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|  | Applying UDL in an ‘introduction to university’ unit |
|  | Evaluation report |
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## Executive summary

This report presents findings of an extensive evaluation of the redesign of the unit AIX160 ‘Introduction to university study’ to incorporate Universal Design for Learning (UDL) principles. The evaluation focused on the extent and ways in which the redesign may have enhanced student engagement and learning, in particular for target equity groups; and on what improvements could be made to the unit. The evaluation took place during and after the first trimester in which the new unit was delivered. It employed analysis of quantitative student success and eVALUate data as well as focus groups, interviews, student surveys and CloudDeakin data. Overall, the results indicate that the redesign was successful in improving student performance compared to 2014 results, and in particular in helping students develop key transition-to-university skills. Success rates for students in all target equity groups improved markedly compared to the 2014 results, though mean scores were lower for some groups than previously. The detailed analysis of qualitative data has revealed several areas for improvement in the short, medium and long term. These are in demystifying academic culture, forms and language; further developing self-management skills and motivation; rationalising resources and ensuring their accessibility; and addressing issues around choice and direction in the assessments. The major interventions recommended include changes to the topic sequence, CloudDeakin study guide, assessment instructions and supporting materials, and class- and seminar-based activities across campuses. The difficulty of using UDL as a framework to guide the redevelopment and to structure the evaluation was noted.

## Recommendations

### Immediate interventions (Trimester 3)

* *Unit chair and teaching team to reorder weekly topics so that high priority topics, such as referencing, are taught early in trimester.*
* *Unit chair and teaching team to rationalise and streamline CloudDeakin study guide.*
* *Unit chair and teaching team to review and simplify existing CloudDeakin activities to encourage stronger engagement from Cloud-based students. A weekly quiz to form the basis of a weekly discussion, and/or supplement other activities. The Blackboard Collaborate seminars to be used as a springboard for further engagement on the discussion board.*
* *Unit chair and teaching team to provide further resources and activities on reading and analysing academic writing.*
* *Unit chair and teaching staff to simplify assessment instructions.*
* *In developing and adding video resources, unit chair and teaching team to consider the length of videos included, ensure transcripts are available and ensure that students are aware of their availability.*

### Medium-term interventions (Trimester 1 2016)

* *Unit chair to review and rationalise class- and seminar-based activities, and facilitate sharing among teachers of successful seminar activities and methods to encourage participation.*
* *Unit chair and teaching team to provide a wider range of annotated example assignments; to scaffold assessment more explicitly during weekly lectures and seminars; and to consider limiting the number of choices in the assignment task itself, with an option provided for students to contact the Unit Chair directly and propose a topic aligned to their area of interest.*
* *Unit chair and teaching staff to consider redeveloping weekly self-assessment exercises into a weekly quiz, using the quiz tool.*
* *Unit chair and teaching team to provide clear information to students that connects the first two assessments in particular more clearly to intended learning outcomes in the unit.*

### Longer term interventions (Trimester 3 2016 – Trimester 1 2017)

* *Unit chair, teaching and development team to actively focus on developing activities, resources and teaching practices that demystify academic culture, form and language.*

##

## Introduction

The project to evaluate the design and delivery of the unit AIX160 in Trimester 1, 2015 had dual aims. One was to provide evidence to support improvements for future iterations of the unit, and the second was to provide evidence of the effectiveness of the intervention, for wider dissemination to the Deakin and broader research and teaching community.

In late 2014 the unit was redesigned and redeveloped, with Federal Higher Education Participation Partnerships (HEPP) funding, to incorporate Universal Design for Learning (UDL) principles, including embedded digital literacies and an internationalised curriculum. A cross-divisional Deakin team collaborated to redesign and redevelop the unit from its previous identity as ASC160, which had become outdated and was seen as inadequately addressing the needs of diverse groups of students. The development team included a project manager, learning designer, UDL consultant, original and new unit chairs, Library staff, Division of Student Life staff, and an Institute of Koori Education representative. The unit teaching team implemented and delivered the redeveloped inclusive curriculum and newly branded unit in Trimester 1 2015, across three campuses and online.

This evaluation project examined the teaching and learning experiences that took place in the unit during its first trimester of delivery. The evaluation team included several of those who contributed to the design and development of the unit. The team consisted of Prof. Matthew Clarke (project leader and previous unit chair); Dr Juliana Ryan, Equity and Diversity Unit Communications Manager; Robyn Everist (project manager); Dr Mary Dracup (learning designer); Dr Petra Brown (new unit chair); Christine Oughtred, Library Manager of Digital Literacy Programs; Corinna Ridley, Manager of Student Academic and Peer Support Services; and Dr Kelly George, Strategic Intelligence and Planning Unit Reporting Officer. The evaluation project had the approval of the University Ethics Committee (project number HAE-15-038).

UDL is:

a set of principles for [curriculum](http://www.udlcenter.org/aboutudl/udlcurriculum) development that give all individuals equal opportunities to learn. [It] provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone—not a single, one-size-fits-all solution but rather flexible approaches that can be customized and adjusted for individual needs (CAST 2014).

The principles are based on scientific findings on how humans learn, and involve activating recognition, strategic and affective neural networks. Guidelines for applying these principles in learning experiences are divided into three broad areas:

* Provide multiple means of representation (to develop resourceful, knowledgeable learners)
* Provide multiple means of action and expression (to develop strategic, goal-directed learners)
* Provide multiple means of engagement (to develop purposeful, motivated learners).

A detailed explanation of UDL is available at: <http://www.udlcenter.org/>. See also Appendix A.

The research question guiding the evaluation was:

In what ways and to what extent have UDL principles applied in AIX160 enhanced student engagement and learning, in particular for target equity groups, and in what ways could engagement and learning be further enhanced?

