Developing and evaluating a framework to embed academic literacies at ANU

Summary findings

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Contents

Project Summary

ANU Academic Skills (AS) provides education on the academic literacies involved in study. Embedding academic literacy support within courses can positively impact students' academic success (Chanock et al. 2012; Brooman-Jones, Cunningham & Hanna 2011; Harris & Ashton 2011). However, embedding academic literacies is challenging because assessment tasks require complex literacies which are difficult to untangle and teach comprehensively in the time available. For example, learning how to understand questions, analyse academic texts, plan and write assignments are each complex tasks.

This project designed, implemented and evaluated a framework (Figure 1) intended to assist academic staff to easily and comprehensively embed academic literacies. Our academic literacy framework was designed to enable staff to identify the academic literacies, teaching and learning activities (TLAs), and staff support options relevant to students' needs.

Develop academic cultural competency
- Recognise differences / understand expectations
- Adapt to new contexts
- Collaborate with others
- Develop fluency in English

Develop strategic self management
- Identify motivations
- Set goals
- Break down tasks
- Prioritise tasks
- Develop a routine

Engage in academic activities with integrity
- Understand the principles
- Acknowledge others' ideas
- Distinguish ideas from others

Engage critically with information
- Find appropriate sources
- Evaluate sources
- Read strategically
- Manage information
- Synthesise information

Communicate as a scholar
- Use genre-appropriate argumentation
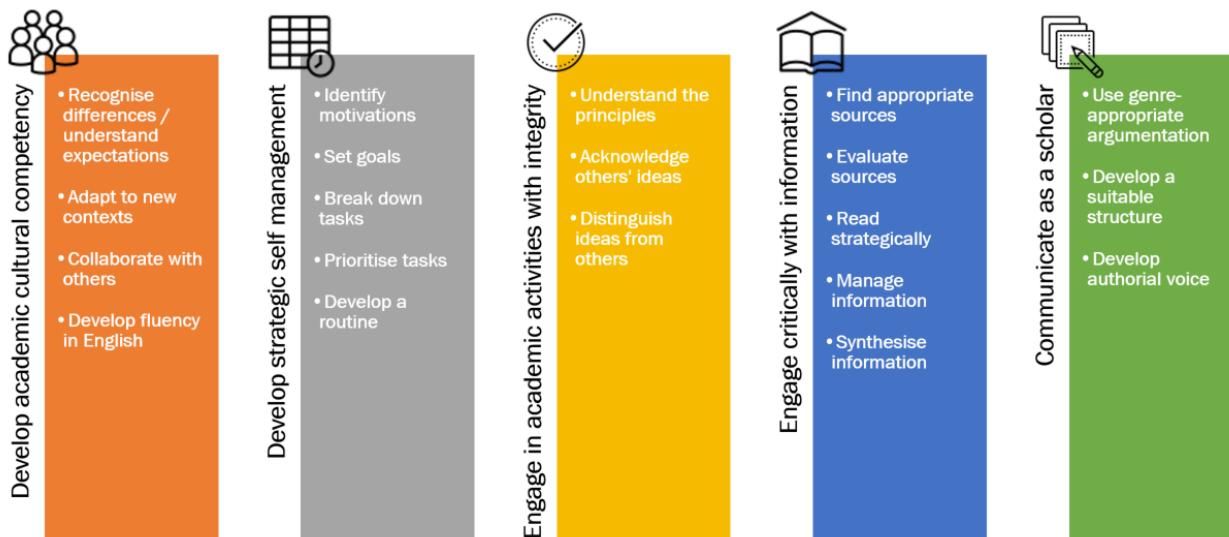- Develop a suitable structure
- Develop authorial voice

Figure 1: ANU Academic Skills academic literacies framework

Working with courses in Colleges of Asia and the Pacific (CAP), Arts and Social Sciences (CASS) and Business and Economics (CBE), we evaluated the framework and our TLAs using qualitative and quantitative student and staff data. We had two guiding research questions:

1. Do staff find the academic literacies framework useful? If so, how? If not, why not?
2. Do students apply the advice provided in the TLAs to their work?

Responses to the framework were somewhat mixed. In many cases academics had little engagement with it. However, those that did engage with it reported that the framework had a positive impact on their teaching. They valued its identification of their students' needs, including the often sidelined "input" literacies such as time management, reading, note-taking strategies. In some cases the framework even enabled academics to consider ways to embed academic literacies at a sustained program level. For the AS team, the framework provided a valuable overview of the team's core curriculum which helped to initiate embedded teaching.

Embedded teaching was highly valued by all groups involved. Academics and tutors reported that the TLAs strengthened their own teaching and assessment design and helped to reduce the teaching burden. The AS team echoed these views and reported that it clarified academic expectations and provided students a much needed safety net of academic support. Students reported that following the advice helped them to improve their work, made completing the assessments easier, and increased their ability to understand the course material. As one interviewee explained:

> My experience in this course and others in my degree has been that when lecturers provide really clear advice about what they want and expect, it is far easier to then focus the scope of my research, structure my writing and use my time efficiently to meet those expectations and achieve high results. Following Academic Skills advice does lead to better outcomes.

These positive reports were reiterated in student surveys. 88% of respondents reported positive satisfaction with the AS advice, 89% reported that they think it is worthwhile to spend class time learning about how to do their assessment tasks, and 81% reported that they wish to continue receiving AS advice in their courses in future. This feedback will assist AS to strengthen and promote the framework and embedded teaching across the University.

1. Activities, outcomes, deliverables

Activities

From Semester 2 2019 to Semester 1 2020 we invited convenors of various courses across the university to take part in the project. In total, 7 courses were involved with the project. 3 of those courses were in CBE, and 4 were in CASS and CAP. The courses represented a mixture of UG and PG, first and later year students.

For each course, members of the AS team met with the academics (and in some cases, tutors) to discuss the framework and how we could embed academic literacies teaching within their courses. In our meetings, we used the framework to help us identify the literacies that were relevant to the students' needs. Following these early discussions, the AS team and the academics designed resources and delivered workshops for the students. These workshops covered a variety of academic literacies, including time management, reading strategies, note-taking, referencing, academic integrity, and academic writing (reports, reflective pieces, and essays). The majority of these workshops and resources were delivered during the course lectures and tutorials.

Delivery methods varied. The most common format was that the AS team would deliver the workshops. Another popular option was for the academics to co-teach the workshops with the AS team. Also popular was the option for the AS team to provide resources and training for tutors to run short tutorial activities about academic literacies. The workshop materials and supplementary resources were also provided on the course Wattle sites for students to review in their own time.

Throughout the project we collected feedback on student and staff attitudes towards the embedded teaching. In each course, we ran two online student surveys: the first at the start of semester, before we had delivered any teaching, then the second mid-way through semester. The first survey enquired into whether students had had advice about academic skills in the past, and whether the students wished to receive academic skills advice in the course. The second survey sought feedback on students' attitudes about the academic skills advice that had been provided in the course and whether they regarded the embedded teaching as worthwhile.

In addition to the student surveys, qualitative data was gathered from the academics, students and the AS team. The purpose of this data was to gather staff and student perspectives on the experience and impact of the framework and embedded academic literacies teaching. For each course, the Research Officer conducted interviews with academics, and interviews and focus groups with students. The Research Officer also conducted interviews and a focus group with the AS team. The Research Officer compiled and conducted analysis on the data. The findings from this report will be shared over the coming months with all the project participants.

