

# PERCEPTIONS OF AN ASSESSMENT LITERACY MODULE TO IMPROVE ACADEMIC JUDGEMENT – A PILOT STUDY

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## ABSTRACT

Expectation differences between assessors and students regarding assignment marking often results in student dissatisfaction accompanied by student complaints, indicating that despite following assignment task briefs and marking criteria, students' desired grades were not achieved. The Assessment Literacy Module (ALM) is an online grading tool designed to promote student development of evaluative judgement. The ALM allows evaluation of sample assignments – with students being the assessor – guided by assignment marking standards that convey how assessment criteria relate to the assignment outcome; a process that often highlights discrepancies in student academic judgement. Our pilot study surveyed staff ( $N = 13$ ) and students ( $N = 105$ ) to gauge perceptions of the impact of the ALM on the student learning experience. Students from eight subjects in Bioscience, Science and Biomedicine, across all three undergraduate levels, indicated that they now have a better understanding of their assessment criteria (85.7%), that they found the ALM helpful in preparing their assignments (87.6%), and that they are more confident with their assessment quality (78.1%). Staff indicated that they perceived students were able to use the feedback comments on the sample assignments to better understand assignment rubrics (69.2%), and that students who used the ALM had better comprehension of assessment expectations (84.6%).

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## BACKGROUND

A common complaint amongst undergraduate students is that it can be difficult to understand marking criteria (O'Donovan, Price, & Rust, 2008), perceiving that assessment criteria often include vague descriptions and a lack of transparency about marking range and the evaluation of performance levels (Chan & Ho, 2019). A student's difficulty in understanding marking criteria can be accentuated when their assignment tasks require academic judgement (the skill of being able to self-evaluate your work, and the work of others), as this skill is often difficult to explain (Moon, 2008). While most students are typically provided with a marking matrix (rubric), they often do not read it carefully or use it to evaluate their own work (Andrade & Du, 2005). Moreover, marking rubrics in isolation can be an inadequate tool to provide sufficient knowledge on evaluation criteria (O'Donovan, Price, & Rust, 2004). Furthermore, a wealth of literature supports the need for students to develop better assessment literacy skills in the tertiary environment (Hendry & Anderson, 2013; Sadler, 2002; Smith, Worsfold, Davies, Fisher, & McPhail, 2013; Tai, Ajjawi, Boud, Dawson, & Panadero, 2017), supporting the need for a pedagogical tool to fill this void.

To address this issue, The University of Melbourne developed the adaptable Assessment Literacy Module (ALM) (Siveges et al., 2021). The ALM is a *Canvas*-integrated online program that trains students to mark and provide feedback on example assessments created by the academic. The associated marking rubric is integrated within the program along with detailed expert feedback comments corresponding to each assessment criterion. Students are required to step through each section of the example and critically assess this work (i.e., the work of others) using the rubric. After completing their own judgement, students compare their evaluation to that of expert markers; a process that takes approximately one hour and is often incorporated into a scheduled class. The ALM examples are closely aligned with specific summative assessments within the subject (from scientific laboratory reports, posters, blogs, briefing notes, to literature reviews – any type of assessment can be used). The module encourages students to look at the assessment marking rubric in detail and practice exercising evaluative and academic judgement. The ultimate intended benefit to students from completing the ALM is an improved comprehension of assessment requirements including greater understanding of the marking rubric, that can be applied to their own assessments through the identification of strengths and weaknesses in their own work prior to submission.

The ALM was adapted and implemented in multiple subjects across several schools at The University of Melbourne including Veterinary and Agriculture, BioSciences, and Biomedical Sciences in 2021 and 2022. Preliminary observations indicated that the use of these modules reduced the number of student queries about marks on written assessments, while at the same time increasing student confidence when completing associated assessments (Siveges et al., 2021). In contexts where the ALM was used for training teams of markers, initial anecdotal observations indicate that this training reduced the level of marker anxiety as well as inconsistencies, thus reducing the need for re-marking or grade corrections (Siveges et al., 2021).

The current pilot study evaluated both staff and students' views on the use of the ALM to determine how students use the ALM, whether they value it, whether it changes their use of rubrics, or changes the preparation of their own assessments and fosters peer-review and self-reflection. The research hypothesis is that following completion of the ALM, students will perceive an improvement in their ability to interpret assessment rubrics (in other words, assessment literacy) and evaluate the quality and integrity (in other words, academic judgement) of their own assessment items. Underpinning the hypothesis, our research study comprises four primary research questions: (1) Do students think that use of the ALM has improved their academic judgement? (2) Do students think that the ALM has improved their assessment literacy? (3) Do students think that they have benefited from using the ALM? And (4) do staff perceive the ALM to be an effective pedagogical tool for improving students' engagement with assessment and feedback practices?