This involved identifying:

* the **levels of use** of options and strategies provided in the unit to increase variety of forms of representation and expression, and to promote engagement
* the extent to which and ways in which these options and strategies might have **enhanced student engagement and learning**
* ways in which engagement and learning **might be further enhanced** in this unit

Data gathered for this evaluation project will also be used in a longer-term evaluation of the success of this intervention over forthcoming trimesters.

## Evaluation methods

The number and nature of factors that affect student engagement, learning and longer term success make it extremely difficult to establish causal relationships between initiatives such as UDL and effects, and to quantify the size of any such effects (Naylor, Baik & James 2013, p. 36). However, it is possible to gather evidence of engagement and learning processes by proxy methods such as observation of computer usage logs and analysis of students’ achievement of learning outcomes in their assessments (Phillips, McNaught & Kennedy 2012, p. 132). Relative retention at university and pass rates of students studying this unit may also be seen as evidence of their success in achieving the unit aims, given the nature of the aims in this unit. Valuable insights into students’ and teachers’ perceptions of students’ levels of engagement and processes of learning can also be gained through qualitative research methods including asking them direct questions in interviews and surveys (Merriam 2009). Therefore, mixed methods of research (Creswell 2013) were used in this research project. A grounded theory methodology (Strauss & Corbin 1998) was used in the data collation and analysis, to provide answers to the ‘what, how, why’ questions surrounding what worked and what did not, in what ways could strategies be improved.

Most quantitative data was gathered and analysed by evaluation team member and reporting officer from Deakin’s Strategic Intelligence and Planning Unit, Dr Kelly George. This data included analysis of student enrolment, eVALUate and equity data in accordance with University Statutes, Regulations and Policies including Statute 06.1, Regulation 06.1(4) - Information and Communications Technology. Quantitative data also included non-identifiable CloudDeakin user log data.

Qualitative data included analysis of students’ responses to a reflective exam question, students’ responses to surveys, three focus groups, six teacher/support staff interviews, and an expert critique of the unit from a TESOL teacher. Focus groups and interviews were audio recorded and transcribed, and the transcript was checked by the focus group/interview participants. Qualitative data sources and participant groupings are outlined in Table 1.

Data was collated, categorised and coded using NVivo. Nodes largely reflected the categories of the UDL framework, in order to use a systematic approach to answering the research questions. Research team members worked in pairs to cross-check each other’s interpretations of the data in various nodes and prepare summaries of each node. These summaries formed the basis of the findings under the headings below.

**Table 1: Methods of qualitative data collection and participant numbers**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Student surveys** | **Focus group participants** | **Reflective exam question responses** | **Teacher interviews** | **Expert review (TESOL teacher)** |
| Burwood campus | 41/142 | 3 | 18 | 1/1 |  |
| Waurn Ponds campus | 25/78 | 5 | 16 | 1/1 |
| Warrnambool campus | 5/7 | 4 | 5 | 1/1 |
| Cloud students | 1/33 |  | 1 | (Waurn Ponds teacher was also the sole Cloud student teacher) |
| Other |  |  |  | 3 library or language-learning staff-teachers/3 |
| **Totals** | **72/264 = 27%** | **12/264** | **40/264** | **6/6** | **1** |

## Findings

***Indications of success of the intervention in enhancing learning and engagement: combined quantitative and qualitative data (overall impressions, motivation and engagement, impact on equity groups)***

### Enhancement of student learning

Overall, student success rates increased markedly since the unit was redeveloped, and both students and teachers were very positive about the learning and skill development enabled through participation in the unit.

Students identified four key benefits of participating in the unit (in order of prevalence):

1. Learning practical skills (assessment writing, research, referencing, group work)
2. Learning about learning, including time management and motivation
3. Supported transition into university culture building confidence
4. Learning skills and attitudes with applications to personal and working life (teamwork, metacognition, time management, research skills, teamwork).

Some students indicated that AIX 160 should be recommended for all students starting at university. However, a very small number of students reported poor teaching in their overall impressions of the unit. Teachers noted that poor attendance was an issue.

To gauge the success of the intervention in enhancing learning and engagement, a variety of quantitative measures were compared for ASC160 trimester 1 unit cohorts in 2014 (as the unit was labelled before the intervention) and 2015 (post-intervention). Further comparisons with first year unit cohorts provided means to determine the status of AIX160 learning and engagement among all other first year units within the faculty and Deakin overall.

In 2014, 263 students completed the unit and 78.8% did so successfully. Following the intervention, the proportion of students who successfully passed the unit increased to 86.3% (of 268 students; Table 2). The unit success rate for various student cohorts is presented in Table 3 below and Appendix 1.

**Table 2: First year unit attempts in trimester 1, 2014 and 2015**

|  |  |  |
| --- | --- | --- |
|  | **2015 trimester 1** | **2014 trimester 1** |
|  | **AIX160** | **ASC160** | **Faculty** | **Deakin** |
| Overall unit attempts | 278 | 273 | 13,601 | 42,213 |
| Unit attempts discontinued | 10 | 10 | 476 | 1,270 |
| **Unit attempts completed** | **268[[1]](#footnote-1)** | **263** | **13,125** | **40,943** |
| Success rate | 86.3% | 78.8% | 78.8% | 81.7% |

**Table 3: Unit success rates for select cohorts in trimester 1, 2014 and 2015. Values in brackets represent the success rate change from 2014 to 2015.**

|  |  |  |
| --- | --- | --- |
|  | **2015 trimester 1** | **2014 trimester 1** |
|  | **AIX160** | **ASC160** | **Faculty** | **Deakin** |
| **All students** | **86.3% (↑ 7.5)** | **78.8%** | **78.8%** | **81.7%** |
| Male students | 80.5% (↑ 9.6) | 70.9% | 74.9% | 78.1% |
| Students aged 20 to 29 | 81.7% (↑ 14.8) | 66.9% | 74.5% | 77.5% |
| Low SES students | 85.0% (↑ 13.2) | 71.8% | 74.6% | 78.5% |
| NESB students | 89.2% (↑ 9.9) | 79.3% | 82.6% | 78.4% |
| Students with disability | 83.3% (↑ 6.4) | 76.9% | 73.8% | 77.6% |
| Non recent school leavers | 74.1% (↓ 1.2) | 75.3% | 74.7% | 78.1% |

A substantial increase in success rate was observed in 2015 compared with 2014. Low-SES students and students aged between 20 and 29 years of age showed the most noticeable improvement following the intervention (Table 3).

