A response to the 2014 NZQA external assessments in the statistics strand of Mathematics and Statistics from NZ Statistical Association Education Committee. 15/4/2015.

Contents

Recommendations

The Education Committee recommends:

- that NZQA makes sure that each of its assessment panels has people with particular expertise in statistics and probability
- that NZQA ensures unity across the work of its teams, so that progressions across the levels are clear
- that the assessment of probability continues to evolve towards statistical thinking.

We value our relationship with NZQA, and are very happy to work with them.

Origin and purpose of this document

This document was prepared by members of the NZ Statistical Association's Education Committee, for NZQA and for publication on the CensusAtSchool site, in March and April 2015. The purpose is to support the continual improvement of assessment in statistics.

Much of this document was written before the schedules for the assessments became available.

We have had a limited amount of time available for this task, but want to make sure the feedback is timely. We apologise for any unclarity or unevenness.

We welcome further discussion. Please contact m.camden@clear.net.nz or other Committee members.

The 2014 assessments

We congratulate the authors on continuing the movement of the assessments towards the spirit of *The NZ Curriculum (NZC)*. In most cases, the questions use contexts that require statistical thinking about all parts of the statistical enquiry cycle.

These assessments need to measure statistical skills with reliability and validity, and they also need to help lead the mathematics and statistics education community towards the intent of *NZC*. We detail below some areas where we would like to see change. We're very well aware of how hard it is to write statistical assessments.

We see some issues with the assessment of probability ideas across level 1, level 2, and level 3. We would like to see a clear progression across the assessments, internal and external, in probability. We would also like to see a shift away from problems designed primarily to assess formula manipulation rather than higher level statistical thinking. We hope to put some more thought ourselves into the assessment of probability.

Now that we have reviewed the external exams individually, we would like to have them looked at all together, to check that they imply clear progressions. We realise that they are probably developed by several different teams, and this raises a concern. We hope and recommend that NZQA does do an overall check itself.

We would like to see that all the assessment panels have people with particular expertise in statistics and probability.

Level 1: AS91037: Demonstrate understanding of chance and data

General comments about the whole assessment:

The statistical skills needed form a large subset of the achievement objectives listed in the standard: most of these arise somewhere in the assessment. We have time series, and a numerical variable with a category variable. We don't have 2 numerical variables from the same dataset.

However, we are concerned about whether the questions prompt students to think and answer at suitably high levels. At several points, students should be stating and checking the assumptions behind their answers. However, this is not specifically requested.

At several points, examiners have provided lots of data in graphs, but have not taken the opportunity to allow students to explore these visually as the first stage of their thinking.

The authors have used a sporting context (basketball) consistently throughout. However, we ask: 'What if some students are not into basketball?' Is there enough support for these students?

Assessors need to have a theme related to teenagers where possible. Students needed to get the idea of mean points per game versus percentage of successful shots. Our concern is whether students who know nothing about basketball are disadvantaged by this context.

We need to be careful at using one context narrowly throughout one assessment task, for the reasons stated above.

This AS is a catch-all for much of L1 statistics, and we acknowledge that it must therefore be difficult to set. It is also very important in helping to set the direction for statistics for curriculum levels 6, 7, and 8. We would like it to evolve more towards statistical thinking using visible data and using contextual features that affect the usefulness of conclusions from the data.

ONE (a) (ii):

We're unclear about what the question assumes. Are we looking at the past, and interested in how the father got this estimate of 60% from an actual 200 shots? (We'd be using data to make estimates of probability). Or are we looking at the score x on any 200 shots? (We'd be envisaging a random variable and its probability distribution; a more statistical skill). If the latter, then the answer is: x is a random variable, with a value from 0 to 200, a probability distribution, and an expected value of 120. That assumes that the father's skill level was stable.

ONE (b) (i):

This is very basic, but it is fine have some basic questions at L1. This one does help to get students looking at the data and the graph.

ONE (b) (ii):

Better would be: 'estimate the probability that he will score on the next shot'.

We're hoping that markers look for comments about the assumption that Levi is stable or improving.

The graph provided is showing long run relativity/cumulative frequency. Can we separate the stabilising due to increased sample size from the stabilising of Levi's performance? Should it not say 'estimate the probability that he will score on the next shot' or something like that?

