

# A UNIQUE ASSESSMENT TO MOTIVATE STUDENTS IN ASTRONOMY COURSES

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## CONTEXT

In this presentation, I will outline my approach and development of a novel assessment item for introductory astronomy courses. This assessment has been implemented in two courses. The first course, PHYS1160 Introduction to Astronomy, is a wholly online general education course where the student cohort is numerous and diverse (averaging around 500 per teaching period). Typical of many online courses, this “designed for online” course does not have any synchronous activities or invigilated assessment; prior to 2020, the learning activities consisted of readings, low-stakes formative quizzes, discussion forum contributions, a quiz, and an essay. The second course, PHYS1116 Astrophysics, is a more rigorous course where the student cohort is small (around 10-15 students in its first teaching period) and consists of science students. PHYS1116 has one face-to-face tutorial, while all lectures are delivered online asynchronously.

Serious cases of academic misconduct are historically common in PHYS1160, particularly for the essay, and this presentation will focus on my replacement assessment of the essay in this course. Motivation is a factor that influences the likelihood of academic dishonesty (Krou, et. al., 2021). This assessment also aims to motivate science students to pursue astronomy.

## INTERVENTION

A new assessment item was designed to increase student motivation by allowing greater freedom of choice and creativity. In this new assessment, PHYS1160 students are assigned multiple NASA Astronomy Picture of the Day (APOD) images but select only one to focus on for their assignment, while PHYS1116 students select their own unique image. The style and structure of the assignment is the decision of the student. Students hand in a plan to receive feedback from tutors before submitting their final version. Extensive documentation, including examples, rubrics, past submissions, and FAQs are provided to aid students, given the perceived vague nature of the task.

## RESULTS AND CONCLUSIONS

Student and tutor feedback on the assessment has been positive. Students believed the assignment helped them to understand the topic, develop their communication skills, and exercise their creativity. Comments about freedom of choice and learning interesting concepts were frequent. Tutors commented that the assignment was more interesting to read than a standard essay, there were fewer plagiarism cases, and the plan helped students significantly. This feedback guides how the assessment is improved for the future. The resource has been peer-reviewed and accepted into the Australian Council of Deans of Science online resource repository (Jackson, 2021).

## REFERENCES

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