

Tablet PCs in Bioscience Instruction Amongst Diverse Student Cohorts

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- The Degree Programs
 - Bachelor of Nursing (Pre-registration)
 - Bachelor of Biomedical Science

- The Courses
 - NSC1500 Biophysical Sciences in Nursing
 - Large cohort: $n \approx 250$
 - First year

 - BIO2205 Introductory Microbiology
 - Smaller cohort: $n \approx 45$
 - Second year

General attitudes toward science study...

Nursing students	Biomed (Science) students
Consider subject difficult	Generally not as difficult
Poor attitude toward relevance	Good attitude to science
Lack confidence	More confident
Feel unprepared	Generally more prepared

■ Nursing

- Annotating and screen capture of live lecture recordings
- Effective as a 'leveller'
 - chemistry and biochemistry

■ Biomed students

- Trialled in an introductory microbiology course
- Emphasis on the use of Tablet PC to promote visual learning strategies
 - Flow charts and concept maps

Educational strategies introduced

- The learning environment
 - ICE
- Lectures
 - Tablet PC & screen capture software
- Practical demonstrations
- Videos
- Self directed learning
- Online quizzes

What the NSC1500 students say...

NSC1500

	Strongly disagree	Moderately disagree	Neither agree nor disagree	Moderately agree	Strongly agree
Written examples worked during the chemistry lectures using Tablet PC enhanced my understanding of the course material.	-	-	8	15	16
The lecturer appeared comfortable with the technology used in lectures.	1	4	2	12	20
I prefer lectures when the lecturer writes on the computer.	2	1	9	11	16

Some open ended comments:

“The chemistry recorded lectures & face to face lectures were most helpful because we were able to see writing & working out on screen.....”

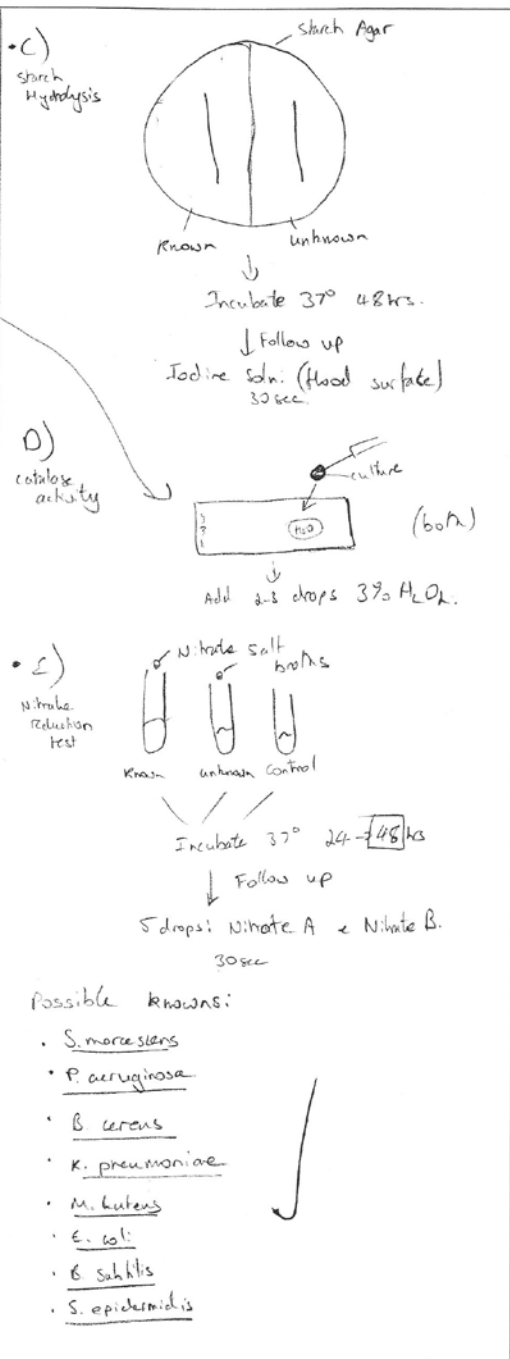
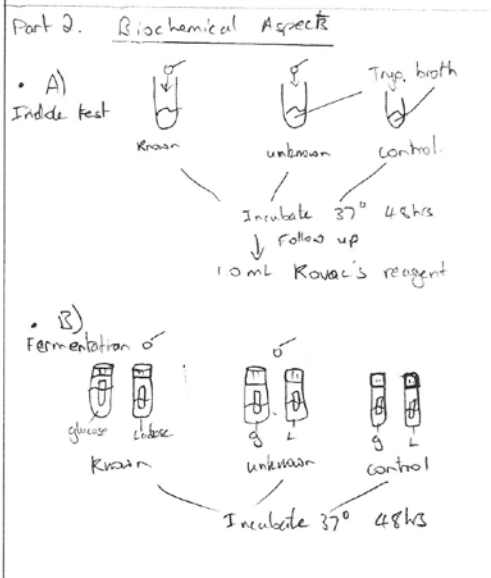
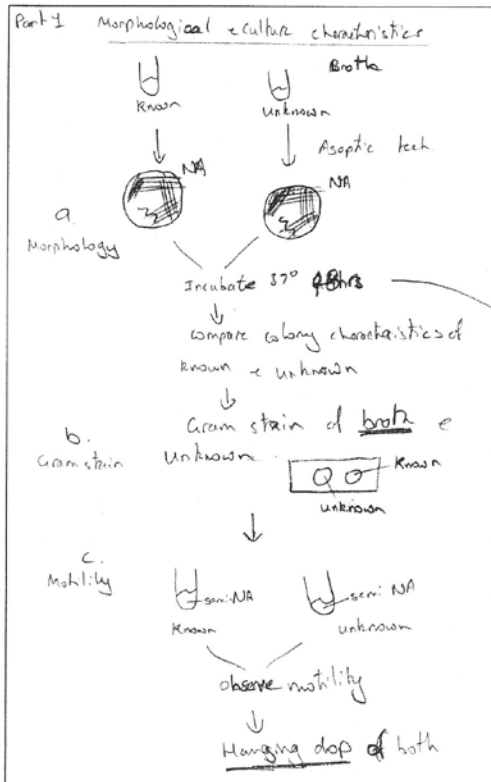
“The lecturer used to write on the lecture slides differently. She would write on the slides as she was speaking making it heaps easier to understand...”

