



Strategic use of computer-based assessment to support student learning




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Project Aims

- **Computer-Based Assessment with Feedback (CBAF)**
 - Useful resources for CBAF authors
 - contributions from HE community addressing gaps in existing resources
 - exemplars/case studies
 - evaluation strategies
 - Not authoring/delivery tool dependent




Key Concern: CBAF Construction

- **Macro Level**
 - ‘Aligned CBAF’
 - careful targeting to learning outcomes
 - contributing effectively to the assessment regime
 - **Appropriate item mix, considering...**
 - ...cognitive levels
 - ...learning needs of the student at the time
- **Micro Level**
 - Principled item-level feedback design
 - more than “right” vs. “wrong”




‘Spend’ CBAF Wisely!

- **Ask hard questions**
 - *Can a human do it better—or does CBAF have a real advantage here?*
 - *Are we leveraging the strengths of the computer?*
 - animations, sound, multiple realisations of same problem, etc.
 - rapidity of feedback, 24 x 7 and remote access
 - *Consistent with “11 conditions under which assessment promotes learning”?*
- **Make sure students use it and take it seriously!**
 - *Motivating the unmotivated or phobic—how?*
 - *May or may not require “reward” of a mark for ‘formative’ work*




Strategic Use of CBAF

- *Spending it wisely often means*
 - filling distinct “support gaps”
 - linking to other forms of assessment
- *Some examples we’re investigating:*
 - check for learning—keep students engaged, provide multiple examples, rapid feedback
 - enforce a pace of study—frequent assessment
 - build capacity for solving problems



Item-Level Feedback

- **In CBAF, the form and content, timing and delivery of feedback on the test item can be varied**
 - score only
 - right/wrong
 - comment on performance
 - what they did ‘wrong’
 - what they did ‘right’



Item-Level Feedback

- Feedback should be designed to *stimulate correction of errors through a thoughtful approach in relation to the original learning relevant to the task*
 - posing additional questions
 - encouraging the student to seek alternative sources/explanations
 - identifying what is wrong with the response
 - indicating how far the student is from the desired "end point"
 - indicating how a student might get to the desired "end point"

0% done in 8% of time Q1: mean and variance TRIADS

Question Tutorial Feedback

This question tests your ability to compute a mean and a variance.

Using the values given below in the table, enter the mean value, the deviations of each value from the mean, and the squares of these deviations. Finally, using the 'sums of squares' and the sample size, enter the variance.

	Value	Deviation	Deviation squared
A	5.00		
B	10.00		
C	15.00		
D	20.00		
	Mean	Variance	

In the box 'Mean' enter the mean value of the four numbers in the 'Value' column.

In the entry boxes of the 'Deviation' column type in the deviations (value minus the mean) and in the entry boxes of the 'Deviation squared' column type these deviations squared.

In the box 'Variance' enter the value of the variance.

Remember to round up your figures to 2 decimal places, and press return after each answer.

Click on entry box - Type answer then press 'Enter' - click on 'Submit' to finish.

Quit Go back Skip Delete

0% done in 17% of time Q1: mean and variance TRIADS

Question Tutorial Feedback

This question tests your ability to compute a mean and a variance.

Using the values given below in the table, enter the mean value, the deviations of each value from the mean, and the squares of these deviations. Finally, using the 'sums of squares' and the sample size, enter the variance.

	Value	Deviation	Deviation squared
A	5.00	7.5	56.25
B	10.00	2.5	6.25
C	15.00	2.5	6.25
D	20.00	-7.5	56.25
	Mean	Variance	
	12.5	41.67	

In the box 'Mean' enter the mean value of the four numbers in the 'Value' column.

In the entry boxes of the 'Deviation' column type in the deviations (value minus the mean) and in the entry boxes of the 'Deviation squared' column type these deviations squared.

In the box 'Variance' enter the value of the variance.

Remember to round up your figures to 2 decimal places, and press return after each answer.

Click on entry box - Type answer then press 'Enter' - click on 'Submit' to finish.

Quit Go back Skip Delete Submit

0% done in 19% of time Q1: mean and variance TRIADS

Question Tutorial Feedback

deviation A - You have subtracted the value from the mean, not the mean from the value, so the value is correct but the sign is not.
 deviation B squared - Your variance is correct even though you didn't have the correct value of the deviation.
 deviation C - Well done, this is the correct value!
 deviation D squared - Well done, this is the correct value!
 comment on mean value - Well done, this is the correct value!
 comment on variance value - Well done, this is the correct value!

Using the values given below in the table, enter the mean value, the deviations of each value from the mean, and the squares of these deviations. Finally, using the 'sums of squares' and the sample size, enter the variance.

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Please select 'Continue' to proceed.

Quit Go back Skip Continue



Assessment Development Model

- Choice Point
 - You are considering CBA(F) as an assessment in your module
 - What factors would influence your choice as to whether to use CBA(F)?
 - What would persuade you to use it?
 - What would dissuade you from using it?



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