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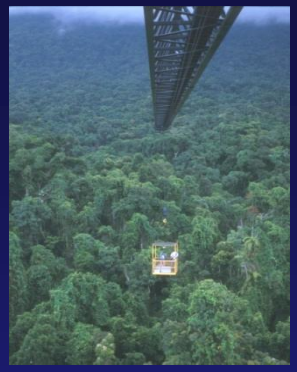

Enhancing the impact of fieldwork on student learning:

understanding the diversity of experience

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University of Roehampton

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Outline of session

- Introduction
  - Background
  - Results of research project
- Activity
  - Experiences of learning outside the classroom

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Learning outside the classroom

- Fieldwork in the biosciences has a positive influence on learning across the three learning domains:
  - cognitive, psychomotor and affective
  - it encourages ‘deep learning’
- Maskell and Stokes (2008)

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Benefits to students

- acquisition of knowledge
- development of practical and cognitive skills
- improvement of self-esteem
- engagement and
- teamwork skills

(Boyle *et al* 2007)

- Biologists have long taken fieldcourses as a given, but belief is no substitute for evidence

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Key Questions

- To investigate how fieldwork affects the affective domain
  - How do attitudes change as a result of engaging in fieldwork?
  - How do students value the experience?
  - Assessed data by year group and gender

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Outline of study

- All UGs on field courses/trips were invited to complete pre- and post course questionnaires (following Boyle *et al* 2003), anonymously and without compulsion
- Year 1: Wimbledon common, Brockham Lime Kilns
- Year 2: 1 week residential, Swansea
- Year 3: 2 day residential, Devon

Boyle, A., Conchie, S., Maguire, S, Martin, A., Milsom, C., Nash, R., Rawlinson, S., Turner, A., Wurthmann, S. (2003) Fieldwork is Good? The Student Experience of Field Courses. Planet Special Edition 5 - Part B Pedagogic Research in Geography, Earth and Environmental Sciences

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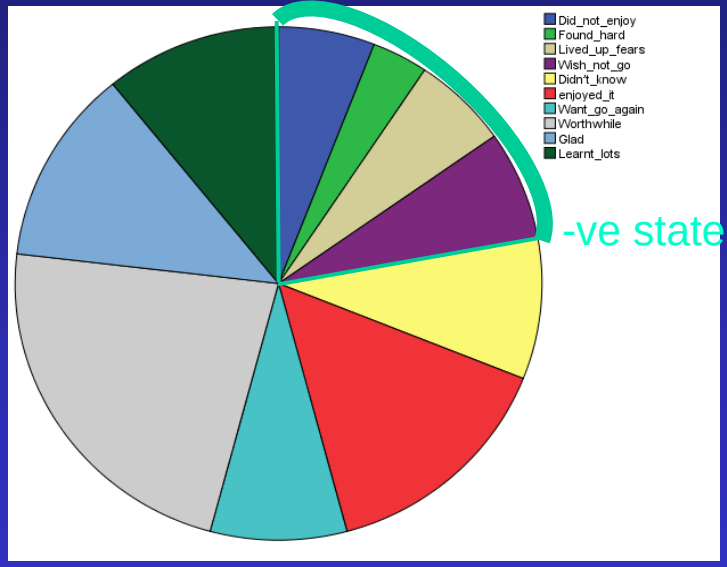
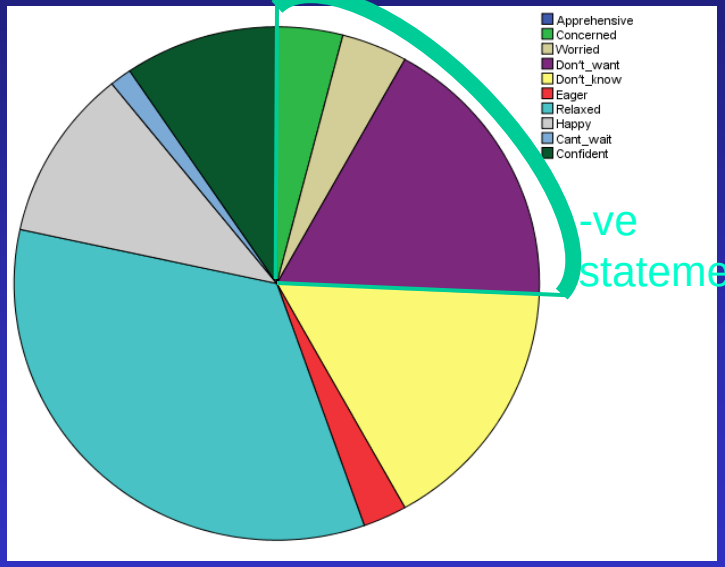
Year 1: Pre and post-fieldwork responses