It is important to note that this project did not collect data on student grades or conduct analysis of student work. At the outset of this project we decided that we would not collect such data for two main reasons. First, establishing a control group, for instance of a group of students in the same course who do not receive the advice, would be unethical as it would unfairly deny assistance to those students. Second, it would be nigh impossible to draw accurate conclusions based on a comparison of grades from previous years' courses or comparable courses, given that advice provided in courses change from semester to semester, and that in some of the project courses we had a history of providing embedded teaching. There would be too many variables involved to accurately make a judgement based on grades. Therefore, we focused on attitudinal data in order to discover the perceptions about embedded teaching. While attitudinal data has its own biases, we believe it is a valuable resource to understand the first hand experiences with and feedback about our teaching and resources.

Outcomes

Our project focused on two research questions:

1. Do staff find the academic literacies framework useful? If so, how? If not, why not?

2. Do students apply the advice provided in the TLAs to their work?

In answer to the first question, we found that the framework was most valued by the AS team and academics who were new to embedding. In response to the second question there was almost universal appreciation from staff and students for the support that the embedded teaching offered students. Overall, the project found strong evidence for the positive impact of embedding academic literacies teaching within courses. A host of additional findings were also discovered, including staff and students' frequently held view that academic literacies teaching works best when academics and the AS team work closely together to

seamlessly acculturate students into the discipline's language and disciplinary conventions. Enablers, obstacles, and motivations for embedding were also analysed, together with impacts on staff and students, and feedback on specific TLAs.

Overall, response rates were fair. 12 academics were interviewed, all team members of the AS team participated in interviews, and 18 students participated in a mixture of focus groups and interviews (which for the purposes of this report, we will describe as interviews). From a total of 1,002 enrolled students, the first survey had a 48% response rate, and the second had a 13% response rate. The following sections detail key findings about the framework and embedded teaching.

The framework's value

We had mixed results in relation to the framework, depending on how familiar staff already were with our service. As expected, in some cases academics did not closely engage with the framework, particularly when they were already very familiar with the services the AS team provides. The framework is designed to assist staff to decide which academic literacies their students require, and since in some cases staff had a history of working with the AS team, decisions had already been made as to the relevant literacies to teach. In such cases, the framework acted predominantly as a reminder of the AS team's curriculum.

However, the framework was valued by many of the academics who were new to AS services, and responses indicated that, for these staff, the framework serves its intended purpose as a tool to assist academics to easily and comprehensively embed academic literacies. Cases in which the AS team emphasised the framework in early discussions with academics new to the service resulted in strong praise by academics familiar with it for its utility both as a means to identify specific course inputs and outputs, and as a useful way to consider the broader education of students. As one academic explained, "I like the idea of someone thinking through all the competencies that a hypothetical student should achieve throughout the program, and thinking about how I could contribute, how my course could contribute to that agenda." This response shows that the framework and, more generally embedding academic literacies within courses can enable academics to consider students' development across a whole program. Similarly, another participant elaborated on the comprehensive nature of the framework, stating

Across the board from that framework, there are a range of holistic as well as focussed sets of skills and strategies that are not just important for uni life, but important for thinking about various aspects of life beyond. And more broadly, thinking consciously and having students think consciously about some of these things is really important.

Responses like the above indicate that there is appetite at ANU to consider embedding academic literacies on a more sustained basis, potentially at the program level. The framework therefore fulfils its intended purpose as a tool which can assist staff to consider ways to embed academic literacies, in particular for staff who are new to AS services.

There was also evidence that the framework enabled staff to consider embedding certain academic literacies which they would not otherwise have considered including. Discussion of the framework led to three of the seven course convenors deciding to provide students advice about transitional and input literacies such as time management, researching, reading and note-taking strategies. In the AS team's experience, when organising embedded teaching, typically convenors tend to emphasise output literacies (i.e. academic writing) much more frequently than the transitional and input literacies. It is interesting then that the framework appeared to draw academics' attention to these areas. One academic reported "I focused particularly on the academic input column. So the strategies around research, preparation note taking, finding materials, you know, those basic kinds of core academic skills, and built those into a number of different tasks through the semester." Another explained that they have observed that students often have difficulties in the input literacies areas, saying that the framework

might have helped me to focus because the issues that are outlined in the academic input column…are issues that I've noticed across a number of semesters…I thought students could perhaps deal with some advice or benefit from strategies, particularly, say, around the active reading component, how to not just approach a text and randomly jump in, but how to read it pragmatically and efficiently and actively.

It is promising, then, that the framework enabled these academics to consider how teaching the wide variety of these literacies could benefit their students. Overall, these academics' responses indicate that the framework provides a valuable starting point in the consideration of how academic literacies may be embedded within discipline teaching.

For the AS team, the framework was perceived to fulfil its function as a tool to aid conversations with academics and build understanding of embedding academic literacies as a scaffolded process. As anticipated, AS team members reported that the framework acts as a conversation starter to help initiate

discussions with academics about embedded teaching. Many held the view that the framework worked to create a shared language between AS and academics, making it easier to understand what we mean by academic literacies. It also helped to promote the explicit teaching of academic literacies. As one team member stated, "it opens up the possibilities and then allows us to talk more about, like, note taking and reading strategies, which maybe they wouldn't have thought that we would teach." Similar comments indicated that in early conversations with academics, the framework provided the AS team a launching point from which to talk about a range of options. Further, the team reported that the framework assisted in having discussions about extending the embedded teaching beyond the confines of a single topic or single workshop. For example,

> I find that the framework provides a narrative, too, in terms of the different stages that we can cover…academic input versus outputs or transitional and time management issues. And they could see the range and the types of activities and issues we could cover under those different categories.

This scaffolded approach is something which the AS team strives to support, and having the framework as a tool to communicate this approach was valued. In some cases discussions about the framework with academics led to meetings with their colleagues. As one team member described,

> They thought, oh, yeah, the input side of things and the transition aspects are relevant for their first-year students. And they were talking about how the students throughout their degree would need those skills. So, it was a conversation starter there. And from there they also invited me along to talk with their whole team of staff about the framework

For conversations with academics, therefore, the AS team found the framework offered a range of benefits and helped the team's overall goal of providing scaffolded, timely advice on relevant academic literacies.

Not only did the framework help the AS team's conversations with academics, it also was a valuable curriculum document that was felt to strengthen the team's practice. Members of the team reported that the framework helped them to decide which academic literacies were most relevant to teach. One member reported

> It's useful when we are looking at a course outline or a class summary and the assessment pieces. It's useful to see what those assessment pieces need—what literacies will the students need to complete the assessment items. It's also useful to see if there are big jumps—if there is an assessment item that is complex and it is for a first course. It's useful for us to see which literacies the students will need to learn.

As a guiding tool for the team, then, the framework helps us to articulate our curriculum and identify how best we can assist in teaching students.

Overall then, the framework has value for demonstrating the range of literacies we teach. Staff who are unfamiliar with our service are particularly encouraged to consult the framework, as are those who are engaged in reviewing course and program designs. Within the AS team, the framework acts as a useful tool to coordinate and strengthen our practice. Students were not shown the framework, as it did not seem relevant at the outset to do so because it was a "behind the scenes" tool. To assess whether students found the outcomes of the framework of value, we analysed student and staff responses to our embedded teaching and TLAs.