**Table 4: Mean marks for first year unit cohorts in trimester 1, 2014 and 2015**

(Values in brackets represent the difference from the all-students mean mark)

|  |  |  |
| --- | --- | --- |
|  | **2015 trimester 1** | **2014 trimester 1** |
|  | **AIX160** | **ASC160** | **Faculty** | **Deakin** |
| **All students** | **62.7** | **61.0** | **58.4** | **60.4** |
| Low SES students | 60.6 (-2.1) | 54.7 (-6.3) | 55.5 (-2.9) | 58.3 (-2.1) |
| Regional/remote students | 63.9 (+1.2) | 63.5 (+2.5) | 58.6 (+0.2) | 61.6 (+1.2) |
| NESB students | 60.6 (-2.1) | 64.8 (+3.8) | 60.2 (+1.8) | 59.1 (-1.3) |
| Students with disability | 61.5 (-1.2) | 58.5 (-2.5) | 55.8 (-2.6) | 58.1 (-2.3) |
| ATSI students | 75.0\* |  | 29.8 (-28.6) | 32.2 (-28.2) |
| Women in non-trad. Areas | 71.9 (+9.2) | 68.7 (+7.7) | 59.2 (+0.8) | 62.5 (+2.1) |

 \*Mean mark is based on one student

The average mark for the 2014 unit cohort was 61.0. This value rose to 62.7 following the intervention (Table 4).

### Impact of intervention by equity group

Average marks for regional/remote students and women in non-traditional areas suggest that students in these groups perform better than other students regardless of the intervention. Average marks for low-SES students and students with disability remained below the all-student average; however, the extent of the difference is reduced in both cases from 2014 to 2015 (Table 4). The only student cohort whose mean mark declined in 2015 were students from non-English speaking backgrounds.

The majority of qualitative data on meeting the needs of equity groups was provided by teachers. Teachers reported that students’ varied needs and attitudes presented challenges, sometimes because those needs and attitudes were not complementary. Examples included wide variations in students’ proficiencies in developing digital and academic literacies within single cohorts, and the need to ensure rich content (such as animations in PowerPoints) was accessible.

Teachers agreed that the unit culture supported diverse student learning styles and abilities, with the exception of students with English as an additional language (‘EAL students’). Teachers suggested that the unit may not be meeting the learning needs of some EAL students whose skill development in English reading and writing remained limited, and who showed little understanding of Australian academic culture and thinking even late into their participation in the unit. This was despite the availability of embedded resources and support services such as language and learning advice and tutors.

### Student motivation and engagement

The official instrument used to evaluate teaching and learning within units at Deakin changed between Trimester 1 2014 and Trimester 1 2015. Consequently, it is not possible to directly compare centrally collected student feedback pre- and post-intervention before and after the intervention. However, high percentages of students rated strong levels of satisfaction on most questions in 2015.

The eVALUate instrument measures the level of student agreement with seven items relating to the unit design, three items relating to motivation and engagement in learning and one item relating to overall satisfaction with the unit. At the end of Trimester 1 2015, 38% of the students completing AIX160 evaluated the unit. Of these, 81% of students were satisfied with the unit overall (eVALUate data, Appendix 2).

Students agreed that the learning outcomes were clearly defined (91%) and that the assessment tasks clearly evaluated the outcomes (89%). Eighty-nine percent of students agreed that the learning resources were useful and that the workload was appropriate to the achievement of the learning outcomes (eVALUate data, Appendix 2). However, the eVALUate scores on the question ‘The learning experiences in this unit help me to achieve the learning outcomes’ were a little *less positive* for AIX160 (80% agreement) than for either the school (85%), faculty (87%) or university (86%) cohorts. This is also reflected in mixed qualitative feedback on student motivation and engagement during seminar activities.

The level of agreement for items relating to motivation and engagement in learning were also slightly lower (71-78% agreement; eVALUate data, Appendix 2). Qualitative feedback from students suggested that many students were motivated by being able to see the relevance and usefulness of unit content. For example:

I think it’s simply being aware that doing [sic] will help you further down the track and will teach you skills you need in university and teach you how to be more comfortable with learning more individually … I think that’s the main motivation from this unit (student focus group).

However, already knowing unit content was also cited by some students as a reason for *low* motivation or engagement. The majority of those student participants who were less positive about the relevance of the unit were straight from school, and indicated they already knew most of the content—though some recognised that other students may not have had this pre-existing knowledge. In addition, several students complained in surveys and focus groups that some topics (in particular, referencing and essay writing) would have been more useful if they had been presented earlier in the trimester, to help them complete their assessments in other units.

Several teachers identified providing choice as a motivational factor; for example, the option to select an essay topic of interest was popular.

### Indications of success of the intervention in enhancing learning and engagement: quantitative and qualitative data evaluated through UDL guidelines

For full details of the evaluation, see Appendix B.

#### UDL strategy area 1 - multiple means of representation to develop resourceful, knowledgeable learners

**Provide options for perception**

**CloudDeakin resources**

Student feedback on quality and variety of resources was overwhelmingly positive. However, there was mixed feedback on the amount and organization of information available. While appreciative of the many resources available to support learning, responses were typically that it was almost ‘too much’ and at times difficult to navigate. This was supported by independent analysis by a TESOL expert.