Pre-field trip questionnaires were completed by 25 students (9 males and 16 females)



Post-field trip questionnaires were completed by 23 students

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A wordle word frequency summary of comments for the Year 1 field visits (www.wordle.net)

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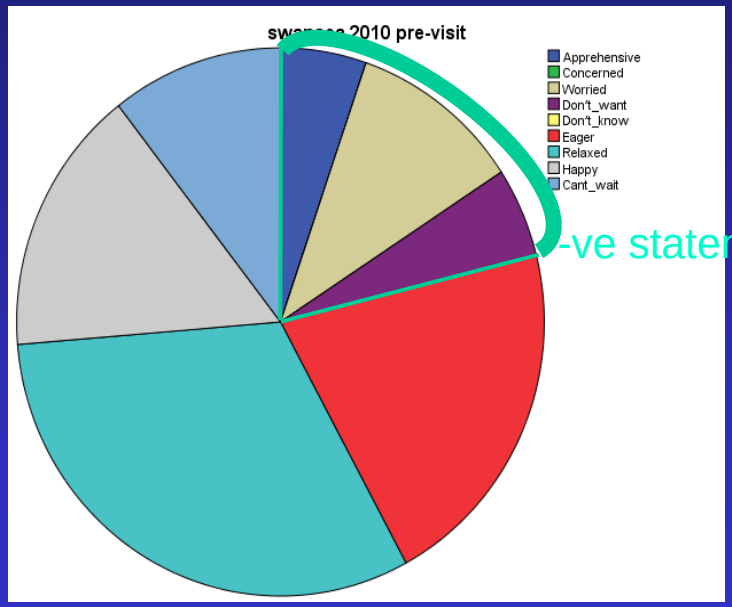
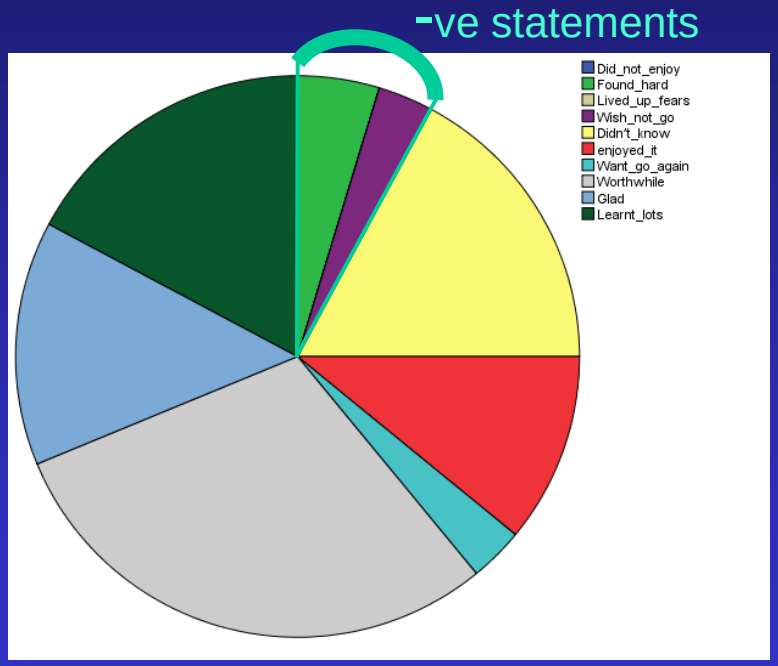
Year 2: Pre- and post fieldwork responses





Pre-field trip questionnaires were completed by 15 students (11 females and 4 males) and post-field trip questionnaires filled in by 18 students (9 females, 3 males, 6 unknown)

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Statement	% of students that selected 'agree' on departure	% of students that selected 'agree' on return	Likelihood ratio chi-squared value	Degrees of freedom	Probability
I feel confident in being able to work with others	67	94	4.474	1	P<0.05
I use colleagues as an information source	40	78	4.992	1	P<0.05
I like to be challenged in fieldwork	20	61	5.918	1	P<0.05
I am not fazed by having to use technical equipment	40	83	6.851	1	P<0.01

