University of the Built Environment
EST. 1919

Digital Futures in Assessment: Utilising Diagnostic Computer-Marked Assessment to Support Student Learning



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Context

Session focus

Presentation

Discussion

Reflection

Context

This session disseminates findings from an internally funded Small Teaching Action Research (STAR) project focused on innovation in teaching, assessment, and digital learning.

THE PROBLEM
Unit rate calculations are a fundamental QS competency
↓
OUR RESPONSE
Diagnostic marking tool to automate aspects of judgement + generate feedback
↓
WHAT WE DISCOVERED
Potential beyond the case study:
Critical analysis | Professionalism | AI literacy | Professional scepticism

Project Journey



PILOT PHASE



REFLECTION PHASE



IMPLEMENTATION PHASE

TODAY'S SESSION



Exploring:

- How can CBA support **competency & professional enquiry**?
- How can diagnostic feedback support **student learning**?
- How do we need to adapt **pedagogic approaches** for AI?

Rationale

- Improve student experience and understanding of producing accurate unit rates

- Develop students:
  - Critical analysis skills
  - Enquiry skills
  - Professional judgement

- Improve marking and moderation process

The Tool

Quiz | Questions | Results | Question bank | More

Opened: Thursday, 30 October 2025, 10:00
Closed: Thursday, 20 November 2025, 10:00

Important – Please read the information below before attempting the online assessment

This Computer Based Assessment is compulsory and counts towards your final module mark (40%).

This Computer Based Assessment (CBA) comprises **3** sections. You are allowed **one attempt** to submit this online assessment and can submit it at any point between the open and close times. Please note the CBA links closes at 10.00 (UK time) which means you will not be able to continue after that time even if you have started inputting your answers. Your grade will be published on the 'Assessment tracking' page in the 'My Assessment' area of the VLE on the **19 December 2025, 10:00 (UK time)**.

If you have a 7-day extension, you will be required to submit using the '+ 7 days' link and if you have a support plan or mitigating circumstances you must use the '+14 days' link.

See the Assignment brief for details.

Task 1

For this part of the assignment, you will need to either type your answers in the spaces provided or copy and paste from a word document. You are expected to ensure your answers are correctly referenced in accordance with the UCEM's guide to referencing and citation. The answers need to be typed or pasted in the correct space under each question.

Task 2

This task is in two sections with separate submission requirements as below:

Unit rates A, B, C and D

For unit rates A, B, C and D, you are **only** required to enter the final rates in the relevant spaces provided for each question.

Unit rate E

For unit rate E, you must submit all your calculations showing the appropriate Labour, Plant and Material components. You will need to submit your calculations by uploading your document either in Excel or PDF format using the relevant space. You are required to use the template provided. Your rate build-up should include explanations at each stage in the column to the right-hand side of your calculations. Explanations of where the pricing data is taken from should also be provided.

Information

Flag question

v1 (latest)

Prepare a report for the Commercial director following your review of the tender documents supporting the decision to recommend going ahead with the tender. Your report should critically analyse and address each of the elements in the sections below.

Your answers should be referenced appropriately, and you must include a full reference list to cover all of your answers in the final section of this question.

Question **1**

Not yet answered

Marked out of 5.00

Flag question

v1 (latest)

Enter the introduction to your report in the box below. (This should be approximately 125 words.)

Edit View Insert Format Tools Table Help

Question **2**

Not yet answered

Marked out of 10.00

Flag question

v2 (latest)

As part of your report, critically analyse and address the following in the answer box below:

- Consideration of two specific risks inherent in the contractor's own estimating process (this should be approximately 200 words)

Edit View Insert Format Tools Table Help

Question **6**

Not yet answered

Marked out of 5.00

Flag question

v3 (latest)

Please add your reference list for the questions in the above sections using the appropriate referencing method.

You should include a minimum of six separate relevant and appropriate sources that you have written about and cited within your work.

You can either enter your list directly in the box below or copy and paste from a Word document.

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Information

Flag question

v2 (latest)

As part of the tender estimate, you are required to compile unit rates, A–E to support the pricing of the items shown in the Bill of Quantities (Appendix B). You are not required to provide any assumptions as all the cost data information is included in Appendix A. Overheads and profit should be included in the rates at 15%.

For unit rates A, B, C and D, you are only required to submit the final rate using the appropriate answer boxes below. Unit rates A, B, C and D carry equal weighting.

For unit rate E, you must submit all your calculations showing the appropriate Labour, Plant and Material components by uploading your file below using the template provided on the module page.

Question **7**

Not yet answered

Marked out of 5.00

Flag question

v5 (latest)

Unit rate A: Screed

28.1 Screeds, Beds and Toppings

A	38mm thick cement and sand (1:3) screed to floors; level and to falls only not exceeding 15° from horizontal to concrete with steel trowel finish width exceeding 600mm wide	225	m^2		£ -

What is the unit rate for screed (item A)?

(Your answer should be submitted to two decimal places. You are not required to submit the overall price for the item. You do not need to include units.)

Answer:

Question **8**

Not yet answered

Marked out of 5.00

Flag question

v4 (latest)

Unit rate B: Berwyn welsh slate floor tiles

28.2 Finish to floors

B	Berwyn welsh slate floor tiles 600 x 600 x 12mm on screeded bed to standard pattern; bedded and pointed with BAL adhesive width exceeding 600mm wide	225	m^2		£ -

What is the unit rate for floor tiles (item B)?

