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Evaluation of Numbas for online lab reports

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Pre-covid……

		Pre-lab	Lab	Post-Lab
Level 1	Semester 1 Semester 2	Online Paper-based	F2F F2F	Online Paper based
Level 2	Semester 1 Semester 2	Paper-based Paper-based	F2F F2F	Paper-based Paper-based
Level 3	Inorganic Organic Physical	Mixed Online Paper-based	F2F F2F F2F	Mixed Online Paper-based

Post-covid……EVERYTHING ONLINE

Final Year Project

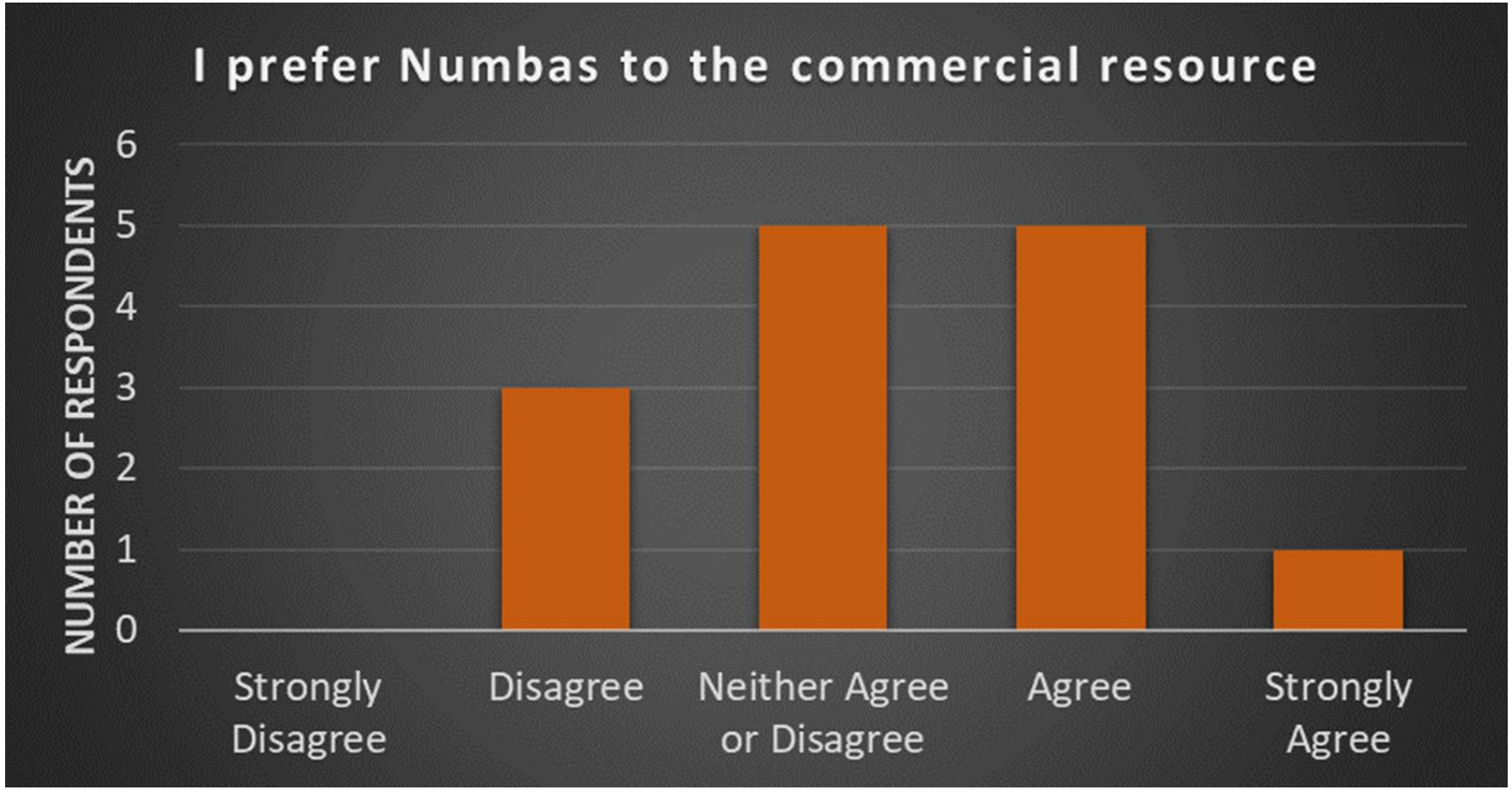
- Evaluation of NUMBAS for online lab reports.
  - Create online lab report for level 1 thermite reaction experiment.
  - Normally paper-based but this year using bespoke online resource created by commercial company.
  - Compare content created in-house to that from commercial company.
  - Assess user-friendliness of Numbas for student users and staff creators.