“...I feel that the lectures where you wrote things in red to explain things (sorry don't know the technical term!!) really helped me understand the content. I think these should def continue to be part of your teaching style despite the technical problems you experienced.”

Case study 2: BIO2205

- Lectures
 - Tablet PC & screen capture software
 - Use of dynamic concept maps during and at the end of lectures
- Use of flow charts to
 - Prepare for practical lab sessions
 - Presentation of lab exercise results

Flow diagram of flow chart instruction

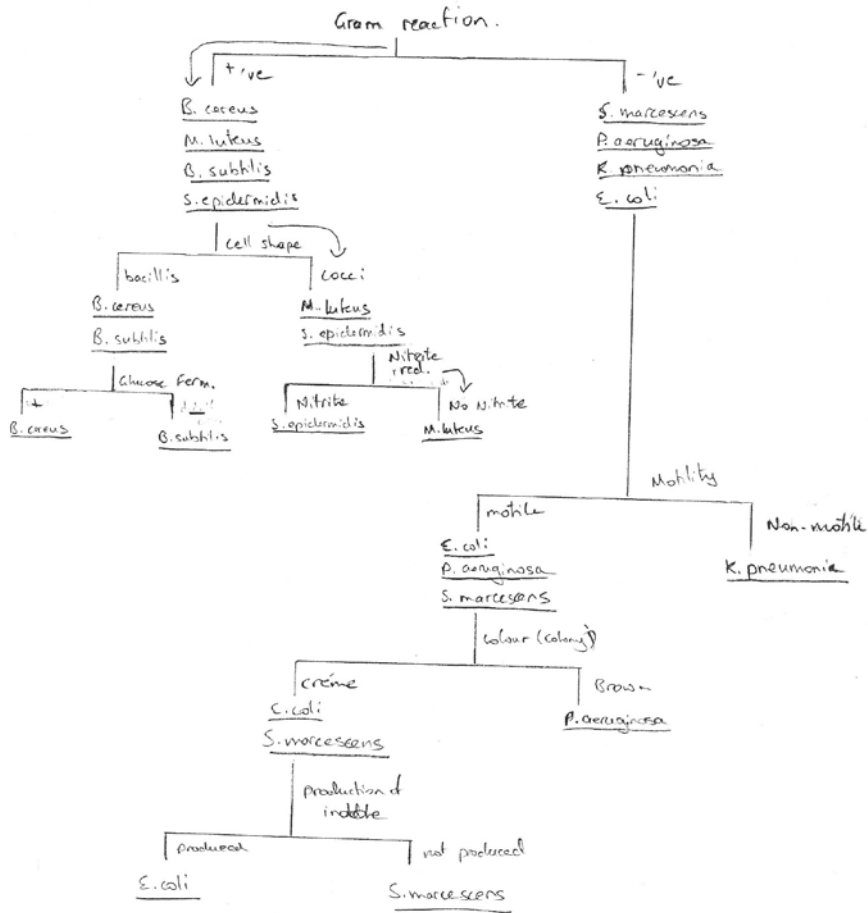


Student examples: Flow charts

3. Construct a dichotomous key to determine the identity of your unknown culture (10 marks)



Student example: Dichotomous key



From the above dichotomous tree, Unknown A is: M. luteus. ✓

Key well laid out 10



What the BIO2205 students say...

	Strongly disagree	Moderately disagree	Neither agree nor disagree	Moderately agree	Strongly agree
The use of the Tablet PC was helpful in constructing concept maps and flow charts	-	-	3	13	17
The annotations of the lecture notes helped me understand the course better	-	-	4	17	12
The writing/drawing using the Tablet PC was easy to read and follow	-	1	2	11	18
The live recording of the concept maps and example flow charts during the lecture helped in understanding how they were constructed	-	1	4	13	15

Some open ended comments:

“Flow charts with Tablet PC are a very good idea. We walk into the labs more prepared and have a better understanding. It would be good for other courses too...”

“I feel I’ve gained a lot from the course. The concept maps were very helpful but although the flow charts were annoying to construct, they were in fact very, very helpful!”

Concluding remarks

Some (bio)science disciplines lend themselves more to the use of Tablet PC Technology

However,

Tablet PC Technology can also be useful to promote alternate learning strategies in other (bio)science disciplines