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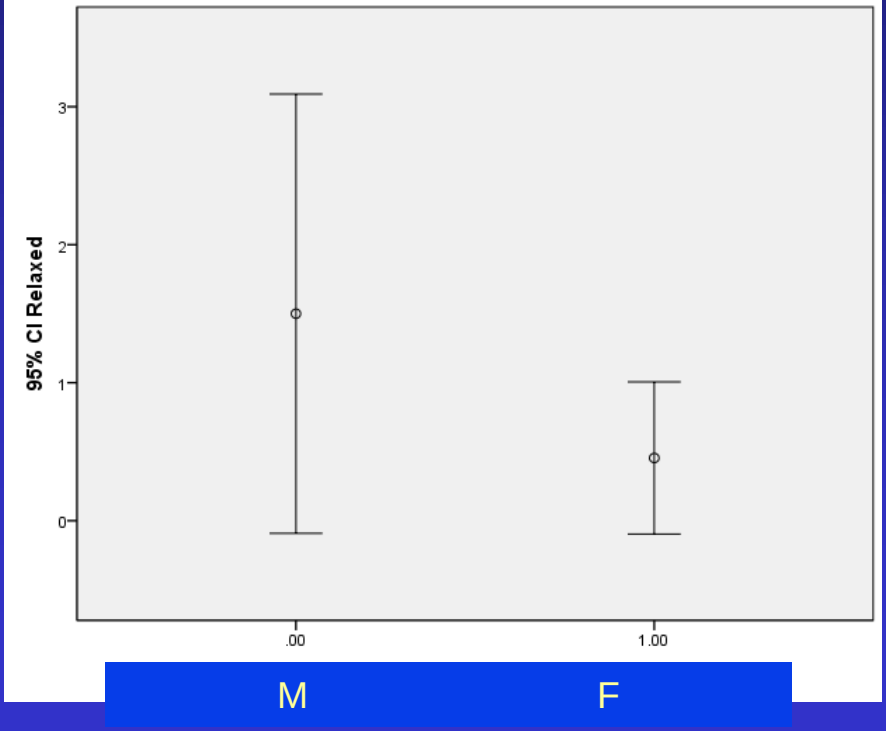
Gender difference

Year 2: “Relaxedness” about the course, by gender

“Relaxed “ 0 -3
mean+-sd



males were (weakly) more likely to select ‘relaxed’ than females (Kruskal-Wallis anova: $\chi^2 = 3.3$, $df = 1$, $p<0.10$) but overall the sex difference in scores was negligible

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A wordle overview of the comments added

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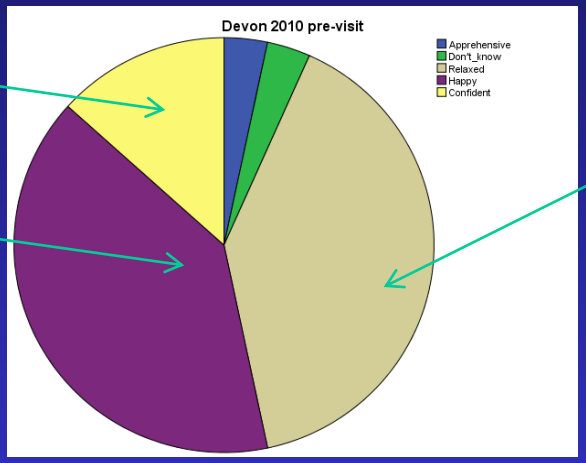
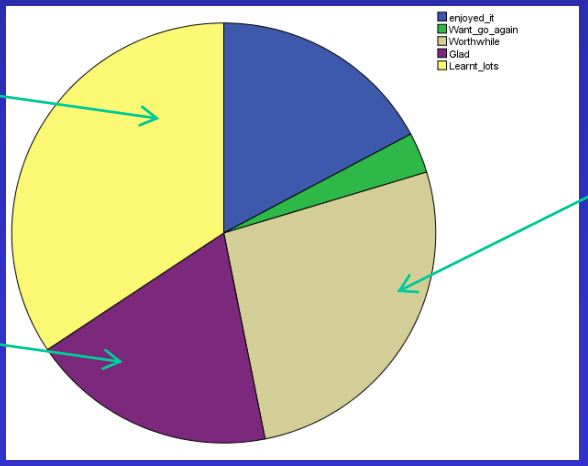
Year 3 : Pre and post fieldwork responses



Confident

Happy

Relaxed



Confident

Happy

Relaxed

Pre-field trip questionnaires were completed by 5 students (4 females and 1males) and post-field trip questionnaires filled in by 7 students (6 females, 1 male)