Several students stated that they found the learning resources uninteresting, lacking in enthusiasm, or repetitive (possibly due to the provision of some information in multiple modes, to appeal to students with different preferred learning styles), while a small number indicated that they did not really use the CloudDeakin learning resources at all (which is common among on-campus students generally).

*Comprehensive almost to the point of overkill. So much information in a relatively short time frame, it was sometimes hard to absorb all I wanted to (survey).*

**Audio-visual resources**

Students found these helpful, but several noted that some of the videos were too long, which was considered problematic for students working from home with limited download data allowances. In qualitative data students expressed a preference for PowerPoint over video, as these files are easier to download and take up less data. Quantitative data shows between one-third and half of students accessed the weekly PowerPoint lecture slides. Recorded lectures were less widely accessed.

**Key handouts**

 Several students stated that they appreciated key handouts on time management, particularly noting the trimester planner and weekly planners. Comments on these resources were invariably positive with many stating they were now using these tools, had them pinned on their walls and were referring to them regularly.

*The first seminar we had we were provided with two handouts, one was a trimester planner and the other was a weekly planner. Upon being given these handouts I went home and completed them both and placed them both on my wall and on my fridge. The trimester handout was a great tool to put into reality when assignments were due and when study breaks and deadlines were (reflective exam response).*

**Provide options for language, mathematical expression and symbols**

**Glossary**

CloudDeakin data shows that the glossary was accessed 41 times during the trimester. The glossary was not mentioned in qualitative data.

**Terms explained in context**

Library and Language and Learning classes were highly valued. Students connected value to the relevance of content and its application to study and assessment, and cited skill building as an outcome.

**Provide options for comprehension**

**Supported, hands-on practice using academic processes**

Processes scaffolded in this way included finding, evaluating/using academic texts, referencing and essay/report writing. Student feedback on this support was overwhelmingly positive. The lectures given by Library and Language and Learning were identified as engaging and helpful, and highly valued by students. Students connected value to the relevance of content and its application to study and assessment, and cited skill building as an outcome.

*“I think the Learning to Search was just absolutely invaluable. But seemed like the more we were taught, the more strategic I became and the less time I wasted in looking at things that didn’t actually, weren’t going to help me” (focus group).*

**Demystifying academic culture, forms and language**

Strategies to apply this principle appeared overall effective. The most frequent observation in relation to academic writing in particular was how the unit had contributed to students’ developing confidence with academic referencing, differences in types of academic writing, academic language and style, and critical thinking. Students commented on how the unit had contributed to developing their confidence and capability with academic writing in a number of ways, including understanding the value of planning assignments, making sure they understood the requirements of the task fully, researching the topic, and structuring their writing. Fewer students mentioned reflective writing.

Several students noted that, while their academic reading skills were developed to some extent, understanding academic texts remained one of their major challenges. Teaching staff also mentioned that ways of encouraging greater in-depth engagement with academic and peer-reviewed texts could be considered, as students’ current use of research materials appeared to be somewhat superficial.

*I chose AIX160 to learn how to be successful at Uni; to learn how to think, how to write and how to learn. However, I leave with much more. I leave with not only the skills I will need to be successful in my degree, but also with a confidence in my ability to achieve that will help me be successful in the rest of my life (reflective exam response)*

**Video, text or interactive resources for off-campus students**

No separate data is available for off-campus students’ use of interactive resources. However, CloudDeakin data analysis shows that off-campus students used the study guide more often and for longer periods of time than on-campus students.

#### UDL strategy area 2 - multiple means of action and expression to develop strategic, goal-directed learners

**Provide options for physical action**

**Learning activities – CloudDeakin**

A variety of learning activities to support cognitive development were provided in the CloudDeakin study guide, including self-test quizzes, reflective blogs, checklists, online interactive resources, mindmaps, a wiki and discussion activities. These were designed to be able to be used by individual students and also to provide on-campus teachers ideas and resources for seminar activities. The variety of activities were designed to activate a mix of cognitive modes to encourage students to apply and reflect upon new concepts, and in many cases to break the processes required to complete assessment tasks into small steps.

 Only a small proportion of student research participants explicitly stated they used these activities, which may not be surprising given that all but one research participant were on-campus students and probably relied more on seminars to frame their learning. A small number said they were not even aware of the activities in the CloudDeakin study guide, and teachers generally did not push students to complete them as they thought students had enough other things to do. However, almost all those who did use these activities indicated they were helpful either for putting abstract concepts into context or reviewing the unit, and one suggested that more activities were needed to break up the ‘text and talking’ in the study guide. Several teachers indicated that they used some CloudDeakin activities effectively in their seminars.

**Quizzes and self-assessment activities**

These were mentioned most frequently by students as the preferred interactive activity using CloudDeakin. CloudDeakin data shows that half to two-thirds of enrolled students *completed* the two quizzes provided, while the weekly self-assessment exercises were *viewed* by approximately one-third of students in the first three weeks, this number dropping to one-fifth of students in the latter half of the trimester. There is no data available on the number of students who completed the weekly self-tests.

There are several benefits to using the quiz tool. It gives students immediate feedback on their progress with a grade (that is not part of their assessment), as well as automatic written feedback options. It also serves as a teaching diagnostic tool as it provides data on the grades that students achieve on the overall quiz, and it is further able to provide statistics on the grades of individual questions. This identifies areas where students continue to need support from teaching staff.

For on-campus students, quiz-show type group-based activities proved a popular and effective revision method, according to various sources of qualitative data.

**Learning activities—seminars**

Teachers used different quantities and types of activities, and some students commented that they would have liked more activities in the seminars, or that some activities were rushed, obvious, shallow or pointless. Some noted that activities from classes were repeated in seminars, which was boring for those who attended both—although a small number said the duplication consolidated their learning. A small number reported a perception of disorganisation in some classes. Teacher comments indicated that some activities worked better than others and some seminar groups seemed more receptive to activities than others: some groups simply did not want to participate very much. The purpose and expectations around seminars were not clear to some students.