(Your answer should be submitted to two decimal places. You are not required to submit the overall price for the item)

Answer:

Task 2 unit rates A-D – Marks allocation

Item	Marks
Correct answer	5
Within 10%	4
Within 15%	3
Within 20%	2
Within 30%	1
Over 30%	0

Question **11**

Not yet answered

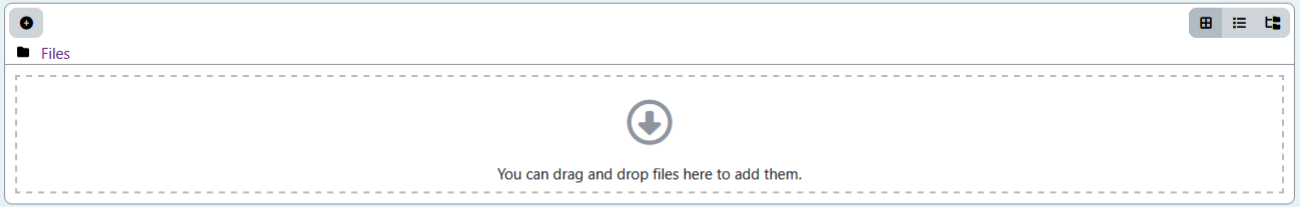
Marked out of 30.00

Flag question

v2 (latest)

For unit rate E, you must upload your worked calculation showing the appropriate Labour, Plant and Material components. The build-up should be included in your submission and each stage explained in the column to the right-hand side of your calculations. Explanations of where the pricing data is taken from should also be provided. You are required to use the template provided on the module page for your calculation.

Maximum size for new files: 500 MB



Accepted file types

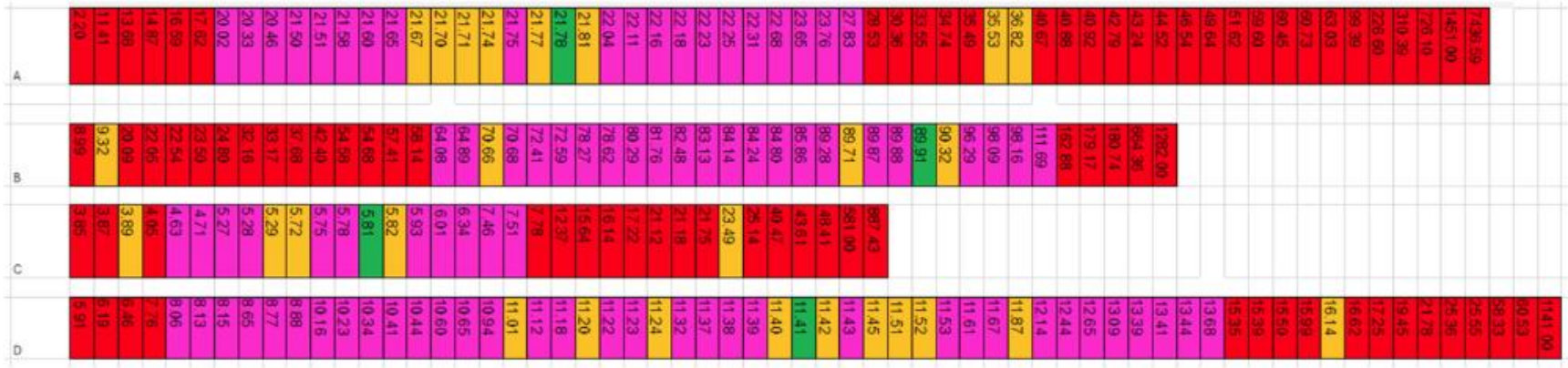
Document files .doc .docx .epub .gdoc .odt .oth .ott .pdf .rtf

Spreadsheet files .csv .gsheet .ods .ots .xls .xlsm .xlsx

Acrylic paint; two coats; applied to plaster base width exceeding 300mm wide		
	Unit Rate £	Annotation/Justification
Labour		
TOTAL Labour cost per m²		
Materials		
TOTAL Material cost per m²		
Plant		
TOTAL Plant cost per m²		
Unit cost per m²		
TOTAL Unit cost per m²		

Results

Feedback



A	38mm thick cement and sand (1:3) screed to floors; level and to falls only not exceeding 15° from horizontal to concrete with steel trowel finish width exceeding 600mm wide	375	m^2		£	

Correct rate	375 m^2	21.78	8167.50
Using minimum rate	375 m^2	2.20	825.00
Using maximum rate	375 m^2	7436.59	2788721.25
Average rate (removing outlyers)	375 m^2	22.07	8274.72

Case specific benefits	Non-case specific benefits
• Enhanced assessment validity and student competence • Improved feedback and student learning • Data-Driven quality enhancement • Operational efficiency and consistency	• Building skills of critical analysis and professionalism • Supports the development of AI literacy • Supports the development of students' professional scepticism

Discussion

Focus group questions

1. How might diagnostic computer-based assessment change the way students learn, and what aspects of learning might it fail to support effectively?

2. Where do you see the boundaries between what can be effectively supported by diagnostic computer-based assessment and what still requires human academic judgement?

3. What unintended learning behaviours or assessment strategies might this type of diagnostic assessment encourage, and how could educators address them?

4. If this approach were adopted more widely, what would you change, add, or redesign to maximise its educational value? (Where do you see the opportunity to use something similar in your practice.)

5. If graduates are increasingly expected to work alongside AI systems, how might diagnostic assessment develop their competency in exercising professional judgement?

Thank you