Attitudes towards embedded teaching

To look at the impact of the framework and more broadly our embedded teaching upon students and staff, we gathered data from students, academics and the AS team members. Responses from students, academics and the AS team indicated that embedded teaching was highly valued by all parties. The majority of respondents reported that teaching academic skills within class time was worthwhile, and appreciated timely and accessible advice. We also identified key enablers and challenges for embedded teaching. Enablers included academics who recognise the need for student support, early meetings between academics and the AS team to organise relevant and well-timed resources, students' recognition of the link between the advice and their grades, and materials that were accessible in multiple formats. Challenges consisted of insufficient time to plan the teaching in detail, perceived low student engagement, and insufficient time to build skills across the semester. In 2020, the transition to online teaching was an added challenge, with marked effects on student engagement.

Expectations of embedded teaching

All three stakeholder groups expected the embedding process to provide training that would assist students to develop their academic literacies. Although students often explained that they had no expectations about the teaching, when they did, those expectations aligned with academics and the AS team's expectations. When students had specific expectations, they described them in terms of skills

building and support to succeed in their assessments, as well as more general support for building better study skills and adapting to cultural and academic systems. The AS team and academics elaborated further on their expectations which were in most cases complementary although differed slightly. AS staff related that embedded teaching's purpose is to help students learn specific academic skills hand-in-hand with course content. Many academics also saw it as a way to build students' skills and competencies, with the view that the skills would assist them beyond the specific course. Key to this view was the idea that it integrated skills with course content. For example, academics commented that their understanding of embedding was that it would support students to become effective scholars. As one academic explained, "What the LA proposed was the way to teach students at some point how…not only to learn the content of the course, but also to be able to learn how to be an academic from the very early stage." Therefore, the expectation that the teaching would support the students to develop academic literacies and how to study effectively aligned between all groups.

Another occasional area of alignment for the AS team and academics was the view that the teaching would develop skills that students could apply to their other courses within their degree and beyond. This view was expressed frequently by AS team members, as for example, one team member stated "We use the assignments as the catalyst to give them the academic skills development, and then the idea is they transfer that knowledge into other subjects over the course of their studies." While academics did not express this view as frequently as the AS team, it was evident in responses such as:

> I see it as building from the ground up, a set of different sort of strategies and skills that will help the students in different aspects of their university life from the start. Not necessarily all of them at the start, but perhaps starting with more foundation types of skills and concepts, I guess. And then sort of advancing on those perhaps across the course of their enrolment.

This understanding of embedding as a carefully timed, scaffolded process which has impacts on students beyond the course was reiterated in comments that emphasised students' professional development. Some commented on the practical nature of teaching academic writing genres to new students, for example: "Students … may not have a clear concept what is expected from a professional report…which expects a lot of citations and which backs their argument up, as well as acknowledging the contribution of the source. So I think it's useful not only for my course, but also for later on, their career development." And others reflected on the importance of teaching critical thinking, saying "They just don't go through a rote learning process and come out the other end without being shaped by the values that we try to convey through that course." As such, embedding academic literacies within these courses was important for academics who wanted to support students to become successful scholars.

One interesting point of variation between the AS team and academics' expectations was about the amount of co-teaching involved. The AS team frequently expressed the view that close collaboration and co-teaching with academics was ideal to help the students develop the skills seamlessly, and to support course and assessment design. Academics, on the other hand, had various constraints in this regard. For some, the embedded teaching was a process of providing additional training, separate to the course content. For example, comments included: "This exercise is part of the college wide thing for us…so it's not really related to the course that I teach at all." For others, the expectation was that there would be a close relationship one, where academics and tutors saw the collaboration as influencing their own course design and teaching. As one academic reflected,

> I took the course that I was tutoring this semester. I took it as a first year a billion years ago. And I don't remember a single thing of the content. But I remember what it taught me in terms of how to do and how to learn. So that's what I've prioritized through the semester. And I guess I would call that embedding academic literacies.

Similarly, another commented

> This is an opportunity to try and put my money where my mouth is…with Academic Skills advice and assistance, develop a programme where at least some of these core disciplinary skills are introduced and hopefully affirmed in different ways across the semester.

Broadly speaking, then, expectations about the extent of collaboration ranged widely. While the AS team sees close collaboration as the ideal, in some cases academics did not see it as influencing the course content, whereas for others the collaboration provided a chance to contribute to the course design and their own teaching.

Overall satisfaction and engagement with the embedded teaching

Generally most of the three groups expressed satisfaction with the embedded teaching. Each individual across interviews and focus groups was asked to rate how well their expectations were met on a Likert scale of 1-5, with one the low score and five the high score. Additionally in both semesters, AS staff

rated their perceptions of how well both academics' and students' expectations were met. For self-rankings, AS staff expectations were met at the lowest level (3.6) of the three groups in the first term, followed by academics (3.9), with students at the highest level (4.3). Interestingly, AS staff perceived academics' expectations met to a higher degree (4.5) than academics reported about themselves, but perceived students' expectations met to a lower degree (3.6) than students reported about themselves. In 2020, Academic expectations (4) dropped a bit, and AS perceptions were nearly the same (3.9). For students in 2020, again AS underestimated how well expectations were met (3.3), as students rated their own met expectations much higher (4.1). Group viewpoints on met needs are detailed in Table 1.

Table 1: Perceptions of expectations met

Group viewpoint	AS staff expectations met	Academic expectations met	Student expectations met	Average expectations met
AS staff (2019)	3.6	4.5	3.6	3.9
AS staff (2020)	3.3	4	3.3	3.5
Academics (2019)		3.9		3.9
Academics (2020)		4		4
Students (2019)			4.3	4.3
Students (2020)			4.1	

For AS staff, academics and students, the varied responses (sometimes even from the same person) reflects their mixed experiences from course to course. Where expectations were not met for academics in 2019, it was primarily because delivery of classroom instruction lacked integration of course content and language with the literacies being taught, and because time ran too short to cover all the material. The latter was echoed by some AS staff and students in both terms, as well. 2020 academics were uniformly grateful for the expertise, dedication and flexibility of AS staff as the semester interruptions ensued. All who engaged early with ASk staff to plan said those efforts were invaluable. Several described the in-class sessions (prior to disruptions) and the quality of videos as impressive beyond what they expected. AS staff noted the videos as likely valuable for students, which students themselves also pointed to as instrumental in meeting their needs. Nearly all 2020 academics, however, lamented the disorder caused by COVID-19, and described related challenges that made it difficult to gauge how a more routine semester may have unfolded in terms of embedding. 2020 academics whose expectations were not fully met described a lack of buy-in and / or a lack of consistent follow up and support from colleagues. And while some expressed that their expectations of student work were exceeded overall, others said they were let down by the quality of student work in comparison to the excellence of AS sessions and resources available to them. Several wondered if their students had accessed the resources.

