

TEACHING ENHANCEMENT PROJECT

**Programmed learning to
replace undergraduate
lectures.**

P.Chevins, Life Sciences



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THE PROBLEM

- Recall of lecture material poor in revision tutorials.

THE SOLUTION

- Encourage more *active learning*.
- “*Great teachers stimulate active, not passive learning...*” (National Committee of Enquiry into Higher Education, 1997 and Keele L & T Strategy).



THE PLAN

- Replace some lectures with prescribed reading.
- Follow with weekly formative objective test.
- One week later, *summative* test on the same material.
- Compare exam results with new and conventional teaching method.



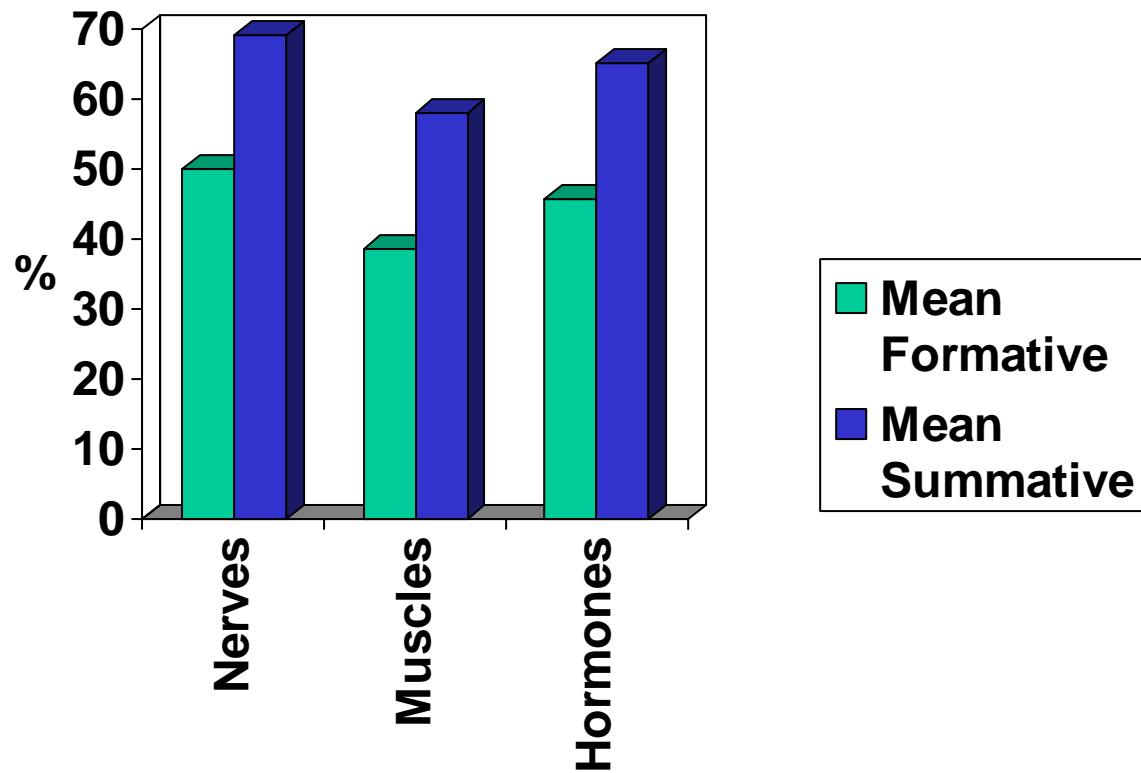
THE PROGRAMME

Year 2 Animal Physiology Module

- **Weeks 1- 5** Conventional Lectures: Salt Balance, Excretion, Respiration and Cardiovascular Physiology.
- **Week 6** Intro. To Nerve Physiology.
- **Week 7** *Study Week*
- **Week 8** **Formative test (nerves) + questionnaire.**
Feedback and Intro. To muscle physiology
- **Week 9** **Test 2: nerve (summative) + muscle (formative).**
Feedback and Intro. to endocrine physiology.
- **Week 10** **Test 3: muscle (summative) + endocrinology (formative). + Feedback**
- **Week 11** **Test 4: endocrinology + Feedback**

