

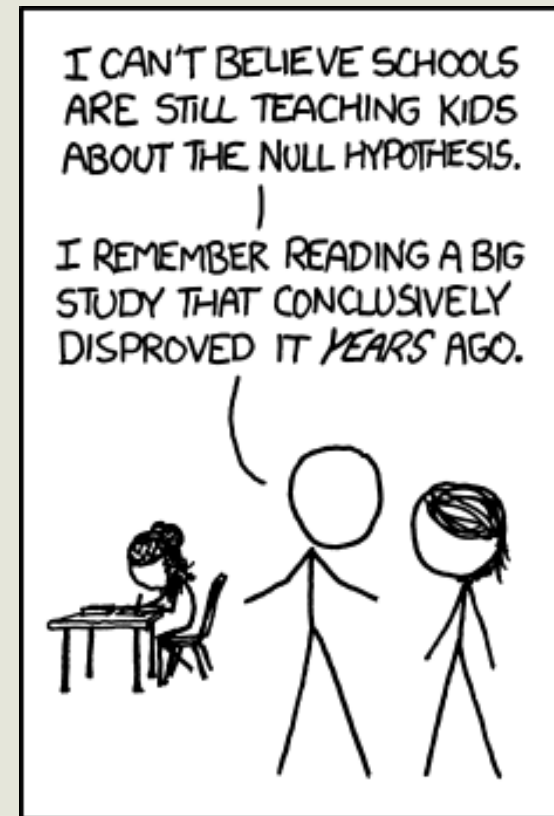
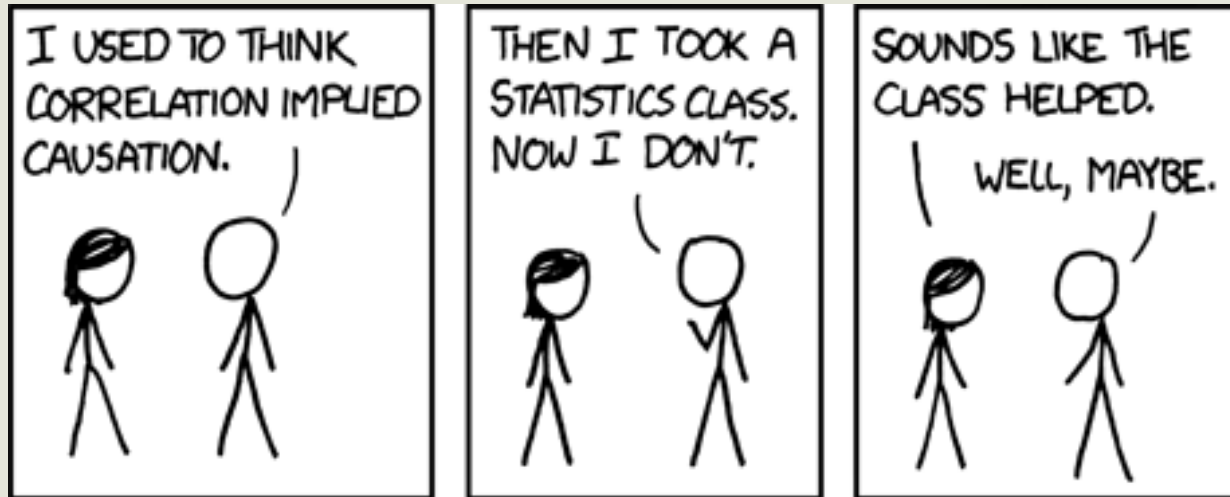
The background is a dark grey chalkboard with various white chalk drawings. On the left, there's a large drawing of a microscope. Above it, a globe of the Earth is visible. In the bottom right, there are mathematical symbols like a percentage sign, an exclamation mark, and a less-than sign. In the bottom center, there's a drawing of an open book with some scribbles on its pages. The overall theme is educational and scientific.

Assessment Methods for Statistics Internals

Statistics Teachers Day 2017
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KIA ora

I'm Caitlin.



Source: xkcd.com

types of assessment methods used in **statistics** internals

There are many different ways to assess statistics internals, but WHY are we assessing in the way we are?

- Students
 - Results
 - Engagement
 - Preparing for future statistics courses or standards
- Teacher workload
- It is fun!

ASSESSMENT conditions

LEVEL 1 | 91035 | MULTIVARIATE DATA

Assessment of this standard involves an investigation. Sufficient time should be allowed for students to pose questions for use in the investigation and complete the analysis and conclusions.