Surveys demonstrated that students' overall satisfaction with the embedded teaching was high, and comments indicated that students felt the teaching provided much desired support. The first student survey, conducted prior to the teaching, found that 91% of students wished to receive advice about academic skills in their course. After the teaching had been delivered, the second survey showed that 88% of respondents reported positive satisfaction with the AS advice (Figure 2). Additionally, 89% reported that they think it is worthwhile to spend class time learning about how to do their assessment tasks (Figure 3).
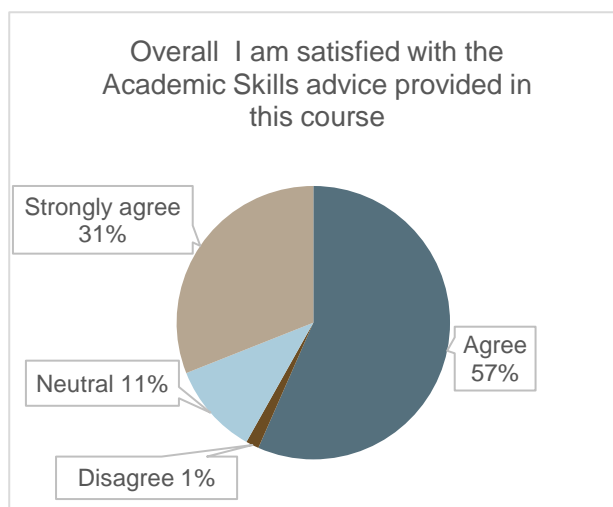

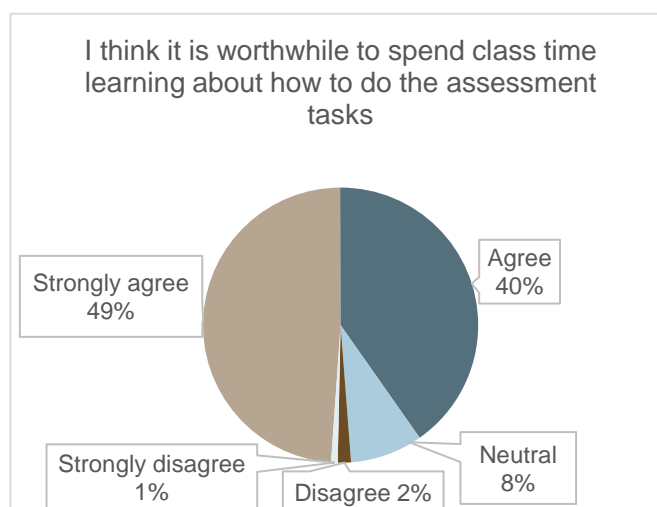Figure 2: Survey 2 overall satisfaction rating. N=129.

Figure 3: Survey 2 value of embedded teaching. N=129.

81% reported that they wish to continue receiving AS advice in their courses in future (Figure 4), and 77% said they would recommend the teaching to others (Figure 5).
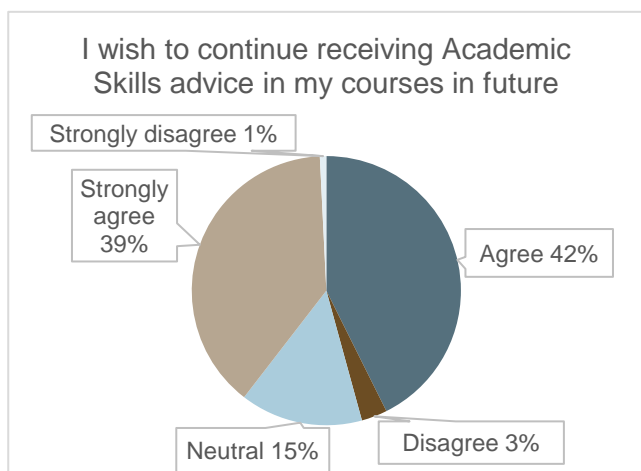

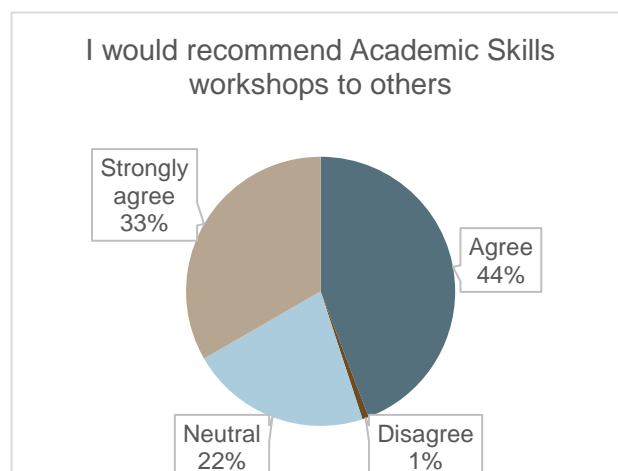Figure 4: Survey 2 desire for future embedded teaching. N=129.

Figure 5: Survey 2 recommendation attitude. N=129.

Survey results and analysis of Wattle site resource usage indicates that student engagement, while fair, was not uniform. According to the second survey, 3% of respondents did not attend any of the Academic Skills events, 2% attended less than a quarter of them, 36% attended up to half, 26% attended up to three quarters, and 33% attended between three quarters to all of the events (of those, 29% attended all events). In all courses, resources from AS events as well as supplementary AS resources were provided on Wattle so that students could use them at their leisure. Analysis of the Wattle site resources' usage (Figure 6), adjusted to reflect the percentage of students enrolled in the courses, shows mixed engagement with the resources.
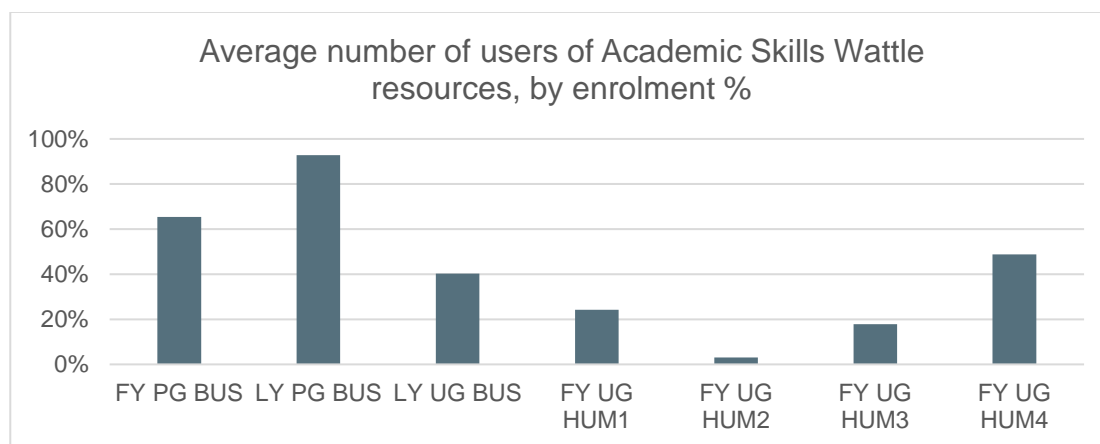

Figure 6: Average number of users of AS Wattle resources, represented as the percent of users enrolled in the course

Qualitative comments from the first and second surveys and the interviews indicated that students both anticipated that the embedded teaching would be helpful and found that it was helpful. This was true, in particular, for new students and students who were expected to complete new types of assessment. The first survey showed that the students expected that the teaching would be helpful for new students and students who were expected to complete new types of assessment. Comments frequently indicated transitions as a key motivator, for example: "I would like to know and experiment with other alternatives to studying and structuring school work"; "since I am international student, the way I learnt in my home country was different. Therefore in order to cope with the changes in the system advices and guides are really necessary"; "As an exchange student I would like to be guided in regards to the standard of writing as well as the referencing etc." In answer to the second survey and within interviews, many students cited that the teaching provided much needed reassurance and confidence during transitions to new learning environments and new assessment types. A range of comments expressed how the teaching enabled them to approach new academic literacies. For example:

I believe that as an international student for whom referencing is totally new, such workshops through Academic Skills helps in understanding not just referencing but also plagiarism. Such workshops help in learning a skill that will stay forever with the student and will help him/her in assignment task in education or work field.