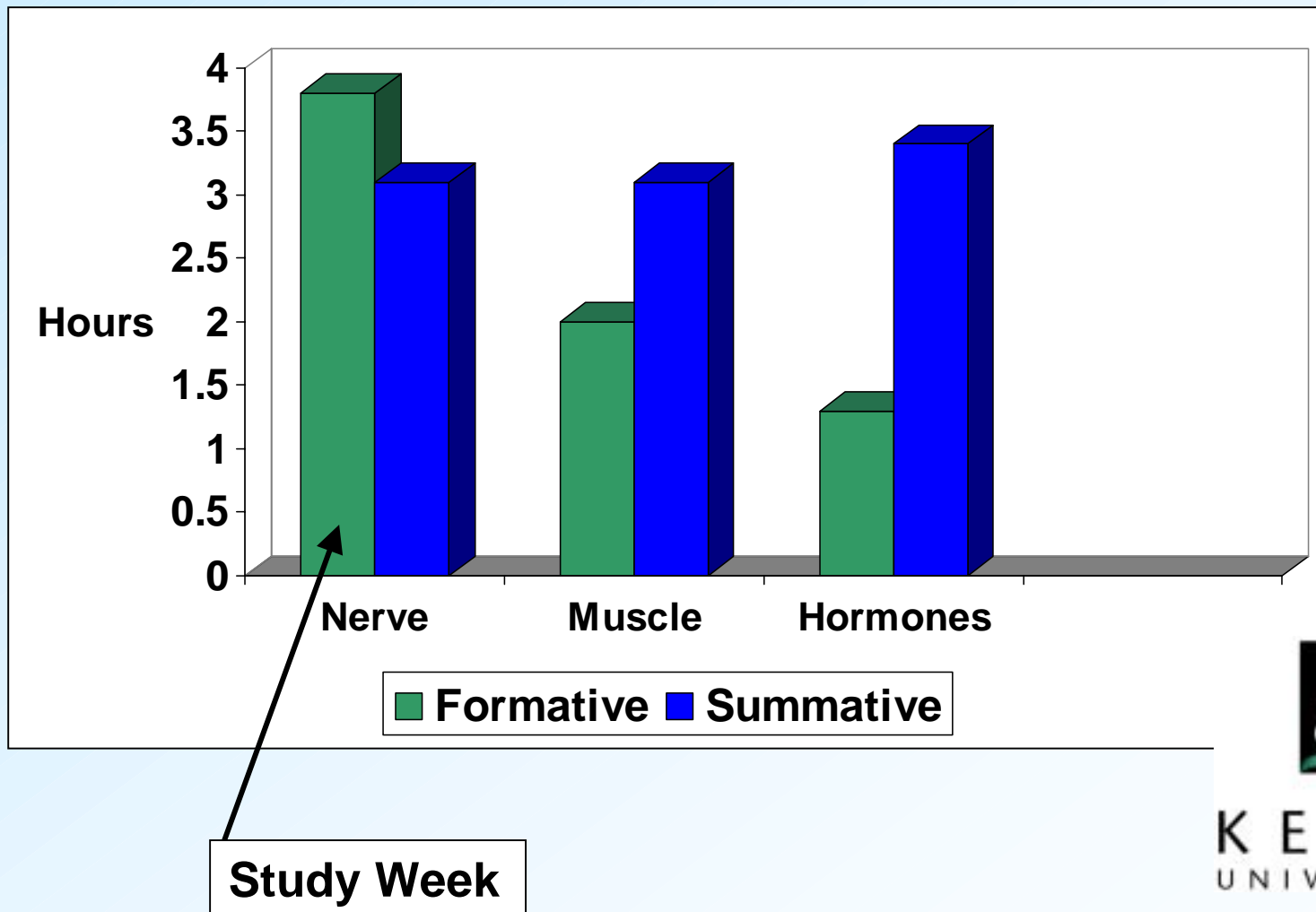


THE RESULTS - OBJECTIVE TESTS



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WEEKLY STUDY HOURS



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THE RESULTS - QUESTIONNAIRE

23 RESPONDERS OF 24 (Week 1)

STUDY TIME

- Increased from 1.2 to 3.8 hours per week (mean)

WORKLOAD

- Just right:12 Too much:11

PART-TIME JOB?