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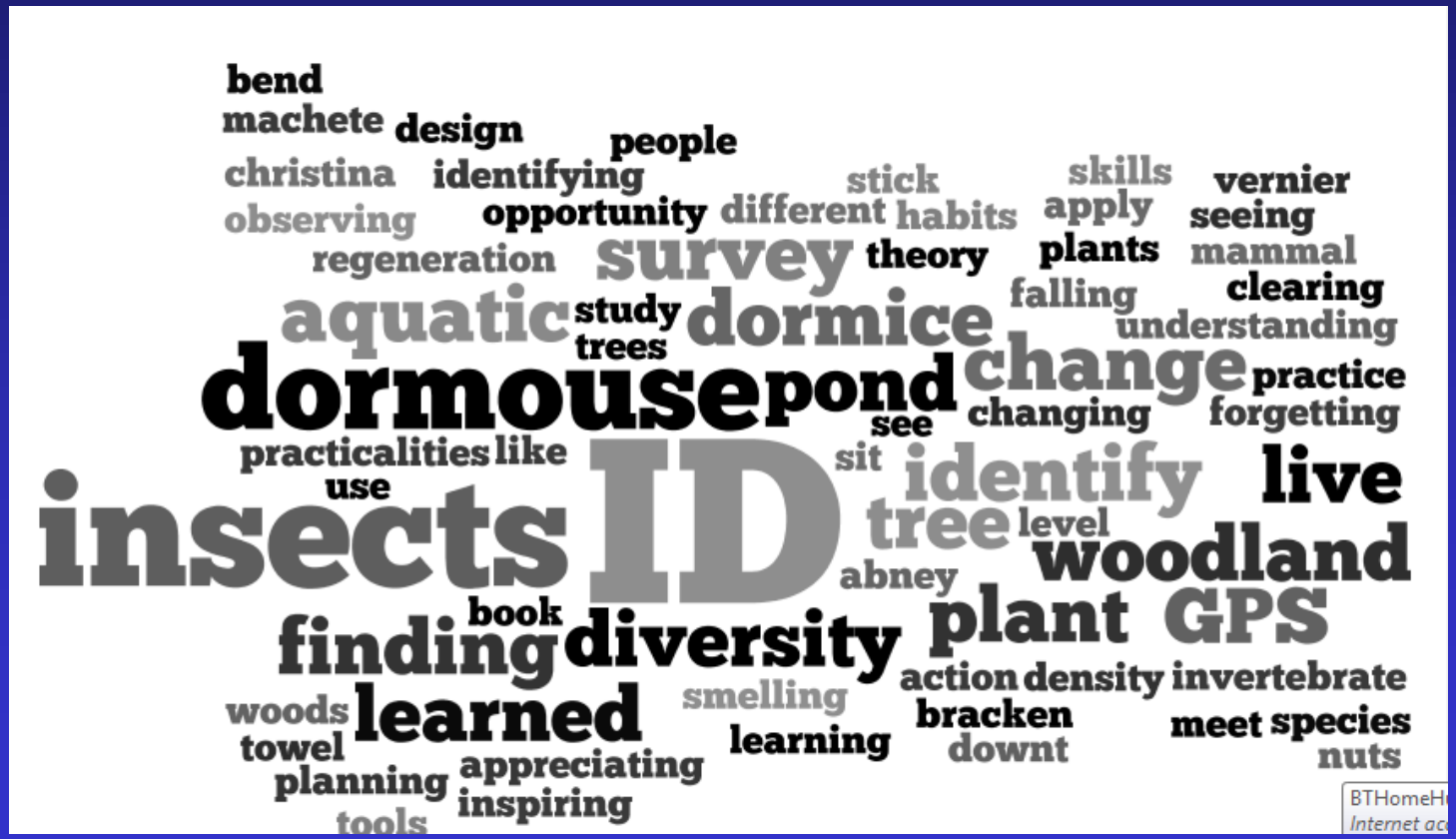
A wordle overview of the comments added