## DESIGN AND METHODS

### STUDENT PARTICIPANTS

A self-report questionnaire was distributed to ~2300 students via a *Canvas* announcement in seven subjects across three undergraduate levels of study. A total of 105 students responded, a 4% response rate. Table 1 indicates the specific breakdown of student responders and associated subject. The study was approved by The University of Melbourne Human Research Ethics Committee (Ethics ID: 2022-23773) and funded by an Australian Council of Deans of Science (ACDS) Teaching and Learning grant. A \$10 e-gift card was rewarded to each participant as a thank you for participating in the study. To mitigate the risk to students, questionnaire data – which included student identification – was not accessed by researchers until at least two weeks after grade certification. Once data was downloaded and linked to rating data from the ALM, all student identification was removed. For each subject, the linking task was completed by a researcher unconnected to the subject.

### STAFF PARTICIPANTS

A total of 13 out of 44 academic staff (subject coordinators) responded to the questionnaire, just below the target sample size (Malterud, Siersma, & Guassora, 2016) of 20 participants. Staff were employed across a variety of departments (School of Agriculture, School of Biomedical Sciences, School of BioSciences, School of Psychological Sciences, School of Population Health), in subjects across all three undergraduate levels. Six participants indicated they deployed the ALM in a core degree subject; two were elective subjects and two university breath subjects. The size of student cohort varied from small (0-30 students) to very large (1200 students).

**Table 1. Student responders in 2022 (N = 105) and subjects in which the ALM was delivered.**

Subject Code	Subject Name   Discipline (Assignment type)	Year Level	N	% of subject
BIOL10008	Introductory Biology: Life's Machinery   Biology (Written Practical Report)	1	6	1.38
BIOL10010	Introductory Biology: Life's Complexity   Biology (Written Practical Report)	1	16	3.82
BCMB20005 – SM1	Techniques Molecular Science   Biochemistry & Molecular Biology (Scientific Laboratory Report)	2	5	2.70
BCMB20005 – SM2			14	8.38
BCMB30011	Cellular Metabolism & Disease   Biochemistry & Molecular Biology (Essay)	3	4	5.63
BIOM30001	Frontiers in Biomedicine   Biomedicine (Peer Assessment)	3	24	4.48
BIOM30002	Molecule to Malady   Biomedicine (Group Poster)	3	10	1.90
SCIE20001	Thinking Scientifically   Science (Blog post)	2	26	4.28

### QUESTIONNAIRES AND DATA ANALYSIS

Both staff and student questionnaires were deployed through the *Qualtrics* platform. In both instances, consent was sought within the questionnaire. Data are presented as tabulated responses to questionnaire items/themes and Likert-scale based questions or as response numbers (strongly agree/agree) to Likert-scale based questions.

The student questionnaire comprised 28 questions across three themes ('Using the ALM', 'Academic judgement', 'Future use of ALM'), the majority of which were three- and five-point Likert scale questions with agreement/disagreement to given statements, plus occasional options for elaboration through free text. Quantitative descriptive and qualitative content analyses were carried out to identify themes across students.

The staff questionnaire comprised 33 questions: five-point Likert scale agreement/disagreement, multiple-choice and open-ended questions. Quantitative (Likert scale) and qualitative (content) analyses were carried out, the content analysis followed two phases. Firstly, free-text data were coded inductively into categories and then categories were reviewed and merged into themes. Themes were reported throughout based on the frequency with which participants mentioned specific ideas. It should be noted that in some instances, single participants mentioned multiple ideas. Staff quotes have been presented with the format of S# where # corresponds to the unique staff member. Questionnaire data have been anonymised and aggregated by frequency and percentage of agreement/disagreement for closed question responses.

## RESULTS

### STUDENT USE OF THE ACADEMIC LITERACY MODULE

Of the 105 students who completed the questionnaire, 95 students used the ALM program, while six students indicated they downloaded the examples provided without using the ALM program specifically. More than half of the students (N = 57) reported using the ALM in only one subject, while 48 students indicated they had used it in other subjects (though one student did not specify). In terms of student self-reported time spent using the ALM, 45 students spent an hour or more, while 30 students reported spending less than 45 mins, and 26 students reported spending between 45 mins to 1 hour completing the ALM, including reading the examples.