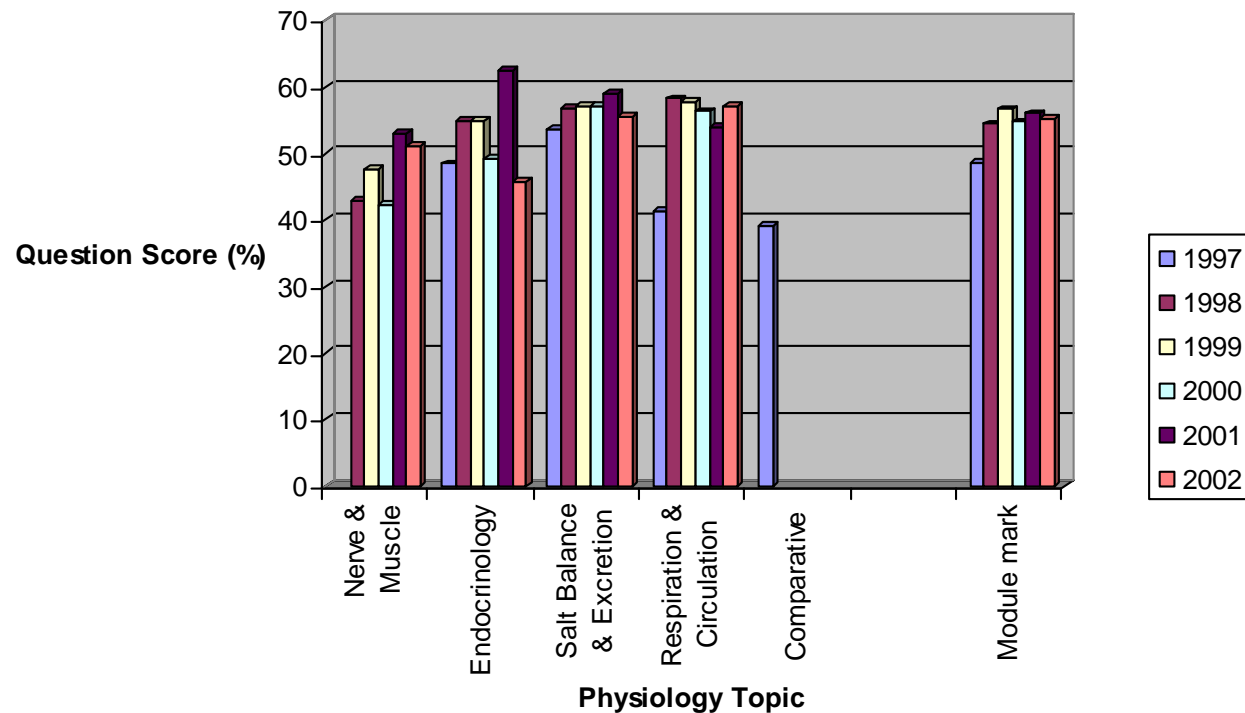
- 9 out of 23: mean 10.2 hours weekly



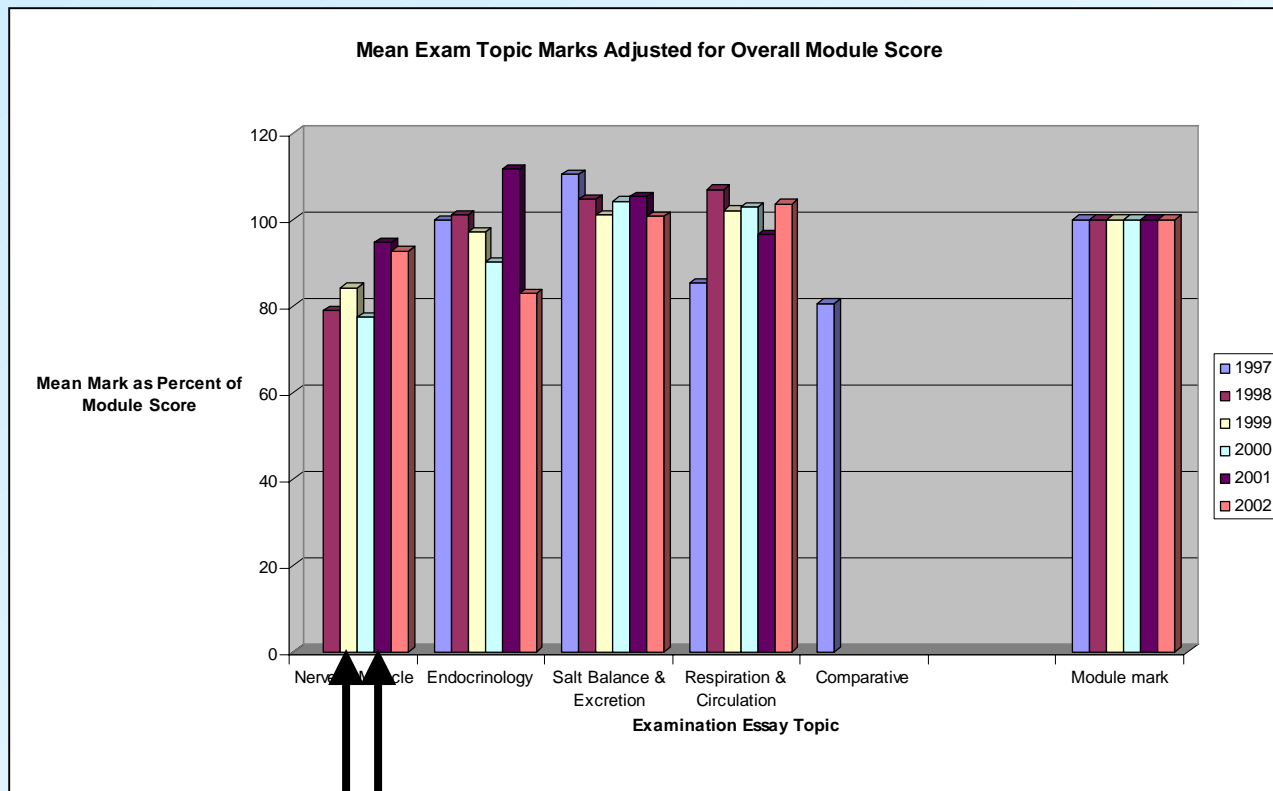
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THE RESULTS - EXAMINATIONS