The question asks: 'How confident can you be that this probability is correct?' We are not sure that a probability can be or not be 'correct'. We'll never know what the probability was. Perhaps we want to know: 'How reliable is that estimate?' The answer involves sample size, and assumptions about whether Levi is stable or improving. Students could look at the graph to assess both these effects.

The question could have been phrased differently, but we hope it elicited some statistical and graph-based thinking.

TWO (b) (i):

This seems to be a study of 2 time series, for 2 particular players, and so is descriptive not inferential. It is difficult to distinguish movements in level from noise. (At a later NZC level, the number of shots per season would enable an estimate of the noise).

TWO (b) (ii):

Can we use a sample of 1 long-playing person (Shaq) to make predictions about LeBron? We are hoping this is the sort of comment markers will be looking for.

If a student doesn't know anything about basketball (or these players), would they be disadvantaged? We're concerned about this aspect of contexts, for future assessments.

TWO (c):

We think too much knowledge of basketball is required here. Shaq must be attempting more shots but scoring the same as LeBrun, and hence gets similar mean points per game but lower percentages.

THREE (a):

Is this descriptive or inferential? Are we trying to make an inference about their overall playing ability based on the season where they were the same age, or are we just describing what happened specifically for that season?

THREE (a) (i) and (ii):

The question in (ii) is not quite right. It would be right the other way around, since:
symmetry implies mean = median
mean = median does not imply symmetry.

In fact questions (i) and (ii), need to start firmly and explicitly with what students can see in the data. The examiners have kindly provided them with all the data in the graph, with some measures shown as well in the boxplots. Students look at the graphs, describe the shapes and other features of the distributions, and then check the stats. The median vs mean comparison should not be the focus at L1.

We note that:
median – mean for Shaq = .28
median – mean for LeBron = .35; which is not much bigger!
This tells us that both distributions are probably reasonably symmetrical, but slightly skewed to the left.

THREE (a) (iii)

'Points per game' is needed.

The question allows for some sophisticated higher-level thinking: about what happened when the players were 28, and whether we can extrapolate from there or not. However, it is not clear that that is what is wanted. We hope that the desired answer is no: Levi can't use one handpicked year of scores as a random sample from the career. We hope that the desired action is not informal inference. The word 'conclude' may suggest inference, to some students.

<u>THREE (b) (i)</u>

Is extracting numbers and adding them an OK skill to assess? We think so. It shows students know where to find the information on the graph and link it back to the information in the question.

We have an interesting graph, but no questions about what it tells us about this year's players. The graph is used only to convey numbers.

<u>THREE (b) (ii) and (iii)</u>

This too allows for good thinking and assessment of assumptions. We particularly liked these last two question parts. They require some statistical thinking and seem accessible.

Part (ii) requires an expected value calculation using either probabilities or the frequencies, but nothing further.

We hope that (iii) expects inference ideas (based on sample size) and assumptions (same kinds of people participating with similar ability at shooting, similar setup of game, etc). But it is not clear that this is what is expected.

The prediction must come with uncertainty. Is next year's game likely to stay in the black?

The question could have allowed for use of all four outcomes, in planning variants of the game.

Level 2: AS91267: Apply probability methods in solving problems

General comments about the whole assessment:

The assessment matches the AO's to a large extent, but we would like to see questions that have more reasoning about realistic situations, and less numerical puzzles. We admit that this is not easy!

Not all students who sit this external are 'mathematics' students, and this may be the only external that they sit. The AOs from the mathematics thread should not be assessed within this standard.

In *NZC* L4, 5, and 6, we have 'Form and solve (simple) linear equations …'. That does not need to be assessed here.

What we would like to see instead is assessment of this statement, from *NZC* and the AS:

> comparing theoretical continuous distributions, such as the normal distribution, with experimental distributions

This AO requires several levels of visual and contextual statistical thinking. We are very keen for it to be assessed thoroughly.

ONE:

The context is of clinical importance, and the thought needed progresses from table-reading to relative risk. However, some of the proportions don't matter clinically ((a) (i) and (b) are results of the experiment's design), and the claims in (c) and (d) are equivalent. An excellence student may spot this!

TWO:

Parts (a) and (b) are all about manipulating the algebra involving z, x, and the mean. This may be traditional, but it is not statistical thinking. We were hoping that assessments were evolving away from this. A graphics calculator will do this manipulation, which is another reason for not having it here. We see no point in asking these questions. We'd like to see something much more relevant to the context.