### IMPROVING ACADEMIC JUDGEMENT (RQ1)

We defined *academic judgement* as 'the skill of being able to self-evaluate your work, and the work of others, and asked students to indicate their agreement with four statements related to their perceived development of academic judgement. The results in Table 2 suggest that the majority of students agreed that the ALM improved their academic judgement.

**Table 2. Students' perceptions of academic judgement and the ALM (N = 105).**

(A = Agree, N = Neutral, D = Disagree, NA = No Answer)

Statement	A	N	D	NA
The ALM required me to use academic judgement	89	4	1	11
The ALM made me self-reflect and consider the quality of my own work when preparing my assessment	89	4	0	11
Prior to using the ALM, I did not know how to evaluate the work of others	25	20	48	12
Having completed the ALM, I realised why my previous assessments may not have scored as highly as I expected	40	29	24	12

**IMPROVING STUDENT ASSESSMENT LITERACY (RQ2) AND THE BENEFIT OF ALM USE (RQ3)**

Table 3 outlines questionnaire results where students were asked about their perceptions of using the module to complete associated assessments. Most students (a) found the ALM to be helpful in preparing their assessments, (b) perceived they had a better understanding of the criteria for the subject assessment and (c) felt more confident about the quality of their assessments after completing the ALM.

**Table 3. Student perceptions on their use of the ALM (N = 105).**

(SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree, NA = No Answer)

Statement	SA/A	N	D/SD	NA
I found the ALM helpful in preparing for my assessment	92	6	1	6
I used the examples as a template for my assessment	74	12	13	6
I now have a better understanding of the criteria for the subject assessment	90	5	2	8
Having to write my own marks and comments made me concentrate more	72	17	5	11
I feel more confident about the quality of my assessment	82	9	3	11
Using the ALM, I now have a greater understanding of how assessments are marked	79	12	3	11
The range of examples gave me a good feel for the spread of marks awarded	79	10	5	11
I would have liked an example that was perfect or a model answer	60	20	14	11

When asked about their future use of the module to assist future subject assessments through three-point Likert scale questions (agree/neutral/disagree), 75 students agreed that they would spend more time reviewing the marking rubric, and 77 students agreed they would spend more time on self-reflection and self-assessment. Nearly two thirds of students (68 responders) agreed that use of the ALM changed their approach to future assessments; with 81 students agreeing they would like to use an ALM for other assessments.

**STAFF PERCEPTIONS OF THE ALM AS AN EFFECTIVE PEDAGOGICAL TOOL (RQ4)**

All academic staff (N = 13) used the ALM to prepare students for at least one assessment, with eleven deploying two example assessments in the module, and two staff deploying three examples (for the one corresponding assessment item). Ten staff participants stated they used the module as assessment training of students, not linked to assessment, however in one subject it was linked to a five-percent assessment task, and a further two participants indicated the use of the ALM was classified as a hurdle requirement. In terms of the percentage of students who completed the ALM when it was deployed in class (evidenced by the internal metrics of the module that illustrate how much of the module has been worked through), two staff participants indicated less than 50% of their students completed the ALM, four staff indicated at least 50-60% of their students used the module to completion (i.e. worked through all criteria for the example given), two staff responded that more than 60% of their students completed the module, while a further two staff did not specify their student's usage. Eight staff also indicated the module was used as tutor training for marking consistency.

Staff members were also asked to indicate the primary purpose of the ALM in their subject using free text. Some staff members reported more than one purpose. The most frequent purpose was helping students understand the marking criteria and assessment task (9 staff), followed by helping students with assessment preparation (5 staff) and helping students develop academic judgement of their own work as well as others (3 staff).

Ten staff perceived that the ALM achieved a satisfactory outcome for the intended purpose(s) in their subject. However, three staff suggested that the ALM did not achieve a satisfactory outcome in their subject, primarily due to difficulties of getting students to engage with the ALM and the time it took to set-up the ALM. Of these three staff members, two had deployed the ALM in previous subjects. In

terms of the prior experience staff participants had with the ALM, eight staff had used the ALM previously for other subjects. Five staff participants had no prior use of the ALM in other subjects.

### STAFF PERCEPTIONS OF STUDENT USE OF THE ALM

Table 4 illustrates that most staff responders perceived students who used the module had a better understanding of assignment expectations and believed the students were able to use the feedback comments and examples to better understand the assignment rubric. However, four staff responders felt that when non-compulsory, it was difficult to get the entire cohort to engage with the module.