Year Comparison of Examination Marks by Topic



THE RESULTS - EXAMINATIONS

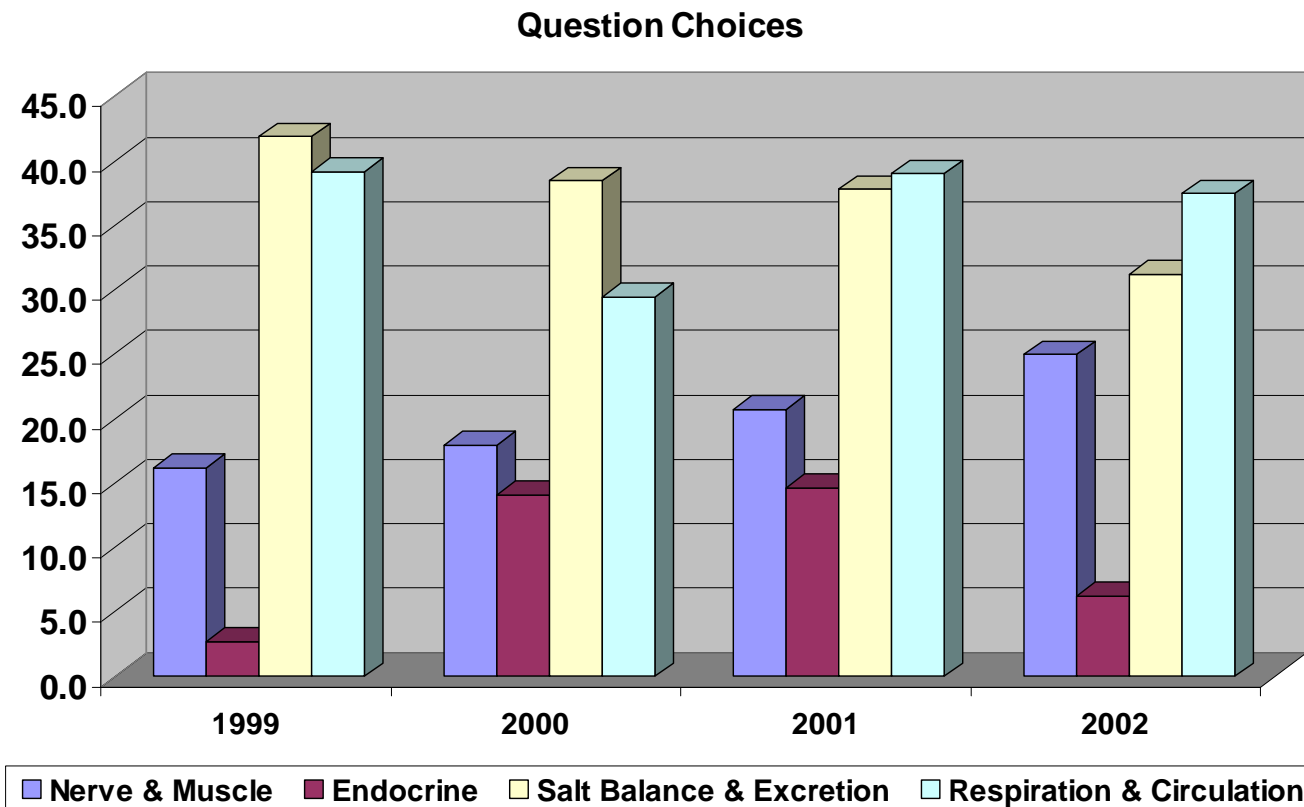


$p = 0.06$ (Student's t)



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EXAMINATIONS - QUESTION CHOICE



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CONCLUSIONS and PLANS

- The experiment was a qualified success.
- Administer tests by CAA in future.
- Formative tests on module web pages.
- Use web discussion to provide student learning support.
- Thanks to Keele Teaching Enhancement Fund and to LTSN Bioscience for financial support.



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