*Pretty much the essay writing, the referencing, how to search for things. I’ve used them 40 times already in the first 4 months, like it’s just, you just keep going back to those things’ (focus group comment).*

**Provide options for expression and communication**

**Communication—overall**

The overwhelming majority of comments around students’ ability to communicate and express themselves in the unit were positive. A large number of students said they felt able to communicate, ask questions and express themselves in seminars, and many identified this as key to their engagement. Many students noted that their tutors structured in opportunities for two-way communication. Some students commented that they felt their small seminar group size was particularly conducive to good communication. There was also a recognition that communication and group discussion could be challenging to facilitate for a number of reasons, including venue facilities (e.g. lecture style), class size and class dynamic. Many students noted that teaching and support staff were approachable and helpful when needed, in or out of class time.

**Communication—online discussions**

CloudDeakin data shows few students engaged with the weekly activities or reflections posted on the weekly topics. The main use of the discussion board was in relation to assessments, with the student lounge (an informal discussion space) and the final week on revision and exams also receiving a high number of postings. Some students said the CloudDeakin discussions were helpful in answering common questions, although there were comments from both teachers and students that they were not used to full capacity, possibly due to lack of student training and encouragement.

**Communication—online seminars**

The small number of students who participated in the Blackboard Collaborate sessions found them useful. More students accessed the Blackboard Collaborate recordings and slides. Given the relatively small enrolment of Cloud-based students, this suggests that the sessions have some benefit beyond that of the immediate participants.

**Expression—exam format**

The exam contained a mix of multiple-choice questions, short answer and reflective essay questions, and mix of open and closed-book formats. CloudDeakin data shows that, of the 238 students who sat the exam, 234 achieved a pass grade or higher, with an average grade of 69.48%. Few students commented directly on the format of the exam in the student feedback.

**Provide options for executive functions**

**Self-management**

Almost all of the 40 students who allowed access to their reflective exam question responses articulated convincingly, with examples, ways in which they had developed their learning skills and awareness of their strengths and weaknesses as learners. Responses included reflection on their preferred learning styles (for example as visual learners), preferred learning environments (for example quiet study spaces) and preferred organisational style (for example highly organised and well planned approaches). Several commented on their development of group work skills. Many responses explicitly referred to how the unit had supported them to become more independent and self-directed learners, contributed to their self-confidence or supported their transition to university study either from school or from a long break from study.

*Possibly the most important thing I've learned is how to be a self-directed learner. I didn't know how to study. Now I have a plan of how to approach everything, from assignments to exams, and all the daily and weekly requirements in between. I've also discovered a liking for concept maps and flash cards. They make it easier for me to understand a topic. I'm even writing my notes in map form. The volume of study to be done no longer overwhelms me. I know I just need to keep working to my plan (reflective exam response).*

Responses to students’ survey and focus group comments on development of these skills were more mixed. Students exiting year 12 were more likely to say they had made smaller gains in this area than those returning to study after some time. While the majority of the survey and focus group comments were that students *had* developed these skills significantly, a reasonable number either believed they were already skilled enough in this area or were ‘still struggling’.

Data from the eVALUate survey for the unit indicated that only 72% of students agreed or strongly agreed that the unit had encouraged them to think about how they could learn more effectively. This percentage was significantly lower than that for students in the school, faculty and university, which was 85-86%.

**Goal setting procedures**

Goal setting was a major theme identified by students as one of the benefits they had gained from the unit, along with time management and self-motivation skills. Some students noted that they now were able to set goals around sections of their assignments, spreading the workload across the trimester more effectively.

**Critical thinking skills**

Critical thinking and critical analysis were identified by students as particularly useful in the context of both writing and researching. Students mentioned a range of benefits they had gained from using critical thinking in their studies including feeling more engaged, being better able to concentrate and retain information and making better informed judgements regarding appropriate source material. Many students appeared to gain a new-found interest in what they were studying through their new critical approach, suggesting that the explicit focus on critical thinking had led to deeper learning for some students.

A number of students mentioned how taking a more critical stance had impacted on their lives outside of the classroom and others mentioned that they believed their more critical approach would be valuable in their future careers. Several students’ responses suggest that the assessments consolidated unit content in less direct ways.

Several teachers indicated they did not think that some EAL students advanced as far as they should have throughout the unit. Critical thinking was one of the skills teachers identified as poor among some of these students even towards the end of the unit, along with reading, writing and understanding of Australian academic culture.

*I think the major assignment of this unit was […] way more clever than all of the other things I’d had to write because it was really making me work […] Whereas I think some of my other assignments are probably more superficial, whereas this you had to look more deeply at what they were talking about (focus group comment).*

**Time management**

In addition to appreciating the weekly and semester planners they were given in this unit, a significant number of students explicitly mentioned how having strategies around time management had assisted them to manage the stress and anxiety of studying at university, with an additional number commenting on the importance of the strategies for achieving a study=work-life balance. Many of the students who commented on time management skill explicitly mentioned having issues in managing their time during the trimester, noting the particular challenges of having multiple assignments due at around the same time, while some commented on the unexpected volume of work. Only a small number suggested they already had excellent organisational skills or time management strategies prior to commencing AIX160.

#### UDL strategy area 3, multiple means of engagement to develop purposeful, motivated learners

**Provide options for recruiting interest**

**Assignment choice**

The majority of responses indicated students viewed the assessments as relevant to the study skills and unit content and/or as contributing to deeper understanding. Three teaching staff in particular mentioned choice of assessment topics as having a positive connection with student engagement, and several students requested more variety in the assessments to increase relevance to their particular study area.

While many students believed there was sufficient support to complete the assessment successfully, other students and a significant number of teachers expressed concern with the lack of clarity around the assessment tasks, and perhaps even difficulty due to the complexity of the task itself. One teacher directly suggested that the choice of topics and students’ freedom to pursue their own research topic may have added to the confusion around the task itself.