**Table 4. Staff views of outcomes due to the implementation of the ALM in their subject (N = 13).** (A = Agree, N = Neutral, D = Disagree)

Statement	A	N	D
Students were able to use the feedback comments on the exemplars to better understand the assignment rubric	9	3	1
Students who used the ALM had a better understanding of the assignment expectations	11	1	1
Students felt that the ALM DID NOT provide them with insight on the assignment expectations	1	3	9
It was difficult to get my students to participate in the ALM exercise	4	2	7
I received less student inquiries about the nature of the assignment because of their participation in the ALM	7	2	4

### STAFF REFLECTIONS ON USING THE ALM

Reflecting on ALM use, staff members were asked to indicate any unintended consequences of using the ALM in a free text question. Positive unintended consequence included the perception that students benefitted from understanding the marking process and subsequently achieved improved results as indicated by S13 who reflected '*Students who did the ALM realised that it was not easy to gain marks for the assignment and were pleasantly surprised when they did better than they had expected*'; and two additional staff reflected that the ALM was useful for the tutors' marking process. Three participants also mentioned negative unintended consequences including plagiarism of examples (from 2 staff members) and an increased workload for staff in preparing the examples and assembling the marking criteria.

Furthermore, at the end of the questionnaire, staff members were asked to identify specific positive or negative attributes associated with using the ALM in their subject in free text. Staff identified a number of positive and negative attributes. With regard to the positive, (a) ten staff felt the ALM increased students' understanding of the marking criteria as well as confidence in the development of their assessments (*"Makes students aware of the requirements for fulfilling criteria to make their submissions better..."*, S7); (b) four staff felt the ALM encouraged students to self-review their work; (c) three staff indicated that the ALM provided immediate informative feedback to students so they know what to do and what not to do (*"The feedback provided helps them identify the strengths and weaknesses of the sample reports, as well as how improvements could be made"*, S9); and (d) two staff indicated that use of the ALM encouraged students' agency in the interpretation of marking assessments (*"...it gave students the opportunity to be in the 'driver's seat' of marking"*, S13).

With regard to the negative attributes, (a) seven staff indicated that setting up the ALM (rubric/examples) was time consuming; (b) four staff were concerned that students tended not to engage honestly/seriously with the ALM if it were compulsory/hurdle (*"We can't ensure that students engage with it fully as they can just click through to tick off the hurdle"*, S9); (c) conversely, three staff indicated that students tended to not engage with the ALM when it was NOT compulsory (*"Ensuring student engagement in this as a non-assessed, non-compulsory assignment can be difficult"*, S13); and (d) two staff suggested that the ALM does not help students to develop their own judgement (*"It doesn't really help students come up with their own judgement of what quality is, they are merely applying what experts have put as criteria in the rubric"*, S12).

Though 2/13 staff indicated they felt students were tired and/or disengaged with the ALM due to having completed the module in other subjects, this sentiment was at odds with student perceptions indicating they would like to see the ALM implemented in other subjects (81/105 students).

## DISCUSSION

The findings from this pilot study support our research hypothesis. Following completion of an ALM deployed in undergraduate subjects at The University of Melbourne, students describe their perceived improvement in their ability to interpret assessment rubrics (assessment literacy) and evaluate the quality and integrity (academic judgement) of assessment items.

Addressing associated research questions (RQ) that underpin the hypothesis, the findings illustrate that students felt that the ALM had a positive influence on their understanding of assessment literacy. In terms of RQ1, *'Do students think that use of the ALM has improved their academic judgement?'*, the majority of students agreed that they were required to use academic judgement when using the ALM and that completion of the ALM made them self-reflect and consider the quality of their work (Table 2). Furthermore, students reported that having completed the ALM, they were more confident about the quality of their work (Table 3), suggesting that their perception of their academic judgement improved. Other approaches to developing evaluative judgement also report increases in student confidence in the judgement of a student's work, including the use of rubrics (Gyamfi, Hanna, & Khosravi, 2022), exemplars (Hawe & Dixon, 2017; To & Carless, 2016), and peer review by Ibarra-Sáiz, Rodríguez-Gómez, and Boud (2020), to name a few. Combining these approaches alongside dialogue with academics has been shown to enhance a student's academic judgement and aid in their development of self-regulated learning (To, Panadero, & Carless, 2022). The strength of the ALM is that it represents a single pedagogical activity for students that encompasses each of these approaches.