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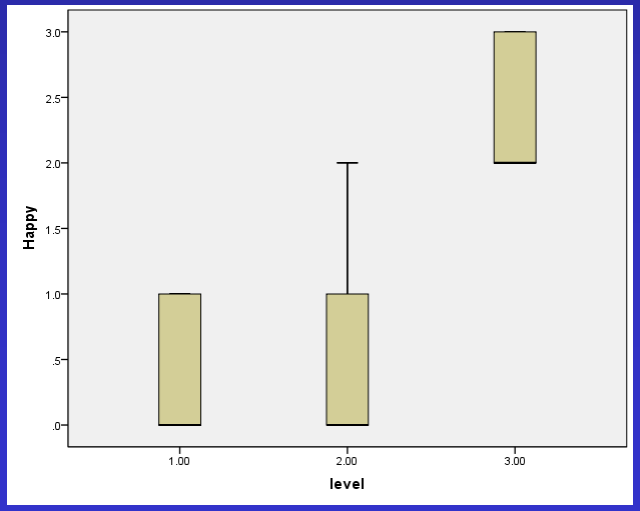
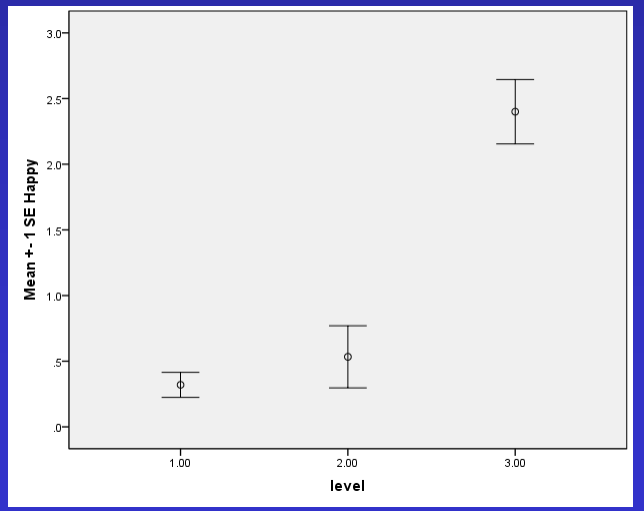
Comparison between years: Pre- field visit

- The first two courses caused about equal amounts of apprehension
- For the pre-visit scores that differed $p<0.05$ between years (K-W anova), the picture is consistent

"Describe your feelings about going on fieldwork": Happy ($\chi^2 = 15.4$, df=2, $p<0.01$)





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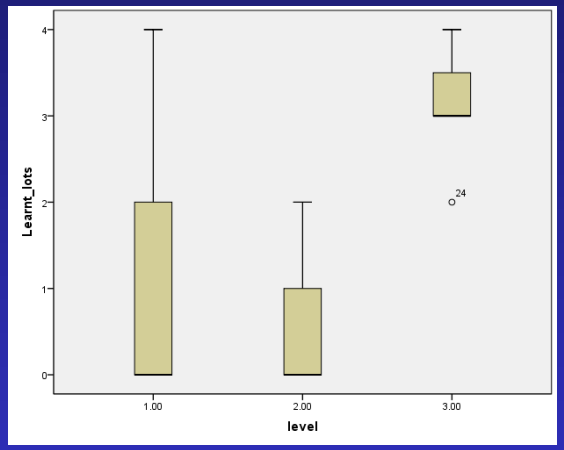
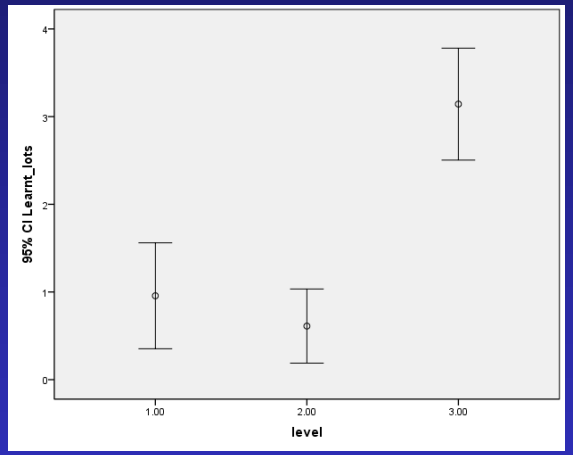
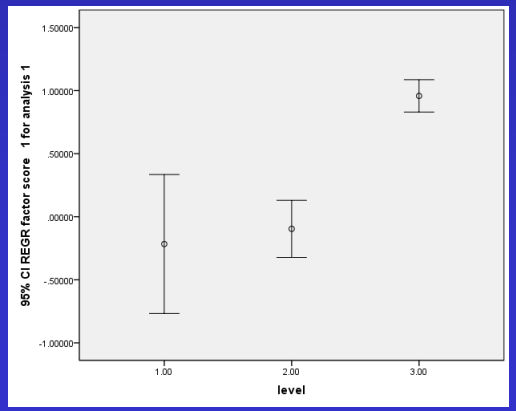
Post field work: one variable was significant:

"Learned lots", $\chi 2 = 15.5$, df=2, $p<0.05$





First axis score, Post – visit attitudes



Same story by PCA

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Questions about knowledge

Pre Field- work

- Fieldwork will increase my knowledge of my degree subject
- First hand experience of themes/topics etc. studied in class makes it easier to understand them
- Fieldwork gives me a chance to develop my problem solving skills
- University courses in this subject all undertake fieldwork so it must be important

Post Field- work

- This fieldwork has increased my knowledge of my degree subject
- First hand experience of themes/topics etc studied in class has made it easier to understand them
- Fieldwork has given me the chance to develop my problem solving skills
- University courses in this subject all undertake fieldwork and I can now see why it is important

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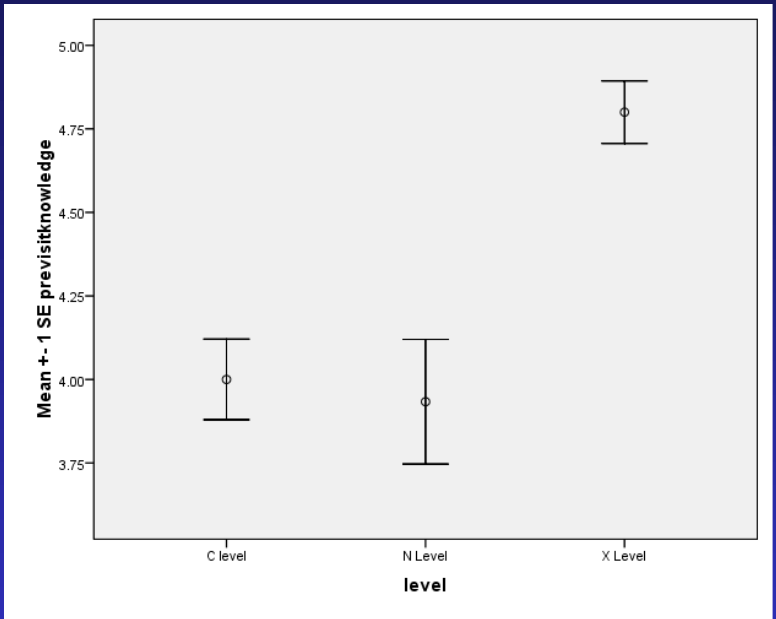
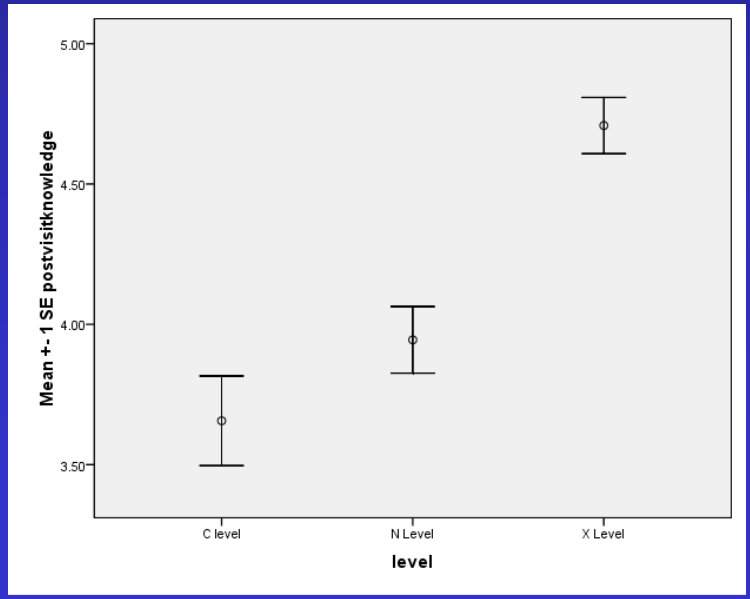


Pre-field visit: Yr 3 > Yr2 and Yr1 Level P<0.05

Post field visit: Yr3 > Yr2 and Yr1 Level P<0.01 spearman's r is p<0.01 so the simplest model is "steady progression"



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Activity

- How do you prepare students for learning outside the classroom?
- What are your experiences of using learning outside the classroom?
- How do your students respond to the experience?

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We leave you with an observation that we have known for years:

You get to know people properly on fieldwork

We would add, this includes getting to know your self