Several students noted that better/more example assessments were needed. A number of teaching staff commented on what they felt were a lack of resources/support that facilitated successful completing of assessments. The TESOL teacher noted that the many separate documents students needed to access for assignment instructions could be simplified.

*I struggled a lot trying to read the articles, especially ones for the assignment because I found it was such a weird assignment topic […] I didn’t know what they wanted me to find and it, it threw me a lot […] and then trying to find points that backup with it […] I struggled so much with that (focus group comment).*

The eVALUate data suggests that the assessment tasks in the unit were successfully connected to the learning outcomes themselves, as 89% of respondents (slightly higher than the school and faculty average) agreed or strongly agreed that ‘the assessment tasks in this unit evaluate my achievement of the learning outcomes’.

**Choice of resources**

Options for recruiting interest were also provided through giving students choices of video, audio and text resources, and a variety of individual and group-based activities**.** As noted earlier, students appreciated the quality and availability of audio-visual resources, but some expressed concern about access to these resources from home where there were data restrictions (an issue of particular significance to Cloud-based students), and/or the length of some of the videos. As noted earlier, the interactive quizzes and self-assessment tools was most frequently cited as engaging learning activities.

**Provide options for sustaining effort and persistence**

**Encouraging tone**

 A significant number of students noted that teaching/support staff were approachable and helpful when needed, in and out of class time. Several students commented favourably about the multiple forms of communication that were available (online and face-to-face). A smaller number of students and teachers in particular noted that they thought the CloudDeakin discussion boards were very helpful for answering common questions, although some of these further noted they were not used to their full capacity (as noted above), possibly due to shyness, or lack of student training/encouragement.

**Formative feedback**

Assignments 1 and 2 were developed to encourage effort and persistence, with Assignment 2 building upon research completed for Assignment 1, and formative feedback provided for this. eVALUate data suggests that students found the feedback helpful overall in achieving the learning outcomes of the unit (82% of respondents).

**Provide options for self-regulation**

**Essay/report plans and marking rubrics**

In order to facilitate self-regulation, students were encouraged to share plans and drafts of assignments in seminars (Cloud-based students were encouraged to send them privately to the unit chair prior to submission), and these were also assessed as part of Assignment 2. Comprehensive marking rubrics were available before assignment submission and time was spent in seminars on decoding the rubric and applying this knowledge to the example assessment provided. Cloud-based students were encouraged to submit their essay plan to the unit chair, but less than half took this opportunity.

**CloudDeakin study guide**

The CloudDeakin study guide was designed to support independent learning for both Cloud-based and on-campus students. The study guide was designed to be highly interactive, and a model for online learning. This means there were a large number of audio-visual resources, and links provided to take students to sites outside the study guide. However, as noted earlier, a significant number of students found this confusing/problematic in some way.

The CloudDeakin data suggests that off-campus students made more use of the study guide. The data also shows that use of the study guide decreased as the trimester progressed. In terms of resources visited, the majority of resources accessed by students were the unit guide and the instructions in the assessment folder. Lecture slides and notes for the first five weeks of trimester were accessed by half of enrolled students. This number dropped significantly in the second half of the trimester.

## Discussion

### Success of intervention in terms of UDL principles: key issues

A number of pressing issues have emerged from the evaluation, which suggest further work is needed to successfully develop curriculum to give all individuals equal opportunities to learn. There are at least four notable areas where further intervention is needed. These are in demystifying academic culture, forms and language; further developing self-management skills and motivation; rationalising resources and ensuring their accessibility; and choice and direction in assessments.

**Demystifying academic culture, forms and language**

While strategies to apply this principle appeared overall effective from the surveys and focus group interviews with students, the quantitative data show that the mean mark of students from EAL backgrounds declined in 2015, along with that of low-SES students. The discrepancy between the quantitative and qualitative data may be due to the fact that few EAL students participated in the focus group discussions. The quantitative data suggests further intervention is needed to actively demystify academic culture, forms and language for EAL and low-SES students who may have little initial understanding of academic culture and its requirements, in particular in the area of critical thinking skills. Such intervention recognises that ‘effective practice for one group can and should be effective practice for all’ (Morgan & Houghton 2011); addressing the needs of EAL and low-SES students in this unit should benefit the whole AIX160 student cohort in future.

**Further developing self-management skills and motivation**

A major focus of the unit was to develop students’ awareness of how to learn effectively, and manage themselves as learners. Responses analysed from the reflective essay exam component suggest that this had been successful in the unit. However, responses to the more objective method of students’ survey and focus group comments on development of these skills were more mixed, with many students indicating they continued to struggle with self-management. Despite the extensive scaffolding of executive skills in the unit, data from the eVALuate survey on the question of effective learning was significantly lower than the school, faculty and university average. While the reasons for the apparent discrepancy between different sources of data are not clear, some discrepancy may be because the exam question encourages positive responses. One area where further intervention may be helpful is to link assessments more strongly to executive skills. Two of the three assessments in the unit did not explicitly assess these skills, although the assignments did require students to apply sufficient critical thought, planning ability, personal organisation skill, understanding of assessment criteria and so on to be able to succeed. More explicit connections between assessment tasks and self-management both in resources and during teaching would also further scaffold executive skills.

**Rationalising resources and ensuring their accessibility**

It is evident that the number and variety of resources available on CloudDeakin, while appreciated overall, could also be confusing for students. Streamlining the presentation of the study guide, and reducing and simplifying the writing itself, could perhaps make the study guide less overwhelming, and therefore more effectively engage the students. This is especially important to ensure student engagement early in the trimester. Yet, there is a tension here between providing students with a highly supportive learning environment that anticipates their numerous information needs when transitioning to university and challenging students to become self-reliant and search out what they need. This tension is often found in first-year curricula designed to optimise students’ academic success (Wilson 2009).