Previous preliminary evaluations of students from the Melbourne School of Psychological Sciences in 2020 and 2021 illustrated that most students who completed the ALM agreed/strongly agreed that it aided assignment preparation (90.8%), fostered improvements in understanding the assessment criteria (93.9%) and were more confident when approaching their own assignments (72.8%) (Siveges et al., 2021). Our pilot study findings support and affirm the literature (see also Rust, Price, and O'Donovan, 2003), with students reporting that they now have a better understanding of the criteria for assessment and have a greater comprehension of how assessments are graded (Table 3). Students also agreed that the provision of a range of examples gave them an appreciation for the distribution of marks awarded (Table 3), further improving their understanding of assessment literacy. So, reflecting on RQ2, *'Do students think that the ALM has improved their assessment literacy?'*, we can report that yes, students indicate that their understanding of assessment literacy has improved after engaging with an ALM, which is likely to lead to improvements in student learning (Smith et al., 2013). Further work should include accessing the ALM metrics to compare student judgement of examples with the expert marking to see if this changes with each example attempted.

In responding to RQ3, *'Do students think that they have benefited from using the ALM?'*, most students indicated that they perceived the ALM to be beneficial and helpful in preparing for their assessments, with a large proportion of students using the examples as templates for future assessments (Table 3). Students also indicated that having to write their own marks and comments within the ALM made them concentrate more, and that they engaged with the marking rubric, essentially focussing them on the task at hand and ensuring their expectations aligned with the assessment (Table 3) – further developing their evaluative judgement which is an essential skill in lifelong learning. Given that evaluative judgement and self-regulated learning are intertwined and interdependent (Panadero & Broadbent, 2018), it is possible that the preparation provided by the ALM to complete associated assessment tasks could feed into the forethought phase (task analysis and outcome expectations) of self-regulated learning (Zimmerman & Moylan, 2009), though this should be further explored in future studies. Based on the results presented however, we can respond to RQ3 that yes, students *do* think they benefited from using the ALM.

In response to RQ4, *'Do staff perceive the ALM to be an effective pedagogical tool for improving students' engagement with assessment and feedback practices?'*, staff agreed that students who they perceived engaged meaningfully with the ALM benefited from an enhanced understanding of their assignment expectations (Table 4). Despite the ALM being time-consuming to set up, staff acknowledged that the opportunity for students to evaluate sample assignments guided by expert grading and feedback led students to understand assignments more critically, akin to that found by Hendry and Anderson (2013) who also report that some students use exemplars for ideas on how to structure their own assessments (note that 74 students in this study indicated they used the examples as templates for assessment, Table 3). A key caution was that examples are at risk of being plagiarised, especially when seen as a 'model answer' (see Table 3 where 60 students



agreed/strongly agreed that they would have liked an example that was perfect or a model answer), which is consistent with the literature that states students often use exemplars as templates in isolation from the rubric to plagiarise (Bell, Mladenovic, & Price, 2013; Handley & Williams, 2011). It is therefore important when crafting examples to take sufficient care to reduce the desire by students to directly copy, perhaps through constructing examples on a similar but different enough topic to that of the summative assessment.

Though a staff criticism of the module also included that the ALM does not help students to develop their *own* judgement because they are simply applying a rubric, it could be argued that students are indeed developing a higher level of evaluative judgement through the process of applying criteria from the rubric to a previously unseen piece of work, thereby advancing their own assessment literacy.

It is important to note the distinct limitation of the pilot study being the low student response rate of 4%, giving rise to evident self-selection bias. While the trend within the data was consistent across all subjects it is important to acknowledge that the data may not be wholly representative of the student cohort more broadly. It is also necessary to point out that when not-compulsory, not all students completed the ALM, with some subjects experiencing only 50% completion. This suggests that the perceived benefit of the ALM is not shared by all students, though several staff suggested they would make the completion of the task mandatory in future iterations. Future delivery of the questionnaire should allow for time in class to promote student participation.

While more research is needed, our pilot study suggests promising outcomes about the utility of the ALM. Not only can the ALM be an effective tool for staff to set expectations about assessments by providing clear guidelines and criteria to students across Science disciplines, the Humanities and beyond. Furthermore, our pilot study and published literature indicate that the ALM is helpful in supporting student learning by increasing confidence and improving understanding of assessments and marking criteria in undergraduate subjects. Thus, the ALM may be a useful pedagogical tool that helps to achieve consensus between staff and student expectations about assessments in university studies.

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