

Evaluation of short answer question assessment platforms through student-staff partnership

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Introduction

Due to COVID, teaching and assessments moved fully online, leading to changes in the way the existing learning platform (Moodle) was being used at University College London (UCL). UCL also implemented a new digital assessment platform - WISEflow. Recognizing the challenges the move to fully online assessments presented, we wanted to ensure that it did not erect any barriers to assessment success.

One challenge presented was the approach to assessment delivery and the assessment platform used. We wanted to ensure that students, regardless of their varying experience with online assessments, digital literacy and equipment would be able to perform the assessments on equal footing. We therefore decided to focus our project on the suitability of the two platforms (Moodle and WISEflow) and determine which platform features enhance the assessment process and are valued by students. We did this in direct consultation with the students, recognising that students are agents in the design and delivery of assessment as discussed by Fontanillas et al (2016). The involvement of students allows them to be more engaged with their online learning and increases both student satisfaction and learning outcomes.

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The ChangeMakers Project was centred on 3 low-stake, summative assessments in the NEUR0005 module in the first year Neuroscience course at University College London. The module is a lecture course that is taught in term 1 and 2 and the main summative assessment is a written online exam in term 3. The study was based on an open collaboration between all stakeholders involved in the assessments and assessment delivery, including: student leaders, relaying project updates to the wider student cohort; the module organiser, responsible for creating the assessment content; and Digital Assessment Leads (DAL), who were in contact with the IT teams responsible for the technical aspects of the aforementioned assessment platforms. Hence, we are extending the concept of the student-staff relationship by inviting academic teaching staff and also members of the DAL into our partnership, weighing the involvement of all three parties equally (Cousin, 2010). We believe that this shift constitutes a threshold concept in explorations in pedagogical practice and academic development, as delineated for academic staff and student partnerships by Cook-Sather (2013).

We wanted to acknowledge and enable students to become change agents and to change the ideas and preconceptions concerning the roles of academic and non-academic staff involved in teaching. This delivered a greater integration between the stakeholders, and a better understanding of roles and interdisciplinary understanding and respect. We aimed in our project to move from 'Students as knowledge creators' which is the norm for ChangeMakers projects, through 'Students as joint authors' to a practice of 'Intergenerational learning as participatory democracy' according to Fielding (2011). This involved the autonomy of the students in their student cohort-facing activities. The students in our team developed and executed the surveys, identified and invited the participants to the student forums, and ran the student focus groups. This allowed for a more comprehensive and well-rounded development of the online assessments and ensured that the needs and concerns of all stakeholders were taken into account.

The results of the ChangeMakers project were presented at the 2022 UCL Education Conference. The case study presentation was based on the framework we developed for student-staff collaboration to enhance the student experience and student-staff partnership. We believe this approach can be replicated in other educational institutions, including

Case studies

international organisations working towards improving student-staff collaboration, to achieve similar results. The following sections will delve into the results, evaluation and key takeaways from the study. By addressing the challenges of online assessments and examination platforms, and identifying areas for improvement, the project aims to contribute to the ongoing efforts to effectively integrate student body opinion, to allow students to shape the decisions around their education and inter-university collaboration in the assessment process.

Methodology

We conducted the project for six months with first-year Neuroscience students at UCL, focusing on the NEUR0005 module. The module has three in-course assessments, each worth 10% of the final grade, and a final exam worth 70%. We chose these assessments as they contribute little to the final grade but are still attempted seriously by students. They consist of six short answer essay questions that must be answered in one hour. After each assessment, students were given feedback surveys designed by the focus group. The survey results were discussed in the group to identify problems and suggest solutions, these were presented at stakeholder meetings and implemented if possible. The assessments were conducted first on Moodle, then on WISEflow, and finally on the preferred platform chosen by students.

The 12-member focus group was broadly representative of the 100 student cohort, split equally between international and home students, with a 1:2 male to female ratio. A quarter of the group was eligible for a SoRA (Summary of Reasonable Adjustments), similar to the overall cohort demographics. The focus group was led by three student representatives who spoke for the student body in stakeholder meetings. The surveys had 7-11 questions, with some questions removed in subsequent surveys (see Appendix). The first survey contained only closed-ended questions, but open-ended questions were added in subsequent surveys to allow for more feedback.

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Results

Our project centred around two topics: the evaluation of two online assessment platforms and the exploration of a new form of student-staff partnership.

Evaluation of two online assessment platforms

For the first topic we compared and evaluated the ease of use of Moodle and WISEflow. Both platforms functioned well and were not perceived as a performance barrier for students. This is supported by the opinions of students received as part of the post-assessment questionnaires:

'The platforms are almost identical in terms of actual function.'

'I don't think the platforms are an issue regarding the exam.'

'In my opinion it doesn't make much of a difference which platform we use.'

Overall, the students did prefer Moodle over WISEflow; one student commented:

'I prefer Moodle at the moment for exams, as we take all classes on it, so are a lot more used to it, and also seem less intimidating because of this. I have extra time, but I get nervous using new platforms as I'm never sure whether the correct time will be given to me or not.'

More comments can be found in the Appendix (Figures A2 and A3). Moodle is a widely used teaching platform at UCL, so students are familiar with its structure and utilities. In the questionnaires and focus group, students identified three challenges related to the assessment platform: time constraints, word count, and the need to switch between pages to access each question.

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Timing of the assessment

In the first survey, 58% of students noted timing as the most challenging part of the test. We explored this issue in a feedback session with the module organiser, and students agreed that the exam needed to be longer to allow for adequate and complete answers. This change was implemented in subsequent assessments, and in the following questionnaires, only 2% of students mentioned timing as a problem.

Formatting of the assessment

Running word count

Word count is defined here as the number of words the student has already written in a section of their answer, which would be indicated in a box on the students' screen. The word count issue was identified as a challenge for students in the surveys and was specifically mentioned in relation to the WISEflow platform, which had a word count feature that Moodle lacked. The digital assessment team responded to this feedback and made the word count feature available to students on Moodle, adding it as part of an update. As a result of the project, it was recommended that teaching staff manually activate the word count feature for assessments across UCL.

Switching between pages and questions

In subsequent surveys, a significant number of students (30-31%) mentioned the need to switch between pages and questions. The issue was discussed in focus group meetings and with project stakeholders, and after consultation with the DAT, the risks of having all questions on one page were explained to students. They were advised to switch between pages to ensure that their answers were automatically saved and protected (a feature of the online platforms).

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Exploration of a new form of student staff partnership

The ChangeMakers Project supports student-staff partnerships to improve the university experience. Our project focused on developing a democratic model of student-staff partnership through an inward-facing core team and outward-facing feedback to stakeholders. This multi-stakeholder structure facilitated the success of the project. Here we will briefly document how this multi-stakeholder structure for a student-staff partnership facilitated the success of the project.