As noted earlier, some students raised the issue of accessibility to online resources due to data restrictions. Unlike the traditional study guide, formatted for print, the CloudDeakin study guide is less amenable to downloading, printing and therefore studying offline. More use could be made of the set text to provide the stable, off-line and ‘didactic’ information, which is then supplemented by an engaging and interactive CloudDeakin site. The roles and functions of the e-study guide and set text should then be clearly defined and explained at the start of the unit.

Significantly, the student feedback on the variety of resources can be seen as a problematic feature of the UDL framework itself. While the framework encourages multiple means of representation, this needs to be carefully managed to ensure students don’t feel overwhelmed by too many options and the appearance of repetition.

**Choice and direction in assessments**

Assignments 1 and 2 provided a wide choice of subject area from which to choose.While the wide subject choice itself was generally viewed positively, the significant issue that emerges from the data is the lack of resources and support students felt they had in completing their assessments successfully. While several students believed there was sufficient support, other students and a significant number of teachers expressed concern with the lack of clarity around the assessment tasks, and perhaps even the complexity of the tasks. This suggests that providing students with choice to recruit interest is effective, but it must be carefully scaffolded and supported when such choice is tied to assessment.

On the question of variety of assessments and choice of topic, here too the UDL model which encourages multiple means of action and expression needs to be balanced carefully with students’ desire for clear direction and instructions. Choice must be balanced with clear direction and adequate support for successful completion of assessments.

**Response to analysis of unit development in light of UDL principles**

The research question for this evaluation was:

*In what ways and to what extent have UDL principles applied in AIX160 enhanced student engagement and learning, in particular for target equity groups, and in what ways could engagement and learning be further enhanced?*

The discussion above demonstrates that there is no easy answer to this question. As indicated, in some instances, students’ preferences do not always match UDL recommendations. As a method of analysis, the UDL framework was also found to have limitations. The UDL framework is large, wide-ranging and complex; and some elements overlap or are poorly defined. For example, aspects of the element ‘provide options for executive functions’ are similar to those listed under ‘provide options for sustaining effort and persistence’ and ‘provide options for self-regulation’: all relate strongly to goal management. This makes ordering the analysis and discussion of the results of the ways in which various principles were applied in the unit awkward. Further, as has been noted elsewhere (Kirkpatrick 2015), the variables of implementing UDL principles for various types of students, contexts and learning activities are ‘voluminous and multifaceted’ (p. 284), making application of this theoretical model ‘fraught with uncertainty’ (p. 289). The educational design and teaching task has been endlessly complex in itself, and to assess rigorously the impacts of the application of each principle in a cross-campus, multi-mode learning experience is highly ambitious. In addition, the previous iteration of the unit as ASC160, which has served as a baseline for comparison, was not devoid of UDL principles—far from it! Thus, we have been forced to take a broad and sometimes uncertain view of what evidence might constitute ‘enhanced student engagement and learning’ in this unit, as a result of the application of UDL principles. At the same time, in order to meet the practical aim of providing indications of which aspects of the unit could be improved upon for future cohorts of students, our recommendations reflect changes that we feel are achievable in the Deakin teaching and learning (and budgetary) context.

## Conclusion

As noted above, it is difficult to provide succinct answers to the various parts of the research question for this evaluation project. Aside from the difficulty of structuring coherent findings using the UDL framework, the data contains mixed results in many areas due to the diversity of the students’ background and experience across the different modes and campuses. The improvements in student success rates, in particular for those in the target equity groups, suggest that the many ways in which UDL principles were applied in this unit have enhanced student learning. Quantitative measures of student satisfaction were also quite positive, though there are indications that some sources of motivation and engagement could be improved. At the time of writing all of the immediate-term recommendations listed above had already been implemented, and plans were in place to implement the medium-term recommendations (See Appendix B). That this evaluation project was able to identify areas in need of improvement and in many cases the specific changes that were needed to improve the students’ experience is in itself is a positive outcome from the project. Ethics approval has been gained to evaluate the success of the new design for this unit, and of ongoing incremental changes such as those listed above, in a longitudinal study. Given the importance of this unit for helping students to build the skills they need to succeed at university as early and strongly as possible, the research team hopes strongly that this study proceeds and continues to inform the unit’s curriculum development and teaching approaches.

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## Macintosh HD:Users:petrab:Desktop:CAST UDL.pdfAppendix A: Universal Design for Learning principles