Teachers will check the student's investigative questions, and, where required, provide time for students to correct or improve their questions before beginning the second session. Where more than minimal feedback is needed in order for the student to pose a suitable question, the student is not ready for assessment against this standard.

Context must be familiar to students and background detail provided with the data set. This includes at least:

- Details about the population
- The definition of variables
- The survey questions used to collect the data
- The source of the data

LEVEL 2 | 91264 | INFERENCE

Assessment of this standard involves an investigation. Sufficient time should be allowed for students to complete the investigation.

It is intended that students have access to a set of population data from which they are to pose a comparative question and then take random samples to analyse in order to answer that question. The population data set must be sufficiently large enough to show an need to sample.

The context must be familiar to students and background detail provided with the data set.

A further assessment opportunity must involve a new set of population data with a new context.

LEVEL 3 | 91582 | INFERENCE

Assessment of this standard involves an investigation. Sufficient time should be allowed for all students to complete the investigation.

Students are to be provided with a multivariate data set.

Background information related to the data set is to be provided to the student and the context should be one that is accessible and able to be understood by the students. This background information should be provided in advance to allow time for students to research the context to gain that understanding. Students should be sourcing relevant contextual knowledge about the situation under investigation from places such as the internet, the school or local library, newspapers and magazines. These sources should be referenced in the report.

For the investigative question to be an appropriate one, it is expected that a purpose for the investigation is evident.

It is expected that resampling methods be used for making formal inferences.

A further assessment opportunity needs to involve a new data set.

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ASSESSMENT myths

All students in the class must be assessed at the same time.

Offering different standards, tasks, or contexts to students in the same class:

- is not permitted
- provides an advantage to some
- is not fair.

Student assessment evidence:

- can only be used for one standard; no 'double dipping' is allowed
- must all be presented in the same way using the same context
- must be in writing.

Portfolio evidence means that students have multiple assessment opportunities.

The more evidence produced, the better the grade.

Students can resubmit evidence for the same standard multiple times.

ASSESSMENT facts

Students should be assessed when they are ready, where this is practical for the school.

Assessment should enable students to have a fair opportunity to achieve. For example not disadvantaging particular learners, such as those entitled to special assessment conditions.

Students in a class

- can complete different standards
- do not each need to be assessed for all standards offered.

Different tasks and/or contexts can be used to assess individual students, as the teacher's judgement is against the standard.

Evidence of achievement can be gathered in different ways, provided it meets the requirements of the standard, is authentic and can be verified.

Evidence can be:

- oral, a practical, a performance or digital
- gathered over time as a portfolio
- ongoing and integrated with learning
- naturally occurring
- gathered through observations and checklists
- written

WHAT ABOUT **authenticity**: MYTHS

Publically available tasks can be used unmodified.

All students need to complete their assessment at the same time to ensure authenticity.

Group work cannot be assessed.

Authenticity checks are not necessary if an authenticity declaration is signed.

Digital assessment allows more opportunity for authenticity breaches.

You can withdraw a student's entry for a proven breach of authenticity.

No further assessment opportunity is available when students present inauthentic work.

WHAT ABOUT **authenticity**: FACTS

Students do not need to complete the same assessment task and they do not need to be assessed at the same time. Some students may require a separate task or context to ensure authentic work is submitted.

- Break group tasks into group and individual components to identify individual evidence.
- Assessors can monitor the authenticity of student work as it is developed and during the marking process by: regular check points
- submission of plans and drafts
- oral questioning to confirm understanding
- requiring a repeat performance if in doubt
- being familiar with or controlling resources available
- referencing and bibliographies
- monitoring revision changes
- using plagiarism software or internet searches of suspicious phrases

Publically sourced assessment tasks must be changed. Changes can include:

- data sets or sources
- contexts or topics

Not Achieved must be reported for proven breaches of authenticity that compromise the student's result

School policy will determine whether a proven breach of authenticity in internally assessed standards is an acceptable reason for a further assessment opportunity.

types of assessment methods used in statistics internals

Tried and True

- In class. Exam conditions.
- Individual assessment.
- Fully hand written, including all graphs

Look at my shiny graphs!

- In Class. Exam conditions.
- Individual assessment.
- All graphs (and perhaps the investigative question) are produced on the computer during the first session. Everything else is hand written.

Computer Lockdown

- In class. Exam Conditions.
- Individual assessment.
- Students usually have no access to internet or this access is closely monitored.
- Entire exam is done on the computer.

Computer Assignment

- Individual assessment.
- Assignment.
- Exam is done as a report through Google Docs, One Note, etc. and submitted by a preset due date.
- Conditions set by teacher.

Checkpoint Assignment

- Individual or Group Assessment
- Assignment
- Exam is done as a report through Google Docs, One Note, etc. and work it submitted in parts by preset due dates.
- Conditions set by teacher.

Group Assignment

- Group assessment.
- Assignment.
- Students collaborate and work together through the statistical inquiry process and present their work in the form they are most comfortable.

BREAK INTO **groups**

- Left and right handed people (biased sampling)
- Groups of 4 righties and 1 leftie (stratified)
- Vegetarians and carnivores (how do you define one or the other?)
- People who play a sport, left vs right brained (self classification)
- Geographical location of your school
- Star Signs (why?!)

PROS and CONS

<http://bit.ly/2joxR5p>

PROS and CONS

Statistics Assessment Methods PRO CON cclock@lynfield.ac.nz

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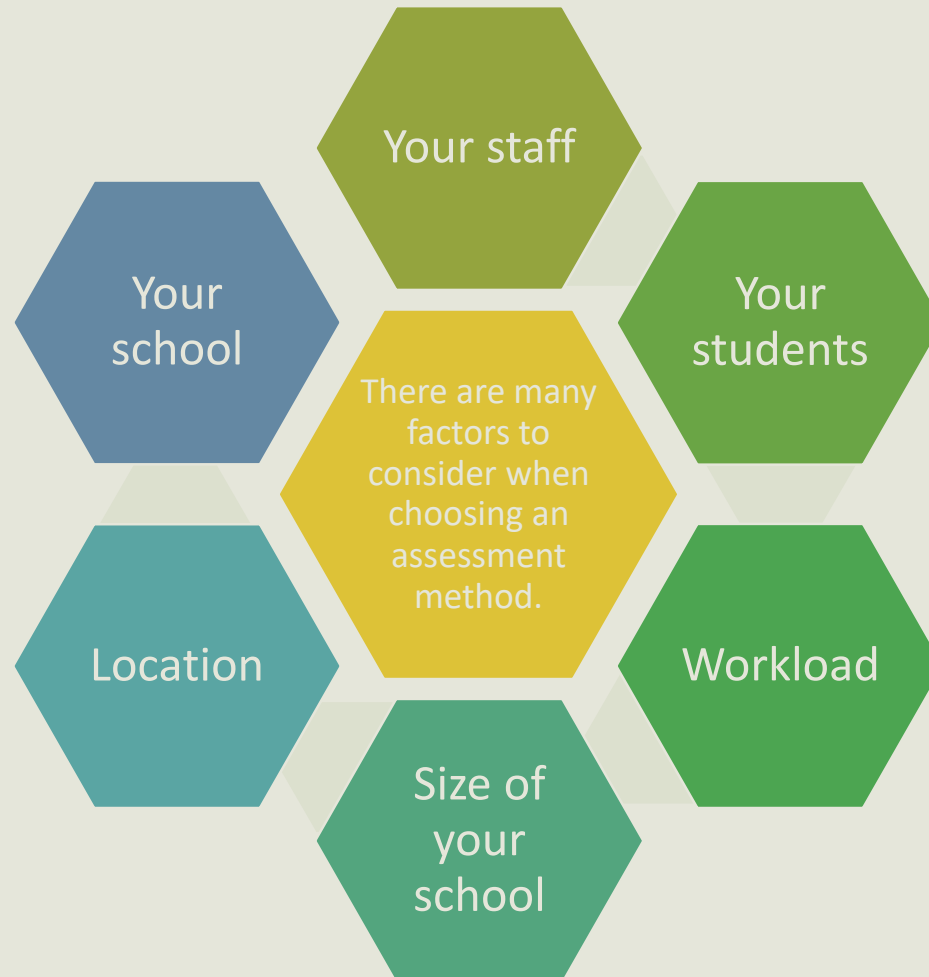
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ASSESSMENT METHODS FOR STATISTICS INTERNALS

TRIED AND TRUE		
ABOUT	PROS	CONS
In class. Exam conditions. Individual assessment. Fully hand written, including all graphs.		

LOOK AT MY SHINY GRAPHS!		
ABOUT	PROS	CONS
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WHICH METHOD IS THE **best**?



QUESTION to PONDER

Which assessment
would you try in a
different way next year?

CONTACT details

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Thank you for coming. 😊