Creation of whole lab resource not just pre / post lab smart worksheet

Numbas features employed

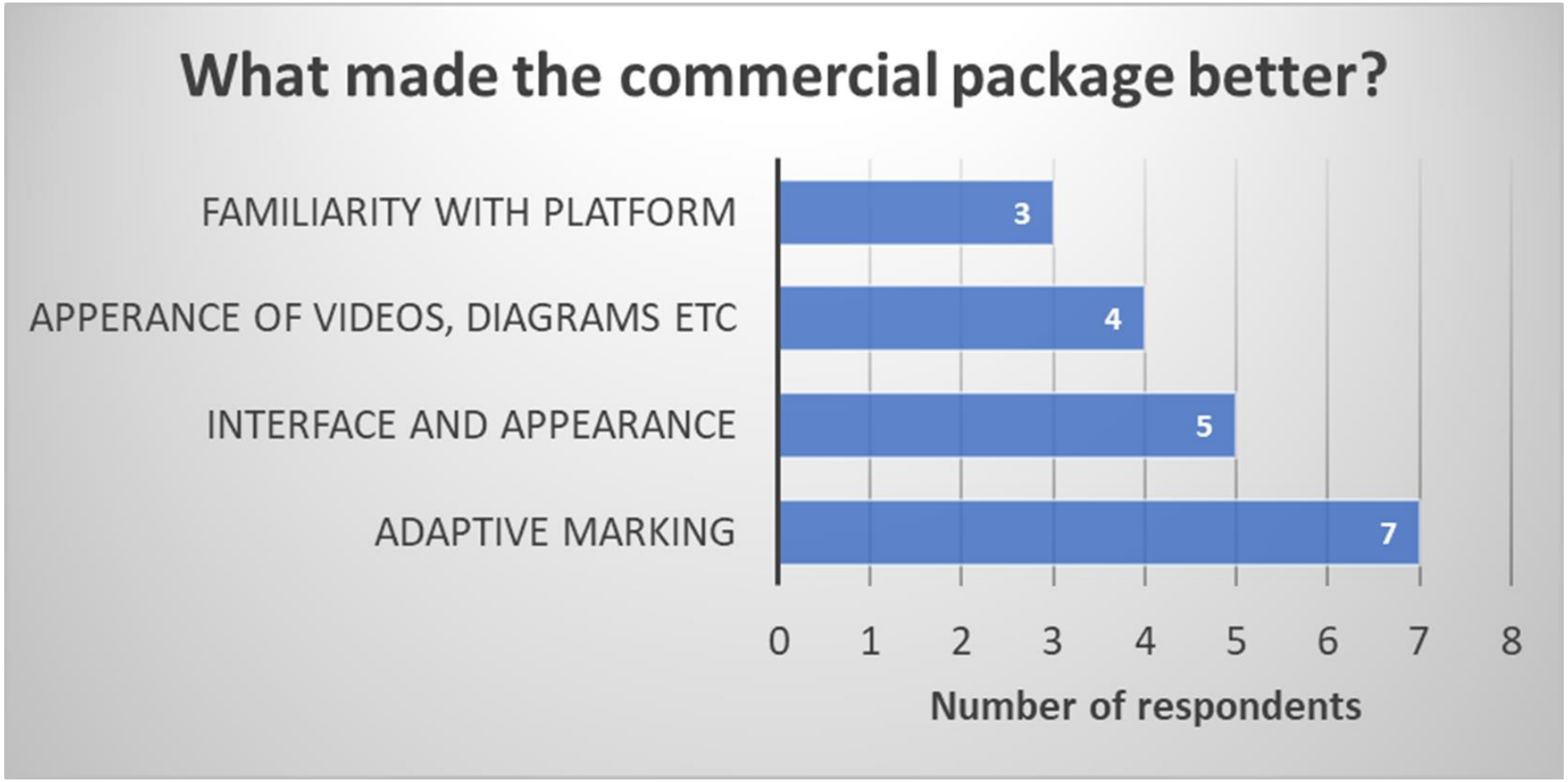
- Calculations
- Balancing equation
- Gap-fill
- Matching choices with answers
- Matching a text pattern
- Randomisation

Evaluation of Numbas resource



N=14

What made the commercial package better?



How would you improve the Numbas e-lab?

“Clearer instructions on rounding and units.”

“More guidance about how to enter answers, e.g.chemical formulae.”

“Feedback on where I went wrong was good so having this for all questions would be good.”

More drop down menus to prevent incorrect input of answers.”

“Making sig fig and unit formatting much clearer.

Further work and conclusions

- Despite the few results returned, the outlook on Numbas is somewhat positive. The survey results indicate that only 3 out of 14 respondents prefer the commercial package.
- Negative comments about Numbas mainly relate to lack of clarity regarding how to input answers.
- This is easily fixable and is due to the lack of experience of us as creators of this type of resource rather than any deficiencies with the Numbas software.
- Adaptive marking was not employed in this study but is available in Numbas and can be introduced in the future.

Questions / Comments

Happy to chat live or on the Moodle thread or drop us an e-mail.

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