## Appendix B: AIX160 UDL strategies evaluation table

**Table 1 – UDL strategy 1: Provide multiple means of representation**

|  |  |  |
| --- | --- | --- |
| UDL strategy | Application in AIX160 | Evaluation |
| Provide options for perception | Video, audio, graphic or interactive online resources are made available as alternatives to text where possible. | While a number of students indicated that they found audio-visual resources were helpful overall, several of these noted that some of the videos were too long. A significant number of respondents (six students and one teacher) found the audio-visual resources were problematic in some way. Of particular note are the two students who found accessing the videos an issue when working from home: ‘Too much focus on video stuff which is fine when you’re at Deakin but I’ve got to pay for data at home …’ This could also be an issue for remote students, and an equity issue overall. |
| Recorded lectures and PowerPoint slides are provided. | CD data shows between one-third and half of students accessed the weekly PowerPoint lecture slides. PowerPoint was mentioned in a positive way by a number of students, several of who expressed a preference for PowerPoint over video, as they are easier to download and take up less data. One teacher also mentioned PowerPoint as a tool in their teaching that enabled them to refer students to relevant information.Recorded lectures were not widely accessed. Around 10% of students accessed the online seminar recordings designed for off-campus students.  |
| Transcripts or captions for video and audio resources are provided. | Several students positively mentioned the availability of transcripts. Transcripts available only for some of the videos. No captions provided. |
| Teaching staff provide print-based handouts of key resources to on-campus students. | Several students stated that they appreciated the handouts on time management, particularly noting the trimester planner. A large number of students explicitly noted the value of the time management tools to which they were introduced, including the assignment planner, trimester and weekly planners. Comments on these resources were invariably positive with many stating they were now using these tools, had them pinned on their walls and were referring to them regularly, |
| Provide options for language, mathematical expressions and symbols | Glossary of university terms is provided. | CD data shows that the glossary was accessed 41 times during the trimester. Glossary was not mentioned in qualitative data.  |
| Terms are explained in context. | Library and Language and Learning classes were highly valued. Students connected value to the relevance of content and its application to study and assessment, and cited skill building as an outcome. Being able to search for and evaluate information, and essay writing were identified by students as a key skill. |
| Mathematical concepts are specifically addressed and explained using contexts of use. | Mathematical concepts that are frequently used in social science research were specifically addressed and explained using contexts of use in a weekly topic dealing with different methods of data collection and representation. No specific feedback on this. |
| Provide options for comprehension | Introductions and summaries are provided for each weekly segment of CloudDeakin study guide, and many of the pages. These explicitly link learning experiences to contexts of application. | Weekly introductions and summaries were accessed at a slightly higher rate than the main pages of each week’s study guide. However, there was significant feedback on the amount of information available on Cloud Deakin and the organization of this information. The response was overwhelming that, while there were many resources available to support learning, responses were typically that it was almost ‘too much’ and at times difficult to navigate. Several students stated that they found the learning resources provided repetitive, uninteresting, or lacking in enthusiasm, while a small number indicated that they did not really use the CD learning resources at all. |
| A weekly graphic illustrates linkages between the week’s learning activities, assessments and unit aims. | No feedback |
| Library and Language-Learning staff provide supported, hands-on practice of using academic processes in classes or seminars. Processes scaffolded in this way include finding, evaluating and using academic texts, referencing and essay/report writing. | Students overwhelmingly affirmed the investment in teaching **digital skills** for finding, evaluating and sharing resources during the class and seminar. Many commented on how they found the depth and variety of information and how to access it overwhelming until given the opportunity to develop search strategies and evaluation techniques. Students valued the **exercise in evaluation of information** and commented on their growth of understanding in the nature of accuracy and reliability and how to employ judgment of information sources. A large number of responses also reflected on the transfer of skills to other units or the foundation to succeed throughout their course. Academic staff felt the digital literacy learning outcomes had been achieved although there was a comment that more time should be spent on the nature and quality of academic and peer reviewed resources. In addition, one teacher said that these skills took time to learn and should be revisited later in the unit and ideally in later units as well. The ‘Here to help: Library and LLA’ topic on the Cloud Deakin discussion page received 26 threads and 35 replies over the trimester. |
| Video, text or interactive resources are provided to enable review of these concepts and access to these processes by off-campus students | No separate data is available for off-campus students’ use of interactive resources. However, CD data analysis shows that off-campus students used the study guide more often and for longer periods of time than on-campus students.  |
| A focus of learning activities is demystifying academic culture, forms and language. | A significant number of students expressed appreciation for the way the unit had contributed to their confidence with academic skills such as **referencing**, **differences in types of academic writing**, **academic language and style**, and **critical thinking**. Fewer students mentioned **reflective writing**. Students commented on how the unit had contributed to developing their confidence and capability with academic writing in a number of ways, including understanding the value of **planning assignments** and making sure they **understood the requirements of the task fully**, **researching the topic** and **structuring their writing**. Fewer students identified how their **academic reading skills** were developed in the unit, with some noting that understanding academic texts remained one of their major challenges. Teaching staff also mentioned that ways of encouraging **greater in depth engagement with texts** could be considered, as students’ current use of research materials appeared to be somewhat superficial. |

**Table 2: Provide multiple means of action and expression**

|  |  |  |
| --- | --- | --- |
| UDL strategy | Application in AIX160 | Evaluation |
| Provide options for physical action | Learning activities in study guide and seminars are designed to apply and reflect upon new concepts, using a combination of individual and collaborative modes. They include self-test quizzes, reflective blogs, checklists, online interactive resources, mindmaps, a wiki and discussion activities. | The majority of the comments about learning activities indicated that participants thought these helped them to learn, though there were some criticisms. EVALUate scores on the question ‘The learning experiences in this unit help me to achieve the learning outcomes’ were *a little less positive* for AIX160 (80% agreement) than for the school (85%), faculty (87%) or university (86%).Many students indicated that the seminar-based activities were helpful in providing practical reinforcement of concepts. Some commented that they would have liked *more* activities in the seminars. The quiz-based activities were singled out by several students as being particularly engaging. Only a small proportion of the student participants said they used the CloudDeakin activities, which may not be surprising given that most participants were on-campus students. However, those who did use the activities indicated they were helpful either for putting abstract concepts into context or reviewing the unit. A small number said they were not aware of the activities in the online study guide, and three commented that they should have been promoted more. Several teachers indicated that they used some CloudDeakin activities effectively in their seminars.Weekly self-tests (with formative feedback) were provided and students encouraged to reflect on key points in the learning activities each week. Quizzes and self-assessment activities were mentioned most frequently by students as the preferred interactive activity using Cloud Deakin. CloudDeakin data shows at least a fifth of enrolled students viewed the weekly self-assessment page, and half to two-thirds of students enrolled completed the two quizzes provided. This suggests that simple self-assessment exercises with immediate feedback may be a preferred activity for students in terms of online learning. For on campus students, quiz-show type group-based activities proved a popular and effective revision method. The wiki activity was not used at all by either on campus or off campus students.  |
| Provide options for expression and communication | On-campus students have individual and group activities in seminars, and can communicate with peers and tutor face-to-face. | Small-group activities, which encouraged more students to be involved, were overall popular. However, criticisms from small numbers of students were that some activities were rushed, obvious, shallow or pