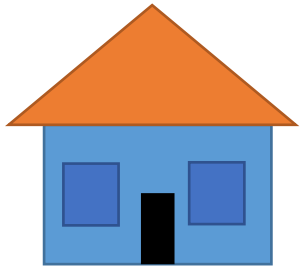
Traditional approach

Why On-line lectures? (Statistics material)

- Home : Read/listen to lecture material



- Coursework: Supported by tutor and peers



Flipped Classroom

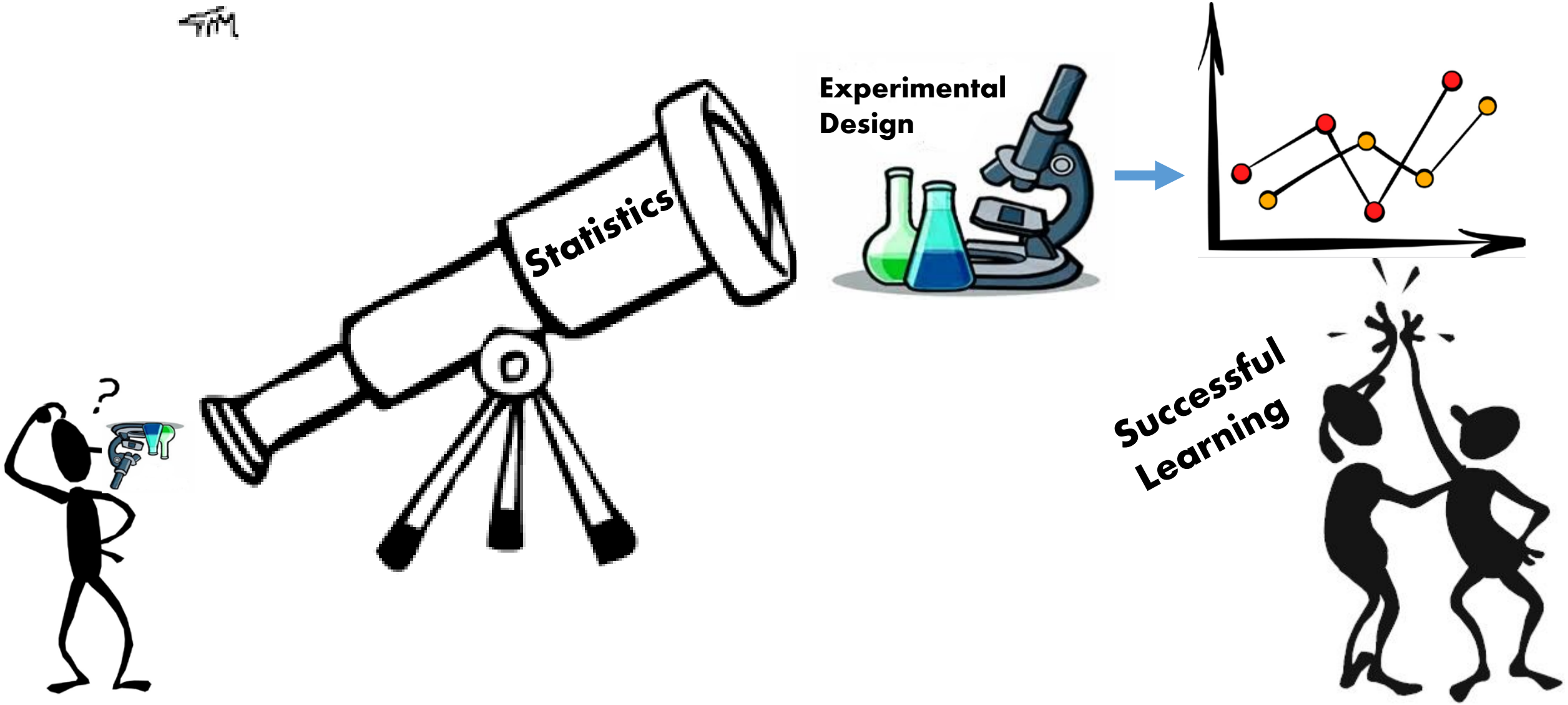
Philosophy of approach

Information

Assimilation and application

Understanding and Knowledge

A Statistical View of Experimental Design



Our Structure for Delivery

LSC101- Biology Principles and Practice

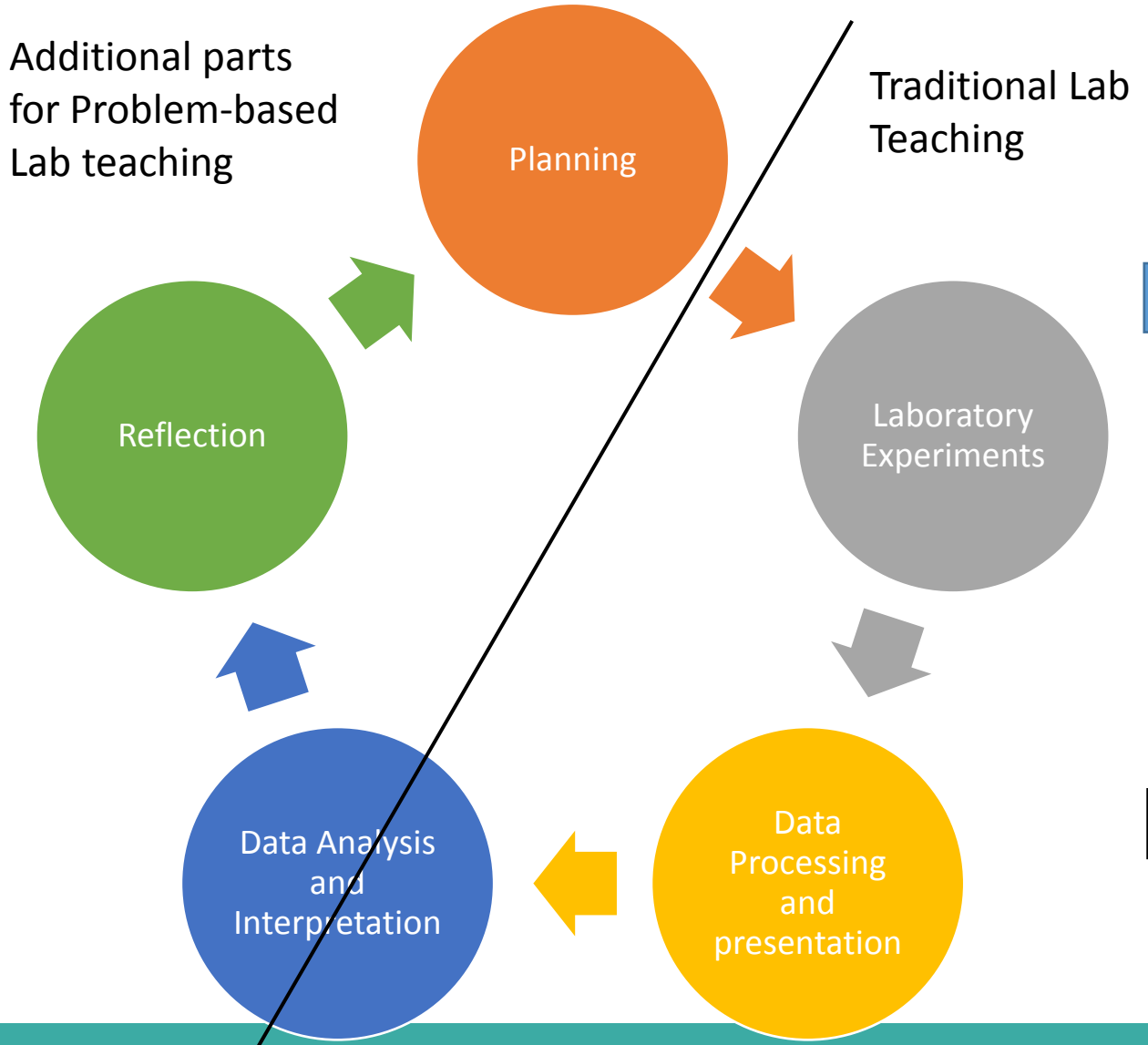
LSC305- Applications mini-project

Weeks 1-8
Skills Teaching Labs (3hr/week)

Scientific Numeracy & Statistics
Flipped Classroom (1 hr/week)

Lab skills from previous modules
+ 2hr session for lab skills refresh

Statistics & Experimental design
Flipped Classroom (4 x 2hr tutorials)



1 hour weekly tutorial

3 hour labs on weeks 10, 12
3 hour unsupervised tutorial weeks 9, 11, 13

1 x 3 hour dry lab for planning

1:1 group session every week (20 min)

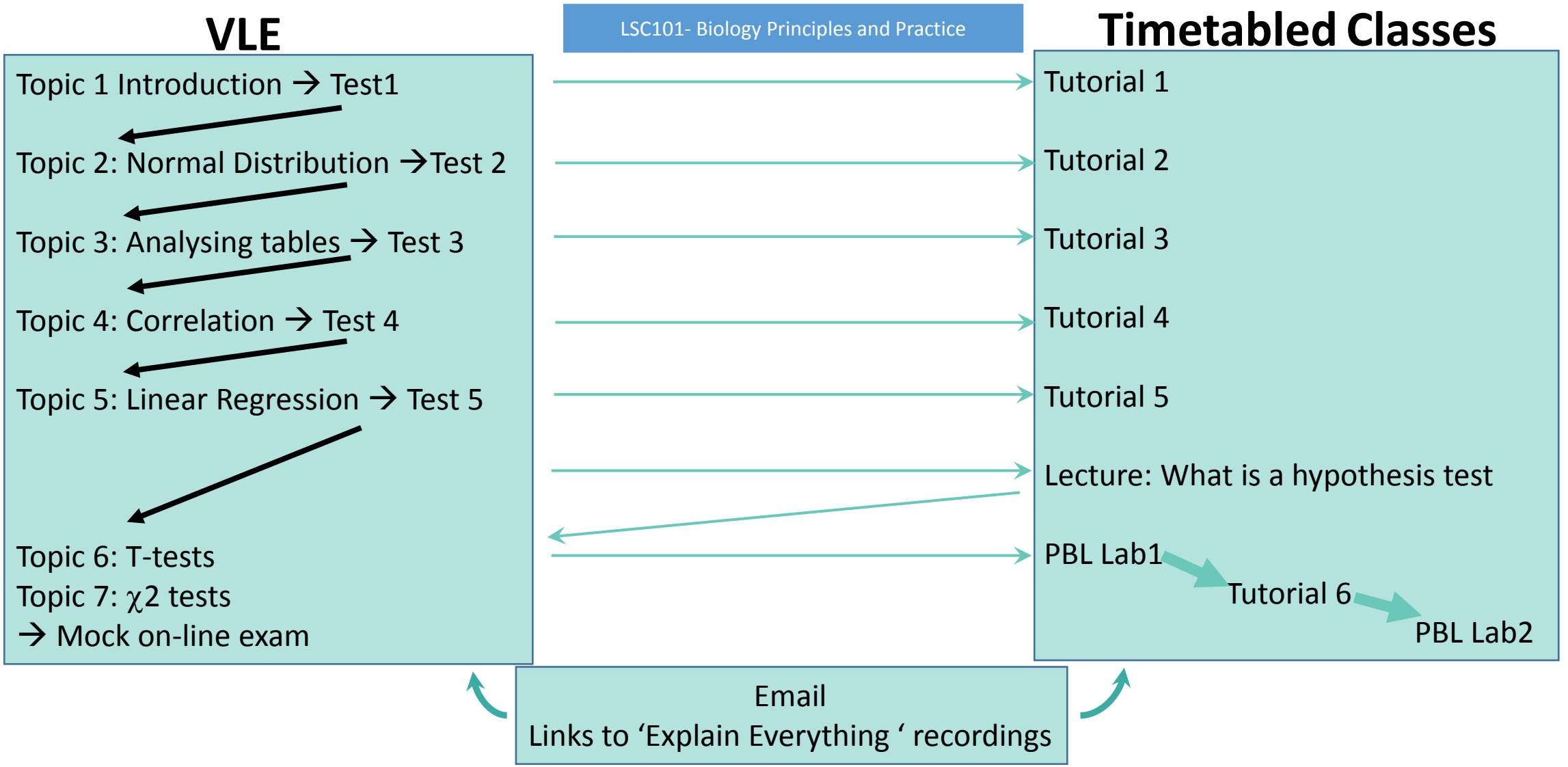
4 x 2hr tutorials for stats review and clinics

6 x 3 hour labs (2 blocks)

2 cycles

6 cycles

How we Deliver Statistics: Harnessing the VLE



Delivery: Empowering Students

- Personal responsibility for work
- Ability to work around interests / ideas
- Understand whole process of laboratory science
- Can work at own pace (scaffolded with guidance)
- Develop working relationships with others: peers, academic staff, technicians, librarians
- Builds confidence in own abilities

Student Experience / Student Feedback

LSC101: I think the structure of the online numeracy part to the course is a fantastic way to run the tutorials and wish more modules would incorporate something similar

"statistics are really interesting when you are using it on your own data"

"As a group we had to figure most of the things out by ourselves"

"I have learnt to be more independent"

"The module brought together multiple skill sets to solve a real life problem, rather than just remembering information"

Wider Learning / Employability

Intellectual

- Mastery of subject information
- Understanding of the process of scientific investigation

Professional

- Problem solving
- Working independently
- Working collectively

Personal

- Determination
- Responsive and responsible to others

Benefits and Challenges

Benefits	Challenges
Interdisciplinary thinking	If you do not engage, hard to succeed
Promotes Deeper Learning	Requires active learning
Promotes engagement	Requires working well with others
Communication / Organising skills	Building confidence can be difficult
Increased student engagement	Needs buy in from all staff delivering
Better outcomes (PIs)	Timetabling
Promotes discussion / interaction with students	Giving away control
Flexible content	Needs very good technical support and logistics
Preparation for Honours Project	
Varying starting points of learners	

*Red=students, Black=academic staff