I'm a third year and I'm going to graduate. But before I take this course…I didn't do a lot of essays because I study business. So we do a presentation, but we don't do essays. So maybe I learned before, but I forgot a lot. I found this useful.

It is a good resource for beginners who may be unsure of where and how to begin approaching writing a report for a course and having this venue will help them out immensely.

Trust me they were very, very useful. Like I said I thought I knew how to write. But then I learned through these courses that academic writing is taking writing into a different other level.

These comments show that for students who are new to the university, new to studying in Australia, and / or new to particular assessment pieces (regardless of level of study), the teaching provided clarity around academic expectations and useful guidance on how to approach the tasks.

Positive impacts for staff, helpful for students

Academics noted a range of valuable outcomes from the embedded teaching. As noted above, this project's goal was not to measure student work quality or grades. Indeed, one academic noted the difficulty of identifying the impact of embedded teaching on students, stating "I don't really know how to evaluate that contribution." On the whole, however, comments revealed a strong perception that the teaching assisted students with their assessment. Multiple academics reported that they noticed an improvement in the quality of students' assignments, stated students passed who would have otherwise failed the course, and noted that more students asked for feedback, and showed concern for getting the technical aspects right. Academics noted, for instance, that

The two LAs prepared an essay plan…And some students actually brought that in to talk to me during consultation. They used that to guide their whole essay…I suspect that a lot of them did that and it helped them pass, not fail.

It made for better final essays…it was an enormous improvement from the things they were handing in in week two.

Their research was improving in terms of the selection of sources and getting the point of an article.

If I compare their first and second essay, some of the students show real improvement. So that's a kind of rewarding thing for me…They can forget about the contents later. But I want them to keep this skill with them for their second and third year.

I've gone through and marked the final assignment, for example, and there is reflective learning in there. They can stop and say, 'this is what I've learnt and this is why this is important to business, society and me in the future. This is how it will shape my behaviour.' I think we've achieved something—not with everybody because it depends on your level of a commitment.

These quotes illustrate a range of ways in which the teaching assisted students, from planning their work and seeking formative feedback, to making improvements in their work over time, to displaying skills in essay writing, critical thinking and reflective learning. As the final quote illustrates, it can be expected that not all students take up the advice, since students had varying levels of engagement.

The move to online teaching in S1 2020 was also noted as a factor which meant it was difficult to assess the impact of embedded teaching on students. Some academics described the chaos of the semester as either making it difficult to gauge the teaching's impact on students, or as having a negative impact on embedding because engagement with students was interrupted or diminished. For example, one academic commented that

Because I didn't have that contact with them, I didn't really get the chance to see how they developed over the course of the semester. Their assignments, like I said, were quite standard for what I would expect. Even a little a little substandard in terms of finding sources just because of the inaccessibility of libraries and that kind of lack of understanding of online academic sources. But that was more to do with the circumstances.

On the other hand, others described positive student results as a reflection of literacy embedding despite distance learning. One academic reflected:

In the ideal semester or in a less interrupted semester, I think there would have been so much more opportunity for them to improve on some of these skills. But I mean, having said that, we still had

workshops and talks in our course that were aimed at research and writing and developing arguments, and things like that. I think the students who did engage with those, it did have a really good impact on their work and their final work.

Academics' perceptions of the embedded teaching's impact on students in 2020, then, reveal that the disruption had an effect on student engagement in a range of ways.

Looking at the student data, many reported that following the advice improved their work and they felt this made them better scholars. In the second survey, students commented on their satisfaction and the strategies they had used from the workshops, saying:

> I am looking for the easiest way to complete my essays. I have employed most of your tips and have found an increase in productivity as well as my grades.

> I made better use of the strategies for essay 2, as my essay 1 was rather rushed and half baked. This meant my essay 2 was much improved, especially in the essay structure.

> It is a good way for me to improve my writing skills and be more confident with my assignment, it did bring positive effect on my study.

Similar comments were made during student interviews, where students were asked to reflect in depth on the impact that the embedded teaching had upon their work. These comments indicated that students felt the strategies had strengthened their scholarly practices and improved the quality of their work. Students commented:

> I was very satisfied because, when I applied the academic skills advice to my Essay 2, I did far better and produced a more cogent and cohesive essay. To me, this indicates that academic skills helped improve my writing and made me better reflect on what I put down; I now think about the ~why~ of what I have written as opposed to just whether my statement is factually and/or grammatically correct.

> I think it's the note taking part because…before I saw this form, I just read the whole material and I can recall very little things. But with note taking I can…achieve most of the questions.

> I feel like I can be a lot more mindful of what I want my argument to be. So I feel like it can be a lot more comprehensive. And that really promotes, I think, even further reading than I normally do. So I actually do take time reading entire chapters before I start writing, whereas before I'd just quickly read a few sources.

> It meant that I could not only write the essay, but it meant that I could read other people's essays better and understand what was going on, and look for their arguments and look at their references, see who whose resources they use to kind of go, oh, so that's where they got that idea from. It works both ways.

These quotes reveal that students felt the advice provided assisted them in multiple ways. By providing advice that not only made the work easier to complete, but also strengthened their skills in reading and note-taking, the embedded teaching appears to have had a positive impact on students. Of particular interest is that student comments reflect on the positive impact of workshops focused on the usually overlooked or little emphasised literacies of reading and note-taking strategies. Given that these workshops were in part due to the framework's attention towards such literacies, it seems that the framework has positive impacts in identifying relevant academic literacies.

Valuable use of class time

Typically we find a common worry among academics that providing academic literacies teaching within class time will detract from the teaching of content. Staff were invited to comment on the use of class time, and their perceptions of the impact that embedding academic literacies has on the course teaching. Among academics there was general acknowledgement that the ASk team is uniquely qualified to design and deliver academic skills instruction, as academics are focused on course content and felt the time required for them to replicate what ASk does would be too costly, nor did some feel they had the right language to communicate instruction for skills that are intuitive to them. As one academic put it,

> We want them to have strong foundations to ease their journey at the university. So if we have the presence of Academic Skills there during their first year, that's great because that's what they need…having someone outside the teaching team…and they are really an expert in their field because they've been engaged with many students from different countries, from different backgrounds—it's even better. And I would love to have their presence more even yet.

Others commented that the teaching was well worth the time invested, as it provided students with fundamental guidance. Some found that having multiple workshops within the course helped to scaffold the

students' learning, and some in particular found that the teaching actually enhanced the content teaching. For example, one academic commented

> It wasn't something which took away from class time at all. It's something which…was actually a useful thing to kind of centre any kind of discussion around… sometimes in the past students have said, we talked about all these ideas and we didn't really think directly about how they always relate to the assignments. But this would help them address that more.

Particularly in 2020, academics were nearly unanimous about the positive value of using class time, and where remote sessions replaced class sessions, they were very appreciative of the flexibility and creativity of ASk staff. They felt strongly that the visual interaction of ASk staff was uniquely important to ensuring students would follow up later on with individual sessions, and this was also echoed by interviewed students.