Student representatives

A team of three student representatives took on the role of Project Leads in this ChangeMakers project. The project was primarily student-led, which means that the students had full control over the survey structure and questions, focus group meetings and discussions with the wider student cohort.

Module organiser

The module organiser played a crucial role as a direct link between students and teaching staff, facilitating good communication regarding assessment delivery. They evaluated possible changes to assessment platforms against assessment integrity and learning goals, and implemented changes based on student feedback, including pre-assessment training and tutorials before each assessment and increased time allowance for assessments based on student feedback. The impact of increasing the time limit was evident in subsequent surveys where students felt timing was less of an issue compared to the first assessment.

Digital Assessment Team

The DAL was able to use feedback from students to inform colleagues of possible improvements and initiate development. The implementation of the word count feature on

Case studies

Moodle was one such improvement. The DAT also responded quickly to students' suggestions about keeping short-answer questions on one page and recommended that questions be on separate pages to ensure that students' answers were automatically saved. This open communication and rapid response helped students understand why the feature was in place and addressed any concerns they had. The DAT also encouraged students to complete WISEflow and Moodle training sessions prior to undertaking assessments, which further improved their experience with the platforms. Overall, the student-staff partnership model was successful in improving collaboration between stakeholders and enhancing the student experience.

Discussion

Methods

The team acknowledged that changing questions between surveys was not ideal and that some of the questions were not specific enough, which resulted in students having different interpretations of the same term. For instance, in the question about formatting, students used the term 'formatting' to refer to several challenges such as the need for a word counter and difficulty in structuring their answers. The team realised that more training in survey design and implementation would have been helpful. Nonetheless, they learned valuable lessons from the survey and subsequent student discussion groups.

Engagement of the student cohort with the project

The student leads kept their cohort well-informed about the ChangeMakers project and its outcomes. They shared survey results and resulting changes with other stakeholders to ensure a closed feedback loop. As student leads also sat the exams, they could provide valuable feedback to the team. Surveys and discussion forums were organised and run by student leaders, creating a trusting and open environment where students could share their ideas and concerns. This resulted in a high student cohort engagement rate, with an average response rate of ~52% for the three surveys, exceeding engagement rates in the Continuous Module Dialogue (CMD) (20%). Nulty (2008) states that average response rates for on-line surveys is in the range of 30%, so we were clearly surpassing this. The closed feedback loop

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and timely issue resolution helped maintain high engagement rates throughout the three surveys.

Continued partnership between students and staff after conclusion of the project, importance and dissemination of results

We utilised our previous project experience, UCL support (e.g. Arena, a staff program to support student learning and quality of teaching), and academic literature to establish and maintain our partnership during and after the ChangeMakers project. The success of the project and continuation of the partnership is demonstrated by the involvement of students in disseminating results. The need for the project arose from the transition from in-person to online assessments, which presented a challenge for students globally and was of critical importance. Therefore, we believe the project results can and should be applied to the wider higher education sector. Our results and recommendations have been presented at faculty level. The students were invited to present a talk at the faculty-wide away day, 'Faculty of Life Sciences: Your experiences of teaching in the Life Sciences – sharing best practice', thereby extending our reach from the department level to the wider teaching community at UCL. Our results were also presented at the UCL Education Conference 2022, and thus to the wider higher education community. Additionally, the recommendations we developed based on our work have already been integrated into the recommendations for online assessment delivery and disseminated across UCL by the digital education team.

As a result of our ChangeMakers project, we provided a set of recommendations that can be shared across University College London and other academic institutions. The recommendations are based on what students want to see in assessments and assessment platforms and the challenges faced by students when using assessment platforms that are currently in place and are common across the institutions

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Recommendation	Reasons for implementation
Implementation of word count to the assessment platforms.	<ul style="list-style-type: none"> - Knowing how much to write in an exam is one of the concerns and challenges that students identify while undertaking assessments. - Shifting focus from the word count, towards the content of the answer to an assessment question. - Reducing student anxiety levels.
Increasing or adjusting timing for assessments.	<ul style="list-style-type: none"> - Providing an opportunity for students to answer assessment questions to the full ability, with less time pressure. - Reducing student anxiety levels. - Making assessments more accessible to non-native, English speaking students, who may require more time for translation reasons.
Training for the use of assessment platforms (pre-assessment training modules, walk-throughs, tutorials, either online or in-person).	<ul style="list-style-type: none"> - Reducing student stress levels. - Preventing technical errors and poorer assessment performance from students due to the lack of familiarity with the assessment platform. - Developing digital skills and further partnership with Digital Assessment and IT Teams.
Technical error report forms easily accessible during the assessment.	<ul style="list-style-type: none"> - Providing opportunities for students to report technical faults beyond their control while undertaking assessments. - Reducing student stress levels. - Providing direct communication between students and IT Teams.
Clear notification on dates of when marks are to be expected, when feedback will be available and in what form and format (whole class, individual, oral, written).	<ul style="list-style-type: none"> - Reduction in student anxiety levels. - Establishing clearer and more open communication. - Improving feedback, making space for constructive feedback exchange.

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Engage in more student-staff partnership activities.	<ul style="list-style-type: none"> - Bridging the gap in communication between students and teaching, as well as administrative staff. - Closing the feedback loop between students and staff. - Increasing engagement within the student cohort to participate in idea and feedback exchange.
Conduct ChangeMakers projects not just with students and staff but with all stakeholders involved in a chosen area of interest.	<ul style="list-style-type: none"> - Increasing outreach of the projects and impact on chosen areas of interest. - All stakeholders are equal parts of the partnership, providing a model for further collaboration on projects with an impact.

Table 1 - Recommendations for using assessment platforms and conducting assessments, resulting from the ChangeMakers project 'Evaluation of short answer question assessment platforms through student-staff partnership'

References:

Cook-Sather, A. (2013) 'Student-faculty partnership in explorations of pedagogical practice: a threshold concept in academic development.' *International Journal for Academic Development*, 19, 186-198.

Cousin, G. (2010). 'Neither teacher-centred nor student-centred: Threshold concepts and research partnerships.' *Journal of Learning Development in Higher Education*, 2, 1-9.

Fielding, M. (2011). 'Patterns of partnership: Student voice, intergenerational learning and democratic fellowship. In: N. Mocker & J. Sachs (Eds.), *Essays in honour of Susan Groundwater-Smith*, Dordrecht: Springer, 61–75.

Fontanillas, T. R., Carbonell. M. R, and Catasús, M.G. (2016). 'E-assessment process: giving a voice to online learners.'. *International Journal of Educational Technology in Higher Education*, 13(20)

Nulty, D. D (2008) 'The adequacy of response rates to online and paper surveys: what can be done?' *Assessment & Evaluation in Higher Education*, 33 (3), 301–314.

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APPENDIX - Raw Data from Surveys for ChangeMakers Project “Evaluation of Short Answer Question Assessment Platforms Through Student-Staff Partnership’

Figure A1 - Data from 1st survey

1st Neur0005 In-course Assessment Feedback Form

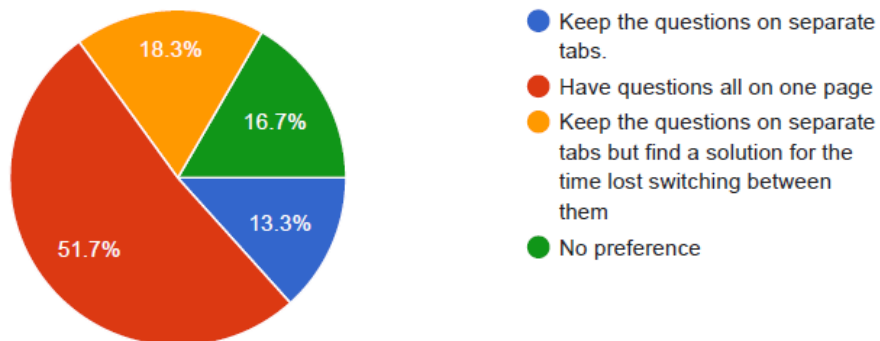
60 responses

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Would you find it helpful if all the questions were present on one page to save time switching between them?

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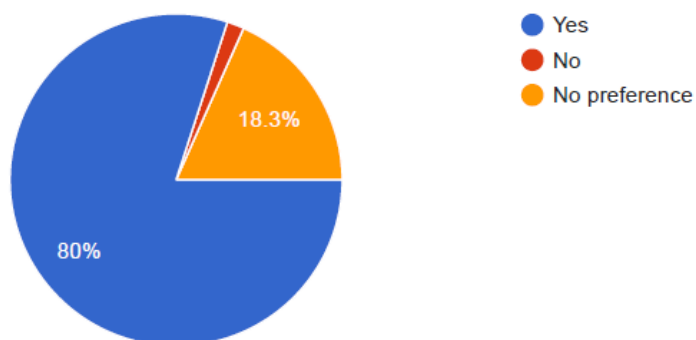
60 responses



Would it be helpful to understand and answer questions if the name of the Professor who set the question was stated?

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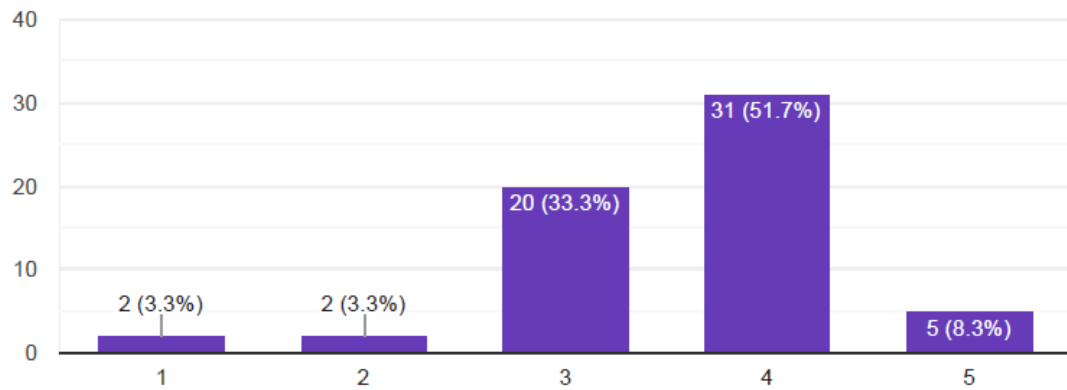
60 responses



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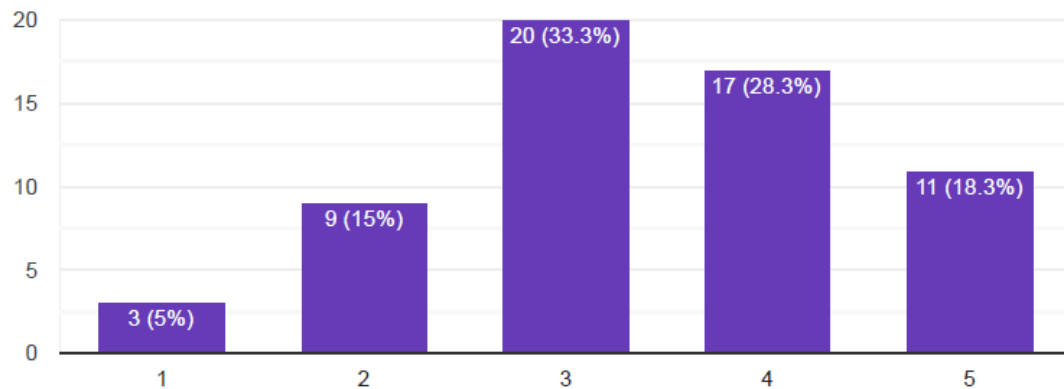
How challenging did you find the questions based on a scale of 1 to 5. (1 being very easy and 5 being completely impossible to attempt.) [Copy](#)

60 responses



On a scale of 1 to 5, were the questions in the test what you expected them to be? [Copy](#)

60 responses

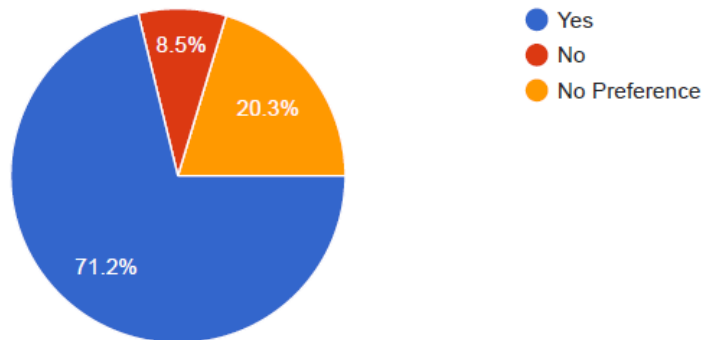


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Would it be helpful to be given the weightage of each question or the total marks for offer for each question?

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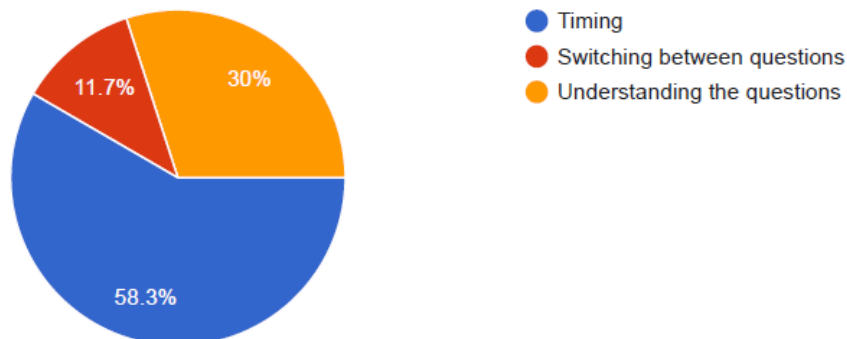
59 responses



What did you find was the most problematic part in undertaking the test?

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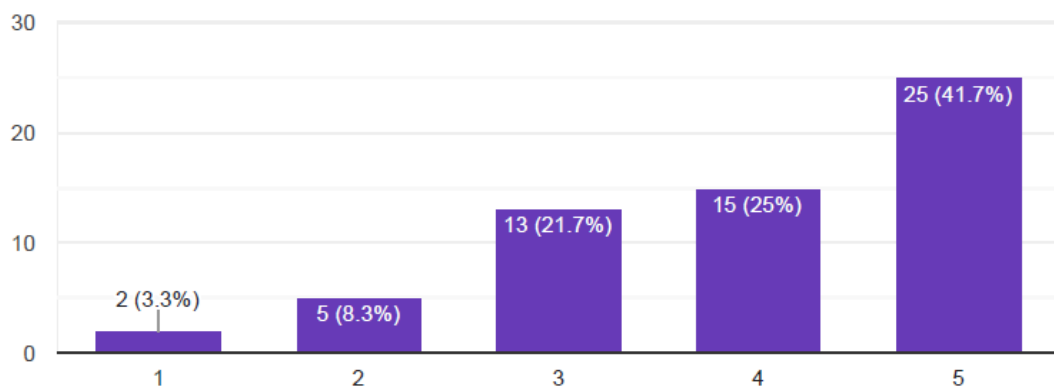
60 responses



On a scale of 1 to 5 how relaxed or stressed were you feeling before undertaking the exam?

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60 responses

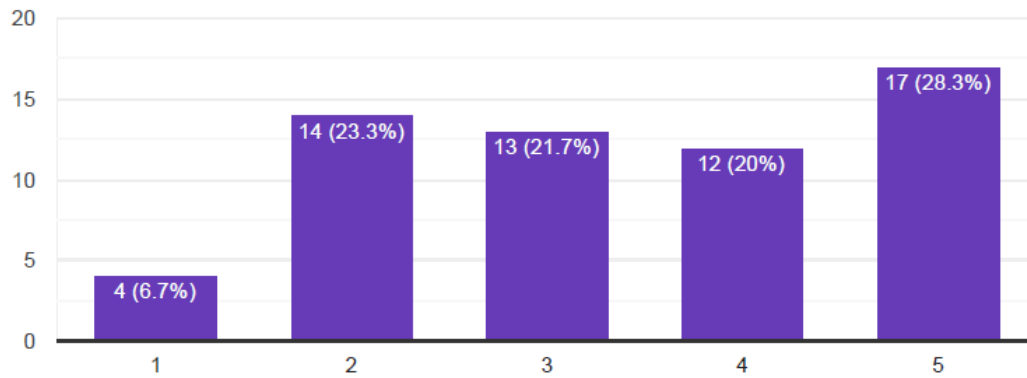


Case studies

On a scale of 1 to 5, how relaxed or stressed were you feeling after undertaking the exam?

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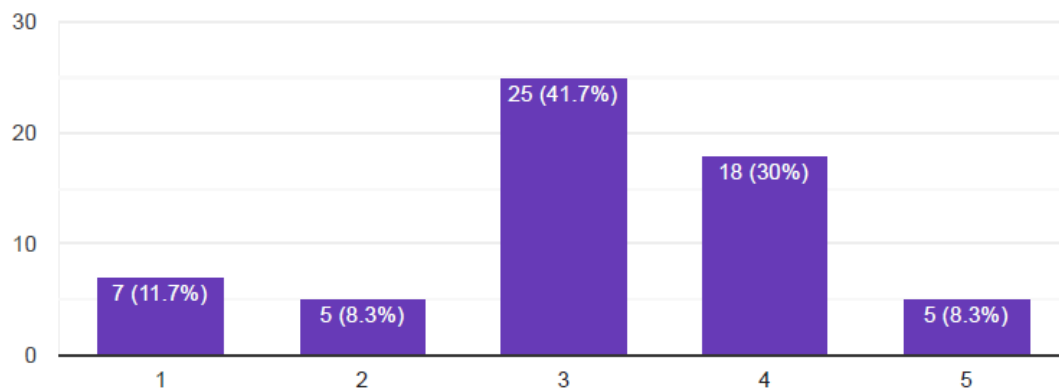
60 responses



On a scale 1 to 5, how much do you think the tutorial has contributed to your performance in the assessment?

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60 responses



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Figure A2 - Data from 2nd survey

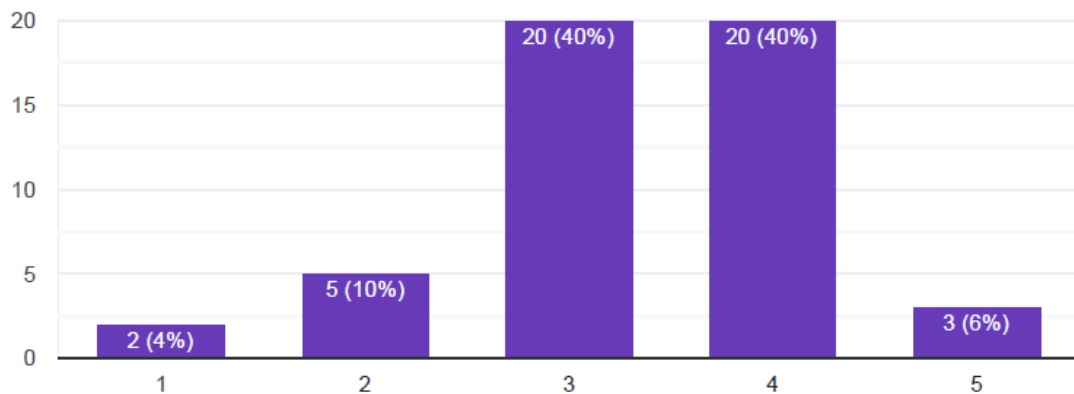
2nd Neur0005 In-course Assessment Feedback Form

50 responses

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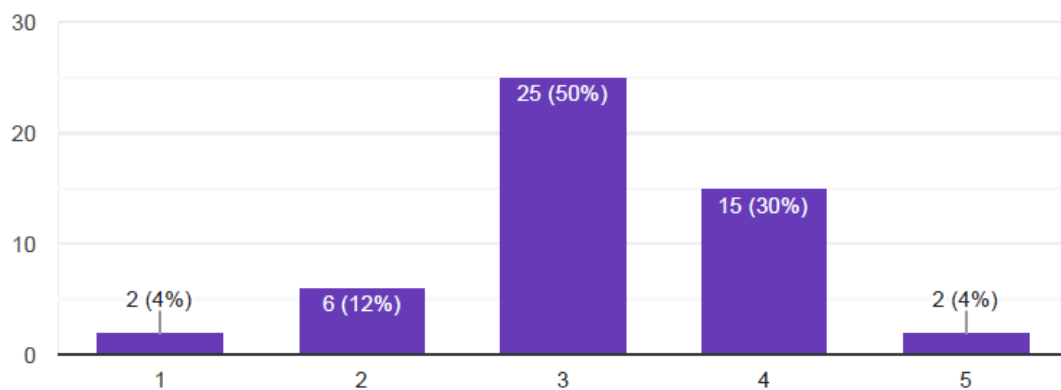
How challenging did you find the questions based on a scale of 1 to 5. (1 [Copy](#) being very easy and 5 being completely impossible to attempt.)

50 responses



On a scale of 1 to 5, were the questions in the test what you expected them to be? [Copy](#)

50 responses

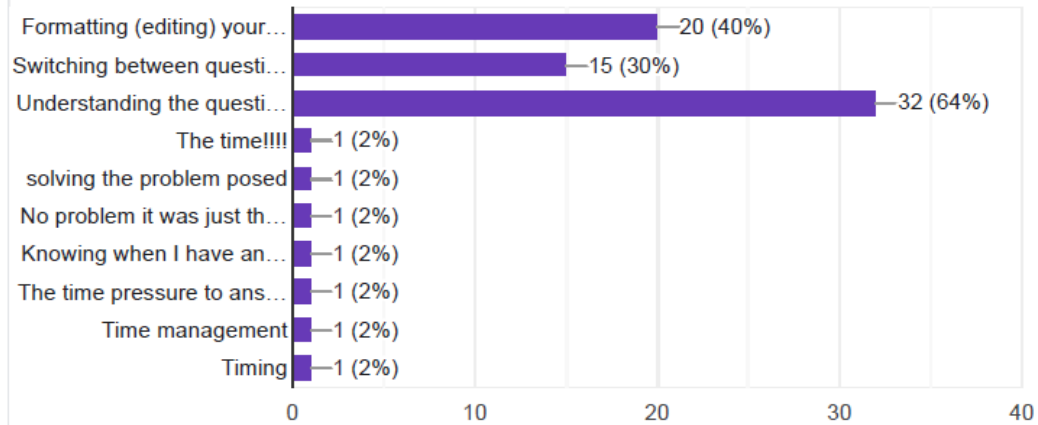


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What did you find was the most problematic part in undertaking the test?
(you can select more than 1)

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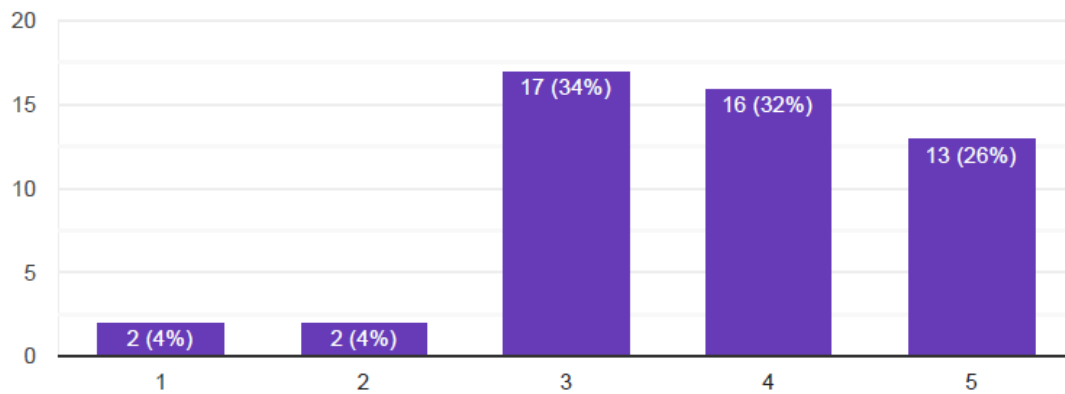
50 responses



On a scale of 1 to 5 how relaxed or stressed were you feeling before undertaking the exam?

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50 responses

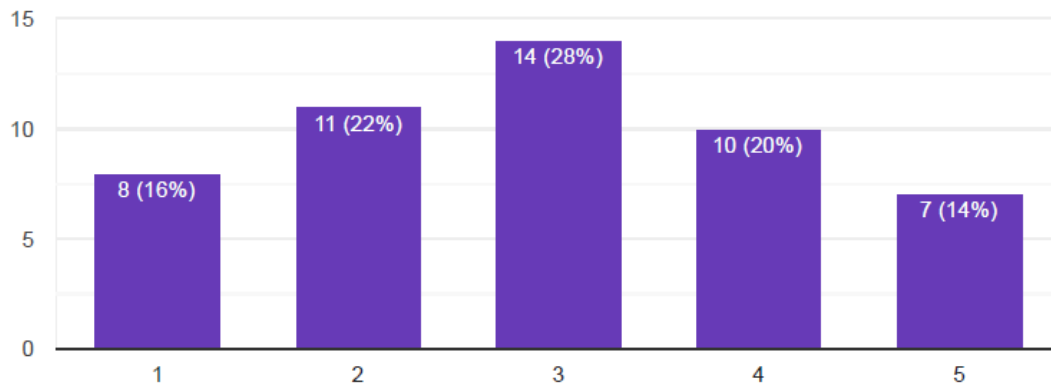


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On a scale of 1 to 5, how relaxed or stressed were you feeling after undertaking the exam?

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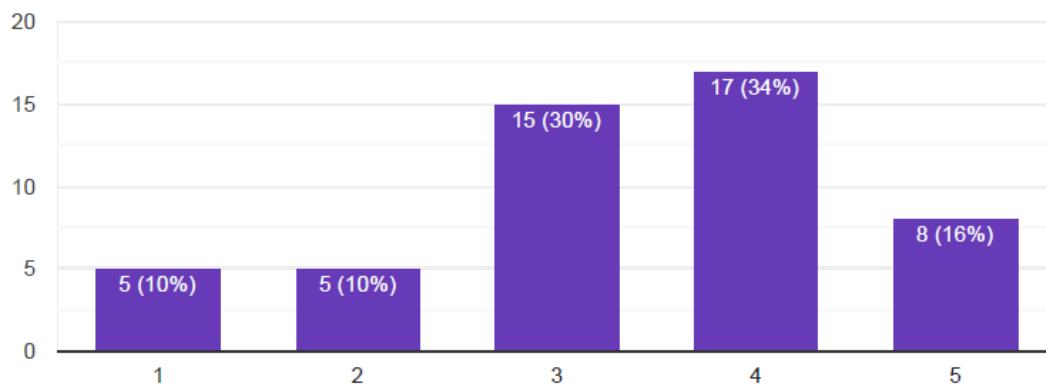
50 responses



On a scale 1 to 5, how much do you think the tutorial has contributed to your performance in the assessment?

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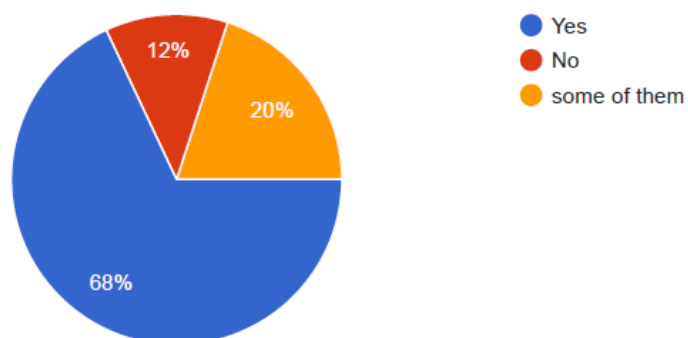
50 responses



Have you watched the 3 trial/practice exams on Wiseflow?

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50 responses

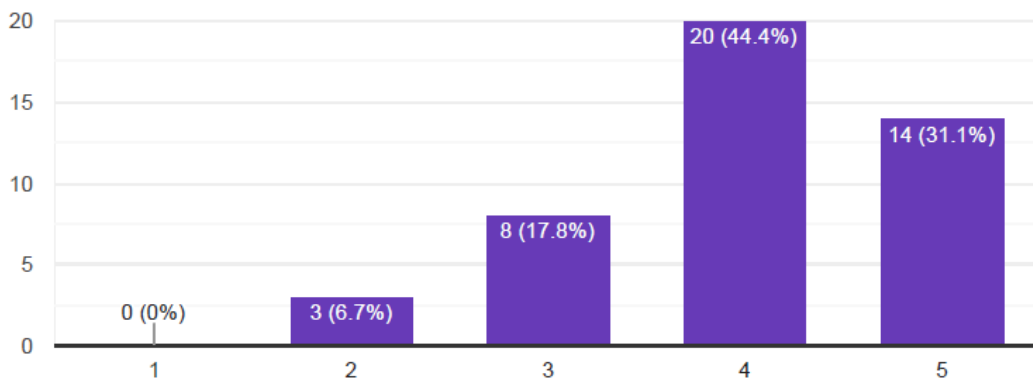


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If yes, was it helpful in understanding the structure, layout and navigating around the platform?

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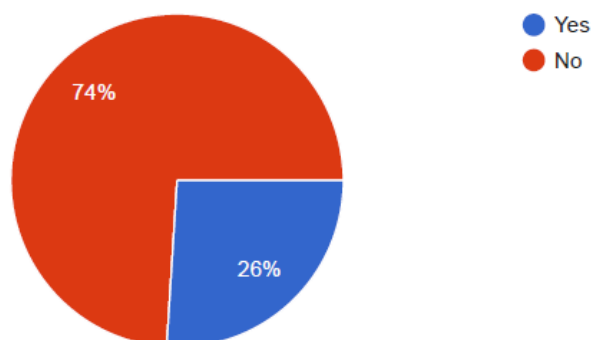
45 responses



Has experiencing both the examination platforms, moodle and wiseflow, changed in any manner how you prepare for the next (3rd) assessment?

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50 responses



Please provide why you said yes/no to the above question.

32 responses

Timing, allowing time to switch between questions and check that work is saved

Will spend less time switching between questions and will answer them in one go.

It hasn't changed how I study

The platforms are almost identical in terms of actual function.

Still revise in same way

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I don't think the platforms are an issue regarding the exam

The platform of assessment has not affected the way I prepare for the exams; the content is the most challenging aspect of preparing for an exam.

In my opinion it doesn't make much of a difference which platform we use

It allowed me to understand how to answer the upcoming exam questions

They made no big difference for me in terms of how to go through questions in assessments. I normally just go through all questions first and then decide on which to answer first.

Its still a little confusing because even though we can wrap our heads around the kind of questions asked there's no feedback to tell us what they expect from us in the qs and what is considered relevant or not!! (So our revision/preparation doesn't rly change)

it made me realize that i need to work with the material more and do further reading

it's almost the same – the only difference is that the word count appears on wiseflow

My preparation is not related to the type of assessment but purely on the content

I feel the same though wiseflow seems to be more fluent in switching between questions

I didn't have issues with the platforms

I will use different study technique

BEANS

because although the platform changed the style of questions were similar

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As far as I'm concerned, Moodle and wiseflow are practically identical. I prefer wiseflow as it seems custom-made for examinations. My preparation for the next assessment has not been affected by experiencing the platforms; however, it has been affected by the fact that I have now completed 2 exams, and I have a decent idea of what to expect from the 3rd one.

The examination platform does not affect my preparation to a large extent

Both are easy to use

It doesn't change how I prepare the exam, just the fact that when I write my responses I am able to see how many words I wrote down (which is very helpful)

I feel like just scraping my way through the content is very difficult in and of itself, so I never really have much time to change revision styles.

There's no large difference between moodle and wiseflow when it comes to typing answers.

Made me start practising answering questions online instead of on paper

I see the time it takes to switch between questions and it's best to look at which questions are easiest first and then do them and move on completely rather than partially do a question and keep coming back

In the next assessment, I will look at all the questions and answer those I feel more confident rather than just starting on the first question straight away.

I think the platforms are easy enough to use

Besides needing to see the word count, nothing really changed for me.

The formatting of the questions doesn't make a difference to how I revise

Since Moodle does not have a word count, I will practice to monitor my word count

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Please let us know of any other suggestions and improvements you think may be practical to implement and beneficial!

12 responses

Being able to view our answers after completing the test in order to apply feedback beneficially

Should teach us how we should attempt to answer the question / structure our answer

The markscheme doesn't really help

I don't really know what my answer is meant to look like so some feedback would be great

Practice questions with model answers, mark schemes.

We should do training how to tackle the question

I would like all the questions to be displayed on the same page. This would make moving between questions much more streamlined.

We have already discussed this in the face to face session, but having access to the questions and answers after the exam would be tremendously helpful for revision and self-reflection.

The argument that the questions may be invalidated for future years seems a bit shaky to me. Yes, the questions may be copied, shared, and uploaded online. However, I'm sure most people would find actually revising much more effective than relying on past questions which may not even appear on the exam. Accessing, reading, and copying these during an exam would be very time consuming and confusing.

Having a bank of past paper or example questions + answers would be tremendously helpful going into exams. It would give students a good idea of how to structure their answers and what level of detail to provide, among other factors. The questions would be a tremendously valuable revision tool provided from the department, adjusted to the level of knowledge that is expected from us. Additionally, with a large bank of practice questions, I believe exam questions could be made more challenging.

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More practice questions before the assessment

Making it possible to view the questions and the answers that we wrote after having been marked at the bare minimum for feedback. It's impossible to improve if you received a low mark and can't even reflect on what went wrong with that question.

I think some guidance on how to answer short answer questions before the first ICA would've been very helpful- maybe something you can improve for next year's cohort.

Make the questions and diagrams easier to undedyand

If all the questions were on one page so we just have to scroll and not have to flicker through

and waste time on finding the question

Open a PeerWise platform for neuro4/5



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Figure A3 - Data from 3rd survey

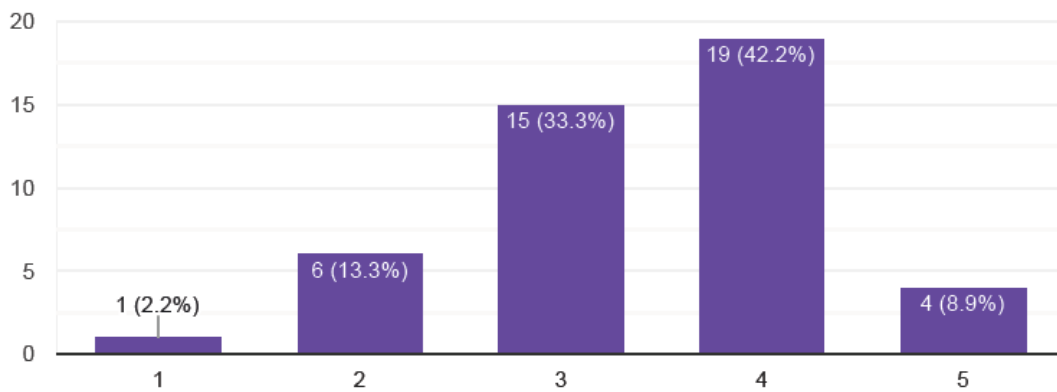
3rd Neur0005 In-course Assessment Feedback Form

45 responses

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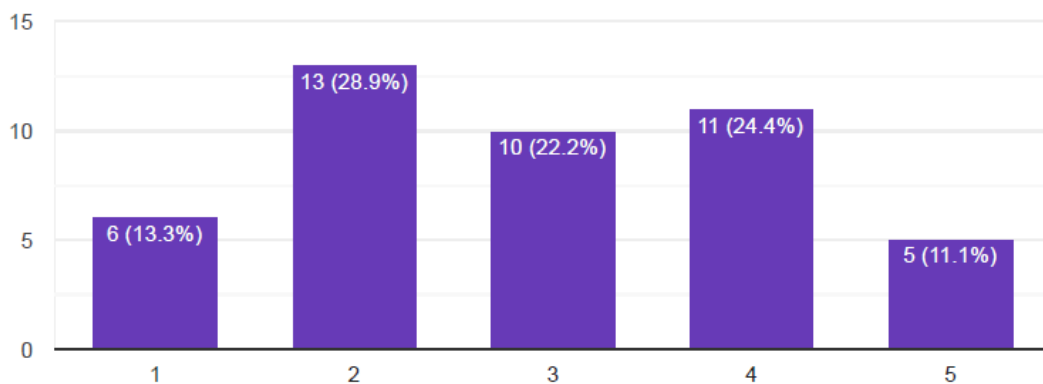
How challenging did you find the questions based on a scale of 1 to 5. (1 [Copy](#) being very easy and 5 being completely impossible to attempt.)

45 responses



On a scale of 1 to 5, were the questions in the test what you expected them to be? (1 being what I expected, 5 being not expected them at all) [Copy](#)

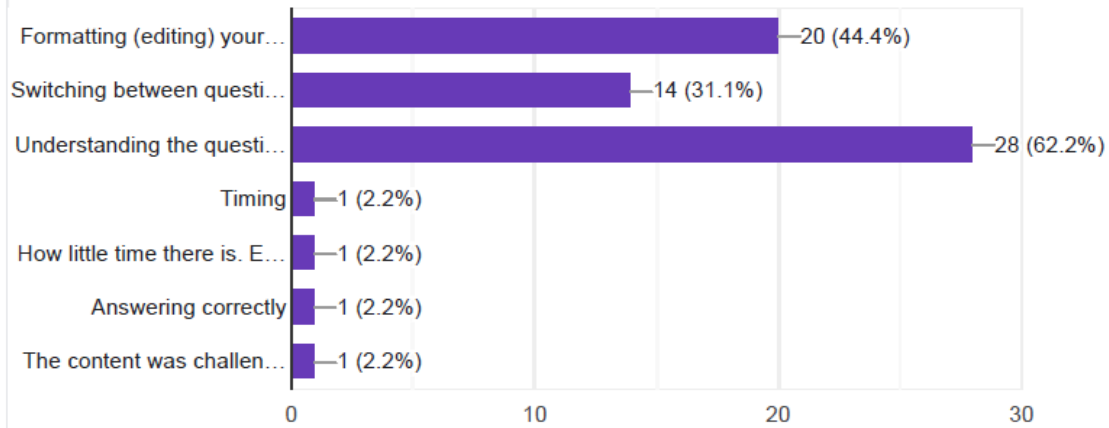
45 responses



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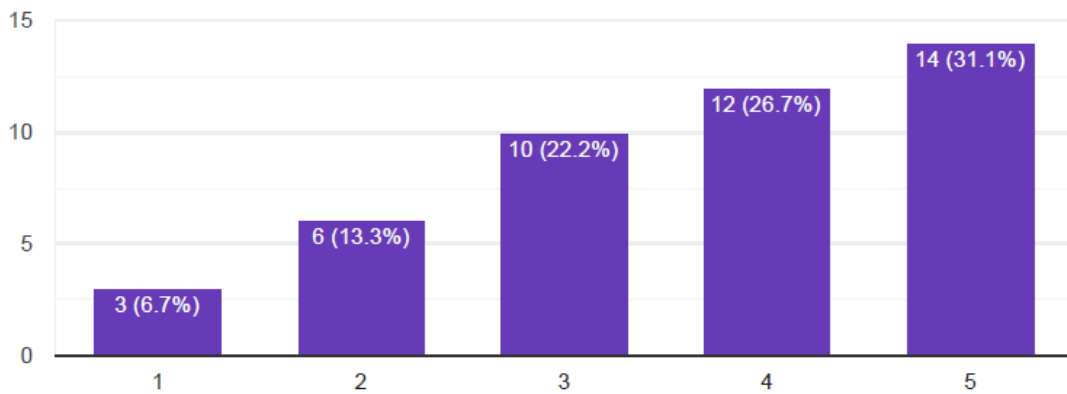
What did you find was the most problematic part in undertaking the test? [Copy](#)
(you can select more than 1)

45 responses



On a scale of 1 to 5, how relaxed or stressed were you feeling after undertaking the exam? [Copy](#)

45 responses

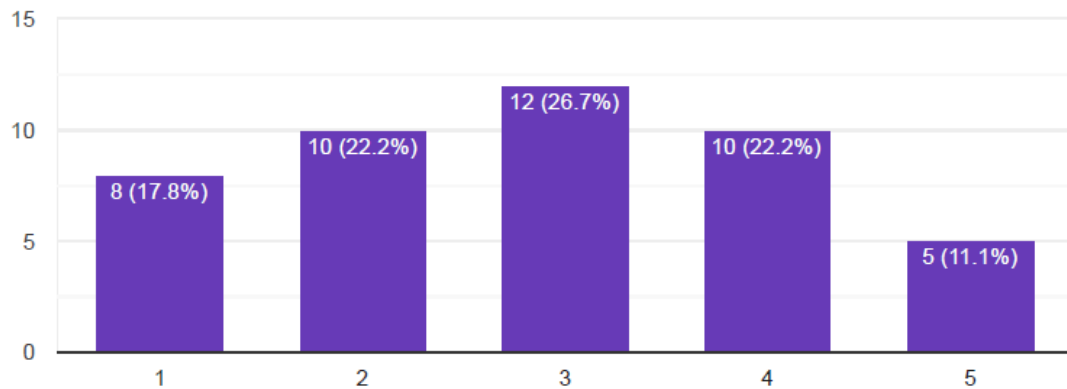


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On a scale 1 to 5, how much do you think the revision tutorial has contributed to your performance in the assessment?

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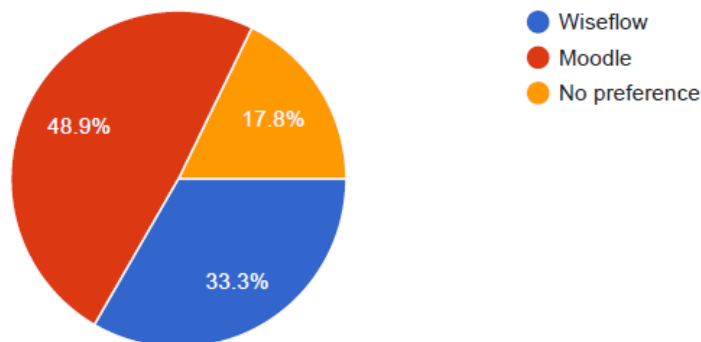
45 responses



After all of these in-course assessments, which platform did you prefer doing the tests on?

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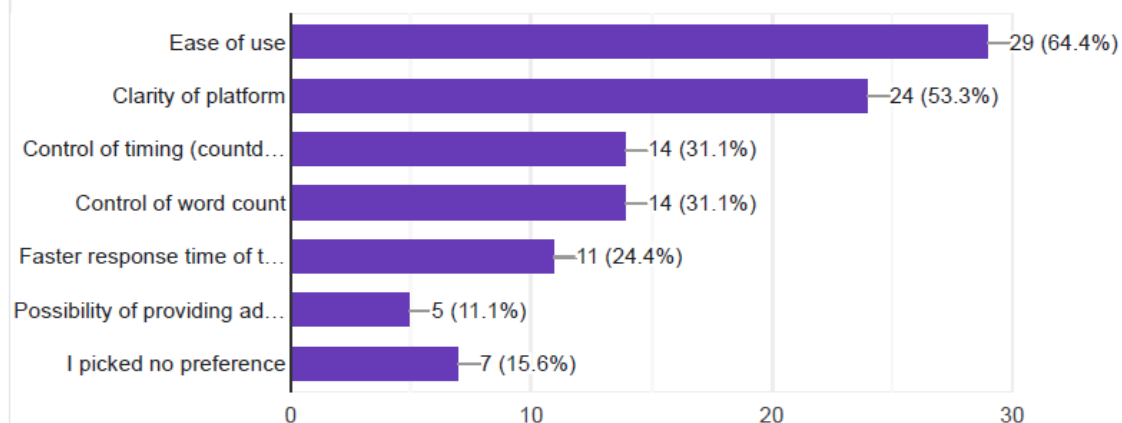
45 responses



What is your the reason for choosing the preferred platform?

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45 responses



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Please let us know of any other suggestions and improvements you think may be practical to implement and beneficial!

9 responses

I think there were too many try it raise qgestions which just ended up being confusing if you looked at them too long. One ToF would have been fine and then another essay based question would've been good for me personally

I think I struggled with the pharmacology calculations in one of the questions. An idea for the next year or our next exam would be to provide a few example questions of these kind of calculations because although the students can make up their own practice questions about other knowledge and we can read carefully and understand the graphs, it's difficult to make calculation questions ourselves and know what the right answer is.

Model answers given for each question

More time please

The exams should be much longer and have more open-ended questions similar to the essay style used in NEUR0004, where the difficulty isn't the time constraints but rather fact that there's no option but to have a good appreciation of the material necessary to apply the concepts

Be more specific with the wording of the questions because there was some confusion with the details on the last exam.

Maybe a tutorial system where you can pick a topic you want to revise deeply , instead of briefly going over all the topics

I preferred wiseflow but the form wouldn't let me press the button xD.

Case studies

1 - I prefer moodle at the moment for exams, as we take all classes on it, so are a lot more used to it, and also seems less intimidating because of this. I have extra time, but I get nervous using new platforms as I'm never sure whether the correct time will be given to me or not.

2- I find it quite hard to know the direction each question wants you to take. I find it easy to interperate a question the wrong way, so when I feel like I am answering the question, the marker is looking for something completely different. Maybe more training on how to interperate questions would be beneficial? Or questions that we can get feedback for / discuss as a class in between assessments that don't go towards our grade?

3 - I love the tutorials. They make you learn a topic enough to be able to teach it to others, which I've always found an excellent way of understanding it yourself. However, maybe different aspects could be incorporated into these tutorials? For example, bringing up a random question to the group to discuss/figure out to fully engage everyone. Every time I find that I am so worried about presenting my part that I can't listen to other people's topics.

4 - I find it extremely helpful when feedback is given. For example, the individual feedback for each question on the recent Pain assignment (NEUR0004) was very helpful. Paola's feedback on our GPCR essays was absolutely amazing. I understand that as a large cohort it is difficult to give feedback like this for each assessment, but the group feedback we get I don't find

helpful personally. It is quite hard to tell if what is being discussed applies to me and makes feedback easier to dismiss/ not understand when it is so general. My point is the more detailed the feedback, the better, but I guess this may be an obvious point with no easy fix.