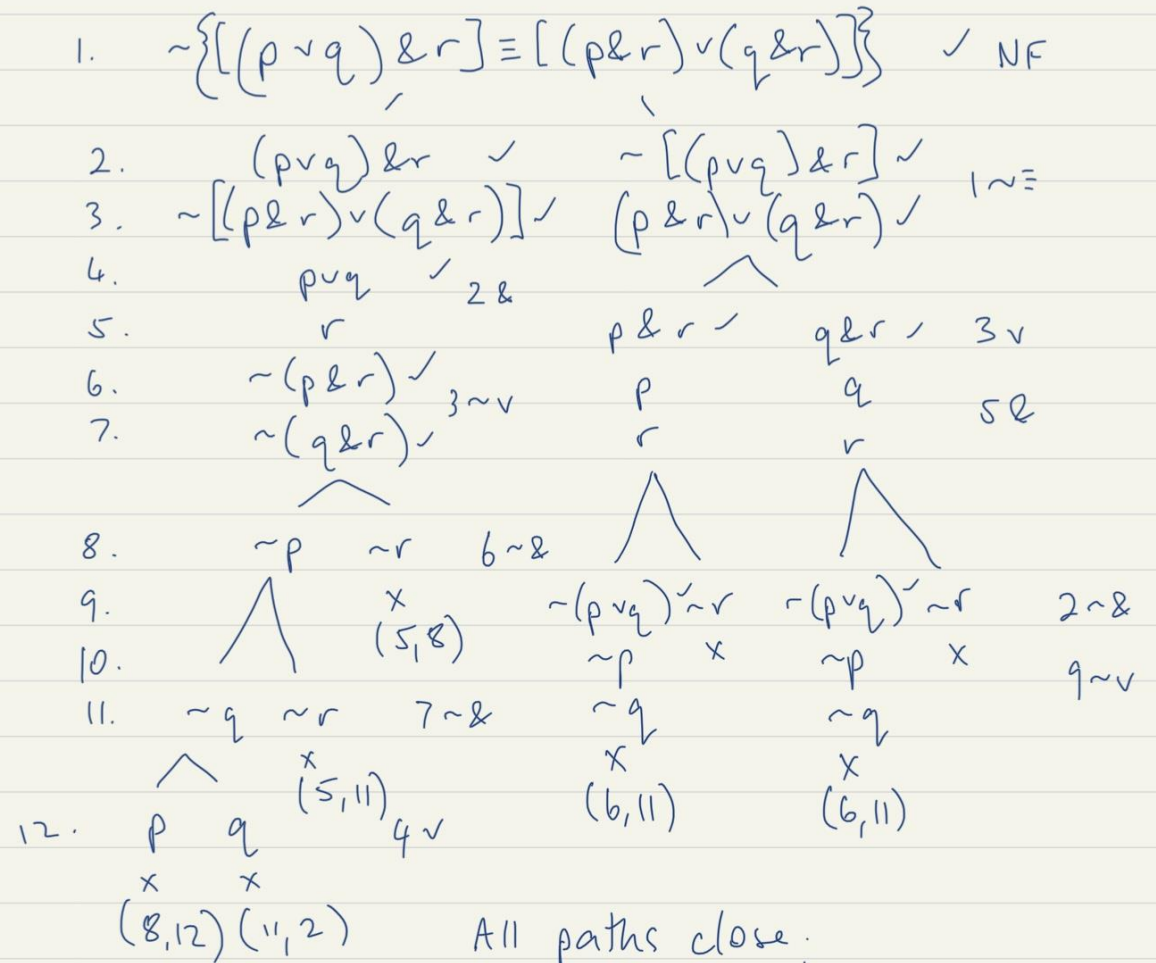


Using oral assessment to protect academic integrity in a first-year logic course

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All paths close.
 It is not possible to make the formula false.
 \therefore It is a tautology.

The challenge: replace three in class tests with an online alternative

I wanted to

- Allow for lockdown circumstances
- Avoid special software or equipment
- Limit cheating

Solutions

- Tests became open book quizzes
- Students draw answers on paper, photograph with their phones, and upload the answers
- A question bank is used so students don't all get the same questions

Further integrity issues

- A question bank limits the ability of students to share questions and answers *with one another*
- But there are online tools that can provide solutions
- I need to be able to assess their *understanding*
- Additional assignments would take time to mark, and didn't fit well into the course
- So I introduced a 5 minute oral component to each online test, over zoom

Logistics

- Appointments were booked through google calendar appointment slots
- A zoom room was put on Moodle. Remember to activate the waiting room!
- I brought up one of the student's answers on the shared screen, and asked 1-2 questions about it
- 5 minutes per oral
- There are no marks attached to the oral itself
- Marked tests were not released until the student had satisfactorily completed the oral component

If you complete Part B using the Moodle quiz you also need to complete a zoom interview about your test answers.

[You can book a time for the oral component of Test 3 here.](#) Note that you must have completed Part B of the test to do your oral component.

Test orals

The oral component of tests will be conducted in this zoom room. [You can book an appointment slot here.](#) Note that you must have finished Part B of your test to do the oral component.

Test 1

Monday 8 August

Test 1 Part A

Opened: Monday, 8 August 2022, 7:00 AM

Closed: Monday, 8 August 2022, 11:59 PM

[Receive a grade](#)

Keeping it positive

- I ask about one of their good answers. (The oral isn't a test. It's a *check*.)
- I keep the questions easy. (It tells you more if they can't answer an easy question.)
- If a student gets it wrong, I just ask another question - particularly if the mistake is a common or understandable one
- I put the emphasis on understanding

The screenshot shows a digital whiteboard with the following content:

Testing for validity

1.	$(\forall x)(Sx \supset Fx)$	$\downarrow a$	P
2.	$(\forall x)(R_x \supset Fx)$	$\downarrow a$	P
3.	$\sim(\forall x)(R_x \supset Fx)$	\checkmark	NC
4.	$(\exists x)\sim(R_x \supset Fx)$	$\downarrow a$	3 QN
5.	$\sim(R_a \supset F_a)$	\checkmark	4 EI
6.	$S_a \supset F_a$	\checkmark	1 UI
7.	$R_a \supset F_a$	\checkmark	2 UI
8.			
9.	$\sim F_a$		5 \supset
10.	$\sim S_a$	F_a	6 \supset
11.	$\sim R_a$	F_a	7 \supset

Tree diagrams for lines 9, 10, and 11:

- Line 9: A tree with root $\sim F_a$ and two branches.
- Line 10: A tree with root $\sim S_a$ and two branches: $\sim S_a$ and F_a . The F_a branch is marked with an 'x' and labeled '(9,10)'. An arrow points from the root to the F_a branch.
- Line 11: A tree with root $\sim R_a$ and two branches: $\sim R_a$ and F_a . The $\sim R_a$ branch is marked with an 'x' and labeled '(9,11)'. An arrow points from the root to the F_a branch.

Additional text at the bottom of the whiteboard:

$F_a = T$
 $S_a = F$

The whiteboard interface includes a toolbar at the bottom with icons for Pen, Highlighter, Line, Arrow, Rectangle, Oval, Text, Color, Eraser, Undo, Redo, and Clear. A video feed of Stephanie Gibbons is visible in the bottom right corner.

Easy question: What rule should be applied to line 3?

Harder question: What would you do to test the counter-example?

Unexpected benefits

- In a course without lectures, I got to meet every student in week 4
- With paper tests, students don't pick up marked scripts. Here they engage with the test they've just done
- Students are more likely to attend help sessions or make appointments after the oral
- After getting an easy question right, students often want to ask about something they found hard. Lots of learning happens
- Students share things they might not tell you otherwise

What do the students think?

- It's different, and so a bit scary. But they don't hate it
- The most common reaction at the end of the first oral is "is that it?"
- Over two years, *no one* has listed it on a course evaluation as one of the three things the course should change
- I don't hate it either
- I introduced this for academic integrity reasons. But I now think it is just good assessment design.