For BMD, this could be what the expected ranges and central values for an OK BMD would be, what would be a BMD that would cause concern, what would be likely and unlikely values in the distribution and mapping these to a real life decision.

The assessment could give experimental and theoretical distributions, and their 'statistics', and ask for a comparison. This would test modelling using distributions, and use of the normal distribution.

Part (c) gives graphs, tables, and 'statistics'; which is good. The median is not there, for some reason. The graphs could be dot plots, showing all the real data, rather than histograms. However, we have serious concerns about this question.

Part (i) is very basic. We don't think this is at L2.

Part (ii) uses 'ability', which raises interesting questions (for us) about measures. What does it seek to measure, and how does it do it? We note that some students have negative ability! We're not sure how to answer the question, and are not at all clear what answer the markers are wanting.

Part (iii) asks for 'discussion' (including 'some comparisons') of the experimental distributions, but gives no reason for doing so. A statistical analyst would itch to do a scatterplot, as we have paired data, but the data is not treated as such. We can't assume that the same people are at the top of both graphs.

For (iii), if students use the shape, centre, and spread to compare something for (i) and (ii), then what else do they do for (iii)?

<u>THREE:</u>

We have a contrived game situation. It is difficult but not impossible to get away from that in assessments. We would prefer to see realistic situations with conditional probabilities, and needing the use of tables or trees.

Students do get assessed here on when they can add, when they can multiply, and how to deal with conditional situations.

Level 3: AS91585: Apply probability concepts in solving problems

General comments about the whole assessment:

In terms of content: there is a good mixture of representations of probabilities as natural frequencies, proportions, and percentages. The contexts were good, and mostly seemed realistic.

In terms of style: We would like to see more opportunities for students to show higher level statistical thinking, rather than algebraic manipulation. We acknowledge that the 2014 paper is an improvement on the 2013 one in this regard. However in the 2014 paper, Questions 1(d) and 2(b) felt like mathematical puzzles with a focus on algebraic manipulation. We would like to see this type of question replaced by questions requiring students to extend statistical ideas involved in earlier parts of the question and/or allowing for statistical insight.

The contexts seemed realistic for Questions 1 and 2.

ONE

Overall: This question was about probabilities of combined events and did a good job of assessing students' understanding of these.

(a) Skills include: create a table, find a probability; with use of natural frequencies, with a denominator of 2000.

(b) Skills include: deal with a two step problem – find the conditional probability, then find the probability of the second occurrence without replacement.

(c) We have: deciding if two events are independent. There is only a slight difference, so room for discussion about the difference. It might be taken a step further to ask how you might explain that to a woman who is wondering whether to put off having children.

(d) This felt like a puzzle, and involved mathematical manipulation rather than statistical thinking. It lent itself to use of a 3-way Venn diagram, but as the information is all about using IVF, it was easy enough to do with tables. It is generally well worded. Perhaps it could be spelled out that it is referring to the same study as Questions (a) to (c). It simply says for "this" study. However it would be reasonable to expect a student working near Excellence level to deduce this, because the question would not be possible without the additional information from (a). So this is probably not an issue.

We recommend providing the chance for students to show some statistical thinking in this type of question. For example, the calculation could be made simpler by providing additional frequencies, and the thinking could be extended by asking students to:
1. mention an assumption being made in calculating this probability, and/or
2. stating another factor that may affect the proportion of women in this category, and how data on this factor could be collected and included in the analysis.

TWO

Overall: This question was about risk and relative risk, and is well worded and clear.

(a) We have: probabilities given as decimals in an incomplete table that requires summing.
(i) We have: basic question using OR, then multiplying by 400. (Two steps)
(ii) We have: creating a tree from the table data. This requires a reasonable understanding of trees and tables. We have good assessment of relational thinking, where students were to link the information from two different representations (table and tree). This requires a reasonable understanding of trees and tables.
(iii) We have: numbers read off the tree or table. This could then be manipulated to give the relative risk.

(b) Rather twisty conditional probability puzzle that could be solved with either table or tree, but perhaps easiest via a tree.

Again this is more of a mathematical puzzle rather than a chance to show higher level statistical thinking. As in Question 1(d), we recommend that the complexity of the calculation in future be simplified, but that students be required instead to show statistical thinking in their answer. In this case, perhaps candidates could be asked to relate their calculated probability to the context by:
1. mentioning an assumption being made in calculating this probability and/or
2. stating another factor that may affect the true probability that the first-born twin is underweight given that the second is, and how data on this factor could be collected and included in the analysis.

<u>THREE</u>

The daycare context has a tenuous connection to the original context. We see no problem with this. However, the problem itself is very contrived. What parent looks at the sum of the ages of the children in a photo? (Maybe it should specify that the parent is a maths teacher.)

(a) It is good that this involves inferential thinking (rather than just descriptive statistics and calculation). It reinforces the important idea of random sampling error, and testing plausibility of an outcome if chance were acting alone.

(b) This is a good question because it would lead each student to demonstrate his/her level of understanding of these important statistical ideas: that a simulation allows for increased sample size (which should reduce sampling variability), and eliminates risk of other lurking variables interfering, but relies on the assumptions about the situation used in creating the simulation.
It is great to have these ideas being assessed in the Probability and Distributions standards so that teachers realise their importance in any course involving statistics at this level and, hopefully, all students are exposed to them.

(c) We have a three stage tree with replacement. Some calculations could be circumvented if need be, by calculating the two end values and subtracting the given value. This works better with fractions.

<u>The specifications from the standard</u>

There is a very good coverage, except for mutually exclusive events:

- Investigate situations that involve elements of chance
    - calculating probabilities of independent, combined, and conditional events

Methods are selected from those related to:

- true probability versus model estimates versus experimental estimates
- randomness
- independence
- mutually exclusive events
- conditional probabilities
- probability distribution tables and graphs
- two way tables
- probability trees
- Venn diagrams.

Level 3: AS91586: Apply probability distributions in solving problems

General comments about the whole assessment:

The context is coffee, which is fine and somewhat real-life, rather than theoretical and mathematical. It is hard to see how modelling would really be used, but this is often the case in exams where the author is trying to make something real-life, but not prohibitively complex. Some of the questions about assumptions and the relationship between the model and the real-life situation are better than others. There is good coverage of all five distribution models.

It might be preferable to start with an easier question than question one (a).

ONE

Overall: Assesses understanding of normal and triangular probability density models. Instructions and context were clearly explained. Level was appropriate.

(a) This involves two distributions, normal and binomial. This could be done by using just the normal distribution and putting the answer to the power of three. Asks for assumptions that need to be made. I assume it means any assumptions that may not actually be strictly valid. (Difficult to know what the examiner is looking for without seeing the answers.)

(b) This uses the triangular distribution. This involves considerable calculation, but is otherwise straight-forward. There is space for a sketch.

(c) (i) We have a rather tricky backwards engineering puzzle. The standard deviation is not given, and needs to be calculated from a standard normal distribution.
(ii) Asking for one potential limitation is excellent. This is looking for ways in which the model may not fit the reality.
This is a good excellence level question and the instructions are clearly worded.

TWO

Overall: This assesses discrete probability models (binomial and Poisson). It is good how it got students to link appropriateness of models to the context.

(a) (i) We have a standard binomial distribution, asking to justify the use of the binomial model. Good.
(ii) We have straightforward binomial calculations.
(iii) We see two issues with this question:
1. more space needed to answer this question to the level required for Excellence.
2. the assessment schedule required students to <u>describe</u> similarities and differences between experimental and model distributions, <u>as well as</u> writing a conclusion. This means an <u>analysis</u> was expected as well as a <u>conclusion.</u> Yet the question only referred to a conclusion. It did not ask for the descriptive aspect, only "discuss what conclusion(s) the café owner could draw…"

(b) (i) Fairly straightforward Poisson question which involves changing the rate.
(ii) Asks to identify a possible invalid assumption. This is good.

THREE

(a) (i) We have a simple expected value calculation.
(ii) This is a rather more tricky expected value calculation, and could be done in two different ways.

(b) (i) This is leading to a uniform distribution, but it seems a rather unlikely model. It is good how they accepted normal or triangular models too, if justified in context.

(ii) It is good how this paper asked students to justify their choice of model in context throughout.

(c) This involves inverse Poisson calculations. It assesses extended abstract thinking in the sense that it involves an extended inverse calculation (i.e. an extended chain of reasoning). It is more of a mathematical process than a statistical one.

<u>What is covered:</u>

In the standard:
Investigate situations that involve elements of chance − calculating and interpreting expected values and standard deviations of discrete random variables
− applying distributions such as the Poisson, binomial, and normal
This is a good summary of the material covered. There was no calculation of standard deviations of discrete random variables. (I have no problem with this as it seems like busy work.)
Methods are selected from those related to:

- *discrete and continuous probability distributions* (Yes covered)
- *mean and standard deviation of random variables* (Standard deviation is used, but not calculated.)
- *distribution of true probabilities versus distribution of model estimates of probabilities versus distribution of experimental estimates of probabilities.* (One question compares a model with experimental estimate of a distribution. In several places there are questions about the model vs the real-life situation which is great).

<u>How well are the distributions and concepts covered?</u>

Discrete unspecified	Question 3(a) (i) and (ii)
Binomial	Question 1(a) optionally, 1(a) assumptions, 2(a)
Poisson	2(b), assumptions, 3(c)
Normal	Question 1(a), 1(c), assumptions
Triangular	1(b)
Uniform	3(b)
True vs model vs experimental	2(a), 3(b)

Level 3: AS91584: Evaluate statistically based reports

General comments about the whole assessment:

This assessment is closely aligned to the achievement objectives of the achievement standard. It is a positive feature that the 2014 exam is similar in style to the 2013 exam.

For future assessments, we hope that other types of statistical reports will be used (e.g. summaries/abstracts from journal articles, press releases) and that more types of questions are introduced so that the assessment does not become too predictable from year to year.

ONE

(i) We have a straightforward question about how Margin of Error (MOE) is calculated and also what it represents (variation due to random sampling). This sends a clear and important message (being in the first question) that students need to clearly understand the purpose of having a MOE and what it represents, not just learn the process.

(ii) This is about the MOE rule of thumb tending to over-estimate the random sampling error for proportions close to 0 or 1.   It is good how students could demonstrate an understanding that, the further the poll percentages are from 50%, the less the sampling variability in poll percentages tends to be.   The understanding of this idea is essential and we don't want students to simply be memorising the 30% to 70% guideline and treating it like a 'black and white' rule.

(b) (i)   We have a straightforward question about testing whether a sample (poll) percentage of just below 50% could be used to infer that a minority held that view back in the population. It required construction of MOE/CI using rule of thumb and conclusion that claim not supported.

(b) (ii) It is about wording of survey question and labelling of response categories; students had to suggest an appropriate improvement for Merit. A good question.

(c) It is about naming at least 2 possible non-sampling errors that could be causing bias in the survey findings, and how they could be causing 'bias'.   This seemed clear and straightforward.

TWO

(a): This question involves a survey being carried out on a sample of "shoppers" in two different Auckland malls. The sample selection is not specified, but would have to be haphazard given the context.

The difficulty is the fact that in (ii) it asks students to use confidence intervals to infer whether a claim can be made about the wider populations of West and South Auckland.

No such inference could be justified in any formal sense based on the haphazard sample selection used for a whole raft of reasons. E.g. the likely over-representation of some demographics among respondents and under-representation of others.
Yes, the question goes on to ask students to comment on this aspect. However the bottom line is that this defeats the purpose of constructing a CI to estimate any population parameters in the first place. Also the next question (b) also assesses representativeness ideas anyway so why do this twice?

Perhaps parts (i) and (ii) (where the CI is constructed and interpreted) should be based on a different scenario where the sampling method is more reliable (e.g. random telephone sampling from the electoral rolls of South and West Auckland).

Part (iii) doesn't need to assess understanding of representativeness of a sample based on selection method, because (b) already assesses this.

A good alternative for (iii) could be to focus on a different type of non-sampling error such as non-response issues.   E.g. It could stick with the original phone poll scenario suggested above, and then also ask for a discussion about non-response, specific points about how it could affect the findings, and suggestions to reduce non-response bias.

(b) We see no problems. This is a good question assessing understanding of sample selection and of how representative a sample is likely to be of a wider population. We don't need to assess this in (a)(ii) as well as (b).

THREE

This is about analysis of evidence from a bivariate display.

The data used for this article appears to be made up and we would like this addressed in future tasks. Realistic or real data needs to be used in future questions where possible.
Also (unfortunately) a scatterplot showing all the data would not be a common display to find in a newspaper article

In part (b), we assume that this question is assessing whether students can match the numbers used in the statement with the gradient of a linear model fitted to the data provided. This is a similarly phrased question to the 2013 exam Q3(c), except that for the 2013 paper, students were expected to reason with how the numbers were being used to make the claim (not just where the numbers came from) in terms of the statistical evidence provided.

Overall, Question Three does a good job at assessing students' ability to:
- analyse a bivariate display supporting comments with evidence, show judgement of the contextual relevance of features, and of difficulties in making causal claims from an observational study.

Scholarship: Statistics

General comments about the whole assessment:

The assessment uses real data and contexts, with most contexts being ones students can integrate their understanding of with their statistical understanding. There is good coverage of the "newer" inference methods such as randomisation tests and bootstrapped confidence intervals.

We would like to see a higher visual and data-based focus in the probability modelling processes assessed and perhaps a greater weighting of these ideas within the paper. We would also like to see a much stronger and clearer focus on "evaluating statistically based and/or probabilistically based reports".

ONE

(a) An issue with fitting linear models to scatterplots is that once they are there, it is very hard to "unsee" them. As it may not be necessary for students to describe the gradient of the relationship using numbers, it could be sufficient to provide the equations for the possible linear models separately when needed to make a prediction (as has been done in previous exams).

(b) (i) The wording of the question does not make it clear to the students that they could ignore one of the models (or supplied values) when making the prediction. While we appreciate that the intent of the question was to elicit a high level of thinking from students, we would suggest that there was a pointer in the question regarding possible strategies. Then the quality of the response (justification of strategy and discussion of precision of prediction etc.) could be used to determine the level of their thinking. This would allow most students to produce evidence that could be assessed, rather than to take a potentially wrong step at the very beginning of the response (e.g. averaging the two predictions made from two models).

TWO

(a)(ii) The use of the "concluded" may focus students on the interpretation of the tail proportion only, and not necessarily on discussion of the features of the experimental data. As most students will have completed internal achievement standards using the PPDAC cycle, the word "conclude" could prompt them to write about this stage only. If the intent is for students to describe features of the experimental data as well as make a conclusion about the effect of the treatment variable, we would suggest that there are two parts to the question, similar to the layout used for part (b).

THREE

We are not sure why there is no information in the stem that describes where the data is from. The data must be from a survey like the ones mentioned in earlier questions. As contextual knowledge is needed to provide explanations of the reasons for features, it is important that students have this information.

(b) The pointer within this question to use extrapolation could have been omitted, and a pointer similar to "using the features of the time series data supplied, find a forecast….." provided. Extrapolation tends to be applied to extending the trend component of the model, not necessarily other components such as the (possible) seasonality.

(c) It would be hard for students to suggest possible reasons for each of these due a lack of information about the context. We do not want to encourage students to make wild speculations.

(d) A suggestion could have been made to use index variables so that this question is different from part (a).

FOUR

This appears to be an accessible question with most of the focus on probability calculations. As mentioned earlier, a visual and data-based approach to probability modelling should be encouraged e.g. giving students data for which they need to consider appropriate probability distribution models. Probablility modelling involves finding models that fit the structure of the context, then assessing how well the models' assumptions are met.

FIVE

Questions assessing concepts related to statistical literacy need to allow for real critical evaluation of the processes used. Students should be expected to read the report provided, identify and/or summarise the key statements/claims made (which are in the report, not develop their own) and then check the evidence provided to see if there is support for each of these statements, and so in this way evaluate the validity or appropriateness of the statements made. In addition to this, students can identify underlying issues with the processes used or suggest improvements to how the report was presented.

We recommend that the examiner looks at the AS91584 statistical reports external standard for the types of concepts and skills that should be assessed and the style of questions used. While there is scope within the Scholarship Standard to combine threads of the curriculum, there is a place to have a question that demands critical thinking, not just surface level identification of “features” or “evidence”. Other aspects from the performance standard that could be combined for a statistically based report question are: dealing with sources and consequences of uncertainty, critiquing based on the Problem-Plan-Data-Analysis-Conclusion (PPDAC) cycle and offering competing explanations and important follow-up questions. The standard also allows for the use of probabilistically based reports.

Since Scholarship and the AS's use the same AO's, we're keen to see the assessments being in accord.