That said, there were varying suggestions to improve the value of using class time, from better focussing the limited time, to expanding the time for AS teaching, to training tutors to provide continuity of skills instruction throughout the course. For example, academics often commented that the time was too short, and that in future they would divide up the time differently. A challenge is also that while our teaching was perceived as being valuable for students with lower and mid-range skillsets, academics noted that students with higher skillsets did not appear to benefit as much from the teaching. Another key take away from this project has been that academics felt greater training for tutors would assist in providing sustained academic literacies guidance throughout the course. These are key recommendations that we will continue to address in future, for instance by offering training for tutors, greater ranges of activities for students with different skillsets, and carefully considering the allocation of time.

Students strongly valued embedded teaching within their courses, as the majority of respondents indicated that they thought that the embedded teaching was a valuable use of class time. 89% of respondents agreed (49% strongly agreed, 40% agreed) with the statement "I think it is worthwhile to spend class time learning about how to do the assessment tasks." Only three students (all international, two first year and one later year students) disagreed. Of these, one (a first year) marked "Agree" when it came to "Overall I am satisfied with the Academic Skills advice provided in this course," while two marked disagree. Those two explained that "Academic skills is not a resource to learn during class time" and "It is better to learn through practise." Of course, not all students responded to the survey, and intriguingly, among interviewees there appeared to be a perception that peers did not value the teaching as much as the respondents themselves. In interviews, one international student commented that some of their friends had said the workshops were not worthwhile. Another comment reiterated the view that "Particularly for local students, they don't need this. They actually think this is a waste of time and they are very confident to their own way to read and write. And they do a very good job, actually, in their unique way. So it's good for me, but it's not good for them. They can't benefit from it like I do." The interviews had a stronger representation of international students (78% of the participants were international) than domestic, so our in depth responses lack a strong representation from domestic students. Nevertheless, 98% of domestic respondents either strongly agreed or agreed that it was worthwhile (in total 11% of the courses' domestic students responded to the second survey). While response bias may cause an underrepresentation of neutral and negative responses, it is notable that the overwhelming majority of both domestic and international respondents reported that they found the advice worthwhile.

Where students had complaints, the timing of the workshops was a recurring theme. Getting the timing right for embedded workshops can be tricky due to multiple constraints. Students sometimes found that too much was packed into one workshop. For example:

> Workshop one should just be more like an introductory lesson, but also things as simple as managing a time in flux…learning what sections to maybe just quickly skim read other sections to focus on. Then later on, maybe about two weeks before the first main research essay, corresponded it [the workshop] to what we're doing.

> Time sometimes has been an issue where we've sort of been talking about other things-- gotten really caught up in a good discussion and then we run out of time to really get that Academic Skills component; because in certain lessons it's sort of been a tack-on thing at the end…and not integrated as well as it has been in other weeks.

This feeling of having too much content crammed into the time available was reflected in the survey responses. Figure 7 shows that 29% of respondents said there was not enough time in class to understand the advice.

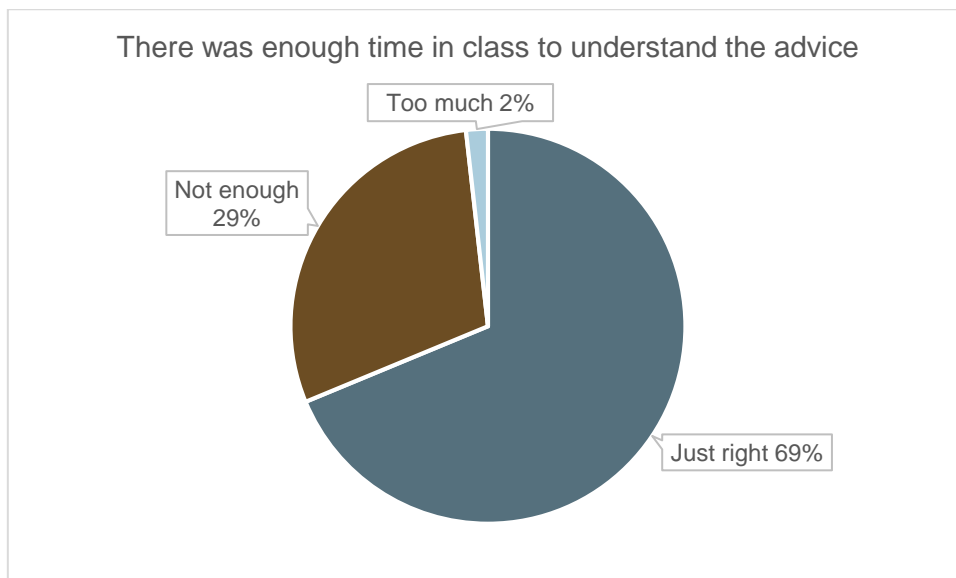**There was enough time in class to understand the advice**

Figure 7: Survey 2 on amount of time. N=112.

When asked about the ideal amount of class time to devote to embedded teaching, the majority of students nominated between 15 minutes to a full hour (Figure 8). This finding will enable us to better plan embedded teaching in future.
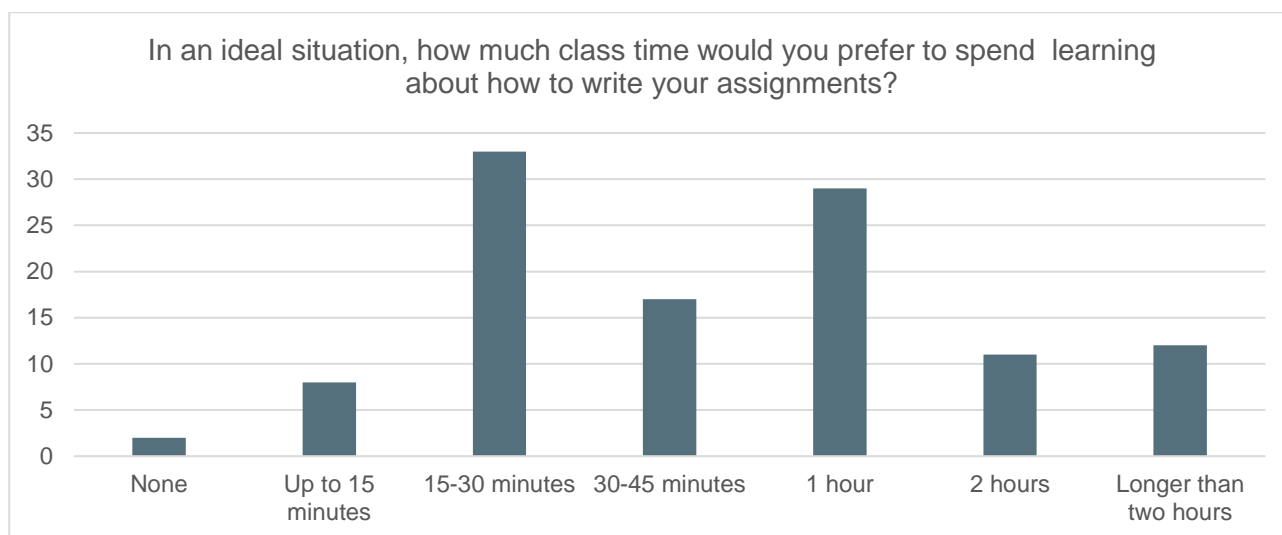

Figure 8: Survey 2 on how much time would be ideal to learn about assessments in class

Further, some comments expressing disappointment that there was not more support provided closer to the assessments during semester. Constraints of embedding sometimes occur around scheduling. Ideally we aim to deliver the workshops a week or two before the relevant assessment task is due. However, if other course presentations are scheduled the week or two before an assessment task is due, then we arrange to come in earlier. This can result in the attempt to cover material at a time that is too early for the students to meaningfully engage with. It can also mean that, if returning later in the semester, we might try to cover material that students feel is no longer relevant. As one student explained:

> I think it could be caused by the wrong timing…For the first essay we don't need to do research questions but they give presentations on research questions and for the second essay like we already kind of had understanding of the structures.

This feedback on the timing is not surprising to us, as we ourselves recognise these limitations. Nevertheless it is a useful reminder that when embedding, the amount and timing of material needs to be considered carefully.

The important role of collaboration, co-teaching and training tutors to ensure the use of discipline-based teaching

Providing discipline specific advice is the core purpose of embedding academic literacies, to show how their particular course discipline approaches academic literacies. Given that every discipline is unique,

when embedding, AS aims to closely tailor the teaching using examples from the relevant discipline and using the disciplinary vocabulary. Collaboration with academics is therefore a key element to embedded teaching, to ensure that the resources and teaching provide students realistic and relevant examples. Many academics noted how pleased they were with this collaboration and that it in fact exceeded their expectations.

> When I heard that Academic Skills can help us with it by coming to the lecture and giving some general advice about academic integrity and time management, I didn't expect that the LA was going to look into our course curriculum and also the due dates of the assignment, and actually integrate them into the essay writing skills…this was more than I expected. It was very good.

Within the AS team, collaboration with academics who were enthusiastic about embedding was also regarded as core to successful AS teaching. The team frequently commented on the value of engaging in discussions academic staff on the embedded resources. Team members remarked that close collaborations enabled them to create resources that were closely tailored to the students' needs as well as the course content.

However, one of the challenges in collaborating is in identifying early on which AS team members will deliver the teaching, with enough time to meet with the academics and develop a familiarity with the course content. Due to the fast paced, dynamic nature of our work, the AS team frequently needs to be able to swap teaching around to other team members so as to allocate teaching load evenly across the team. In these cases, however, it means that staff may miss out on attending early discussions with academics, and therefore miss out the opportunity to develop a familiarity with the course content. As one AS team member noted,

> You're talking about all the different disciplines that there are at this university and being able to adapt our curriculum and understand how it will work within that curriculum. And that's really quite time consuming. And it's complex.

This challenge led to some academics expressing disappointment that the discipline language was not used more often, and noted that there were differences in how different AS members used the discipline language. Generally this occurred because some AS members had the benefit of collaborating more closely with the academic. These AS members had more time to gain familiarity with the course than others, and were therefore able to use the discipline language more confidently than those less familiar with the course. As one academic suggested, AS staff need to

> Convey the skill within the context of the course. So it might be just getting informed on a dimension of the topic or the assignment that's relevant here. Grab the language to a certain level…and then be able to use the language of that little bit of slice of the course to convey the message. That's about embedding. It's not just about academic skills. It's a two-way street.

This development of a two-way collaboration is crucial to embedding and provides a key recommendation that we aim to address in future.

Despite the complexity of this work and the time that it takes to develop familiarity with each discipline, this ability to use and model the disciplinary language is a key element which the AS team prides itself on being able to do. We believe that close collaboration facilitates the use of discipline specific language, and that our unique position as a central service enables us to draw on our expertise across the whole variety of the University's disciplines to create meaningful and embedded resources. These findings will therefore assist us to continue making improvements to embedded teaching in future.

Students greatly appreciated the discipline specific examples and guidance, and felt that it made the advice more relevant and understandable. As one student put it,

> The most useful part to use is when the LA combined the course content with the referencing and writing. And it's more clear If you can link the content you are going to write with that academic skills you're going to teach. So that's quite useful for me…after that academic skills session I think I've got a clear picture of what I'm going to do next.

A few students commented that such discipline specific advice would help in their other courses, given that their different disciplines use different writing styles.

Our efforts to collaborate with academics and tutors to provide academic literacies advice hand in hand with content was particularly valued by students. Multiple students commented on how useful it was to hear their lecturers and tutors explain the advice in relation to the assignments and the discipline, for example:

[My tutor] was doing a really good job of incorporating these ideas into her tutorials, like the thesis statements video. She had a lot of the screenshots from that in a tutorial where we did make up just a thesis statement as practice for a particular topic that we were doing at one point.

My tutor, she will refer us to these a lot. And she'll make reference to them within tutorials. And so I feel like for me personally, that was the reason why I actually went and looked at a lot of these things, because she referenced them

The link that this last quote observes between tutors recommending resources and students using those resources was reflected in the Wattle sites' usage statistics (Figure 7, above). When tutors and academics heavily promoted our materials, for example in announcements on the Wattle site and mention during class time, the Wattle site materials had a much higher rate of usage. This provided key evidence that our efforts in collaborating to train and support tutors to deliver academic literacies teaching is extremely worthwhile, and a goal that we will continue pursuing in future.

Desire for more individualised feedback

Another recurring theme was students' desire for more individualised feedback. Comments ranged from expressing a desire to receive individual comments on work within a workshop, to receiving more detailed discipline-specific advice. Some comments, for instance, expressed a wish for more hands on practice and individualised feedback, such as:

I don't recall there being a specific section on: this was your question, which it was a hard question. I mean I feel like for it to be extra useful maybe [we could have] specifically deconstructed our essay question so that we don't have to think about it so much in the abstract.

Whilst the actual activity was useful, we didn't really get to it until the very end…but it was helpful considering that I was not at all familiar with how you reference or footnote in any way, shape or form at a university level. So it definitely did help.

In the week six tutorial when we were reflecting on essay one, I kind of found myself sitting there being like, ok they're talking about these things and I don't really know if they apply to my essay…these kind of abstract concepts. Specifically where in my essay should I apply this advice?

This is a key reminder for us to ensure that our workshops use as many opportunities as possible to give students individual feedback.

Desire for embedded teaching in future

Further evidence that the embedded teaching is worthwhile is that academics exhibited a strong desire to embed academic literacies within their courses in future. On a Likert scale, academics from both semesters rated a near universal score of five out of five to request embedding again, with one who rated it a 4 and another 4.6. Many academics commented that they already had plans in place to embed in future, and noted that they believe the teaching is core to the students' academic and professional development. As one academic put it, "I put five is because I believe it's definitely going to help the students in the long term. So not just seen in the time that they are in uni, but also when they go to work, it's useful." Another noted that "It's already on my plan for next year. If I could even ask them to come to all my courses, that would be great. And probably we can always tailor it…because I'll be teaching MA course, too, so we can always tailor it to suit their needs." This strong positive feedback indicates that academics find embedded teaching very worthwhile, and provides evidence for the AS team to continue pursuing embedded teaching within foundational courses and courses in which students face new transitional and academic developments.

Students also expressed a strong desire for embedded academic literacies within their other courses. 81% of the second survey's respondents agreed that they wished to continue receiving Academic Skills advice in other courses. Comments from the interviews and second survey expressed satisfaction with the teaching, and even an expectation for continuation of embedded academic literacies teaching in other courses. Students remarked:

My experience in this course and others in my degree has been that when lecturers provide really clear advice about what they want and expect, it is far easier to then focus the scope of my research, structure my writing and use my time efficiently to meet those expectations and achieve high results. Following Academic Skills advice does lead to better outcomes.

I think I would expect even more workshops in class time to learn this. Because that really helped a lot.

I'd like them to come to the class. I think that's really helpful. Like. For me if the if the teacher uploads these materials onto Wattle, I may go and see. Have a look. But many of my friends, they

will not do that. So if [someone] comes to the class and tells people face to face, I think everyone can get a better outcome.

These responses therefore indicate that for new students and new assessment pieces, students both want and appreciate the advice provided.

Overall, then, staff and students had very positive perceptions about the embedded teaching and felt it was a worthwhile use of class time and that in most cases it was tailored to their needs. This feedback has provided strong support for the framework and embedded academic literacies teaching, and has provided a wide range of recommendations which we outline in the Lessons learnt section.

Deliverables

The deliverables have been examined in depth above, so this section summarises the main ones.

Academic Literacies Framework

Broadly, we designed and implemented the framework, and attained feedback from staff and students about our embedded teaching which will contribute to improving our resources, promotional work, and future publications. Based on feedback about the framework, we will henceforth be able to use in our teaching and share widely around ANU.

Embedded teaching and feedback gathered from seven courses

We employed a Research Officer to gather feedback from the seven courses in which we embedded academic literacies teaching for this project. We collaborated with academics and tutors to design and deliver embedded teaching in seven courses, representing a mixture of HASS subjects. Feedback was gathered from two student surveys, which had responses rates of 48% and 13% respectively. 18 students participated in a mixture of focus groups and interviews, 12 academics were interviewed, and all team members of the AS team participated in interviews.

New resources for embedded teaching

Throughout this project we developed new TLAs for our embedded teaching in each course. These included discipline specific advice, in class activities, explanatory resources such as videos and handouts, and lesson plans for tutors.

Feedback on embedded teaching and TLAs

Feedback from staff and students was particularly valuable in showing us what stakeholders value from embedded teaching. We can use this feedback to set clear expectations, improve our teaching, and improve our resources in the future. For examples, students appreciated being able to access a range of resources within Wattle, such as slides, videos, handouts, and quizzes. And staff and students placed great importance on using discipline specific language and content-based examples. We aim to continue developing such resources in future.

2. Lessons learnt

In addition to the outcomes discussed earlier, we can draw a series of lessons learnt and recommendations.

The Academic Literacies Framework is useful and most valued by staff new to AS services

Importantly, the framework was valuable because it helped to create a shared language between AS and academics, as it helped to display our curriculum and translate what we mean by "academic literacies" into concrete examples. We found that the framework assisted academics and tutors to identify key literacies which could support their students. For example, many of the academics decided to include advice about time management and foundational input literacies such as reading and note-taking. In particular, staff who were new to our services gained the most from discussing the framework. Further, the AS team found the framework valuable as a team resource to coherently articulate our curriculum.

Embedded teaching is highly valued by staff and students

Staff and students highly valued embedded teaching. Students saw it as a valuable use of class time and staff found that it assisted students and enriched their own teaching. Embedded teaching is core to our service, and this feedback provides evidence for why it is regarded as best practice amongst academic language and learning practitioners.

It is valuable to train academics and tutors to deliver academic literacies advice

We discovered that for many staff involved in the project, collaboration was highly valued and provided a way to embed literacies in a sustained way within courses. We learned that tutors greatly appreciate training in teaching academic literacies, and that they would appreciate sustained support during semester. We aim to strengthen our support for tutors in future.

Importance of showing resources in addition to the framework when planning embedded teaching

When planning the embedded teaching, we discovered that academics responded positively when the framework was accompanied by examples of our TLAs. These concrete examples of how academic literacies could be embedded using discipline specific language and content based activities assisted academics to understand what we meant by "embedding". When we discussed these resources academics quickly saw how they could incorporate their course content within the academic literacies teaching.

Importance of close collaboration and using discipline specific language

Where expectations were not met for academics, it was primarily because delivery of classroom instruction lacked integration of course content and language with the literacies being taught, and because time ran too short to cover all the material. The latter was echoed by some AS staff and students as well. These are key issues for us to be aware of in future, as we aim to tailor our resources as closely as possible to discipline language and deliver materials that are timely for student learning.

Importance of meeting early to plan teaching

Generally, when AS and academics met early on to plan teaching academic literacies within a course, it allowed us to embed academic literacies in a sustained rather than ad hoc way within the course. Some academics also noted that the idea of embedding academic literacies within their course enabled them to rethink their course design and the course's place within degree programs. Therefore, meeting early on and at stages where academics are considering course and program design is likely to have the best outcomes for a sustained and holistic approach to embedding academic literacies.

Sustained support and contact with academics is needed throughout semester

One identified area for improvement was that academics and tutors would appreciate continued collaboration throughout the semester. In future, we will aim to proactively reach out regularly to academics and tutors to check in and offer support for any questions during semester.

Ongoing need to promote the idea that academic literacies can be embedded within course content

There is a widely held perception that academic literacies are generic and should be taught outside of course content. While academic literacies are common across different disciplines, our project sought to gather evidence about the value of teaching academic literacies alongside the course content. This is regarded as best practice within the field of academic and learning, and during the project we found that most students and staff agreed with this view. We aim to continue promoting the practice of embedding academic literacies within courses, and supply academics and tutors with training and resources to assist them to do this. We believe this will contribute to a seamless student experience of learning how to become effective scholars in their disciplines.

3. Impact and dissemination

As evident with strong satisfaction ratings, students found this project helped them by providing embedded guidance about how to study effectively. In particular, students found discipline specific advice valuable and appreciated the collaboration between academics and the AS team. We developed numerous new resources during the course of the project, which students reported that they found useful. Generally, this project has provided students with tools and strategies to support them to become effective scholars in their field.

For academics and tutors, this project has had benefits in providing resources that they can use in future, and has demonstrated various ways in which academic literacies can be taught. The framework has enabled staff to identify relevant academic literacies that benefit their students.

For the AS team, this project has provided rich feedback that we will use in future to continue promoting embedded teaching. We have identified key recommendations to improve our services, in particular the benefits of providing ongoing support for academics and tutors, the importance of strengthening our capacity in using discipline specific language, the need to consider timing carefully, and the usefulness of providing students and staff with a range of TLAs alongside the framework.

This project's evidence indicates that the impact of embedded teaching at ANU is a positive one, with staff and students finding improvements in student learning. We aim to disseminate this research widely at ANU, in staff forums such as the Centre for Learning and Teaching's communications and University committees.

We also intend to disseminate this research within the field of academic language and learning and higher education. We aim to present this research in meetings and conferences, for example for our Association for Academic Language and Learning, at the STARS conference, and in relevant journals such as *Higher Education Research and Development*, *Journal of Academic Language and Learning*, *Journal of University Teaching & Learning Practice*.

4. Acknowledgements

We sincerely thank all staff and students who participated in this project. Your generosity, thoughtful responses, and honest feedback provided us with valuable insights which will continue to inform teaching and learning at ANU. We warmly wish each and every one of you the best for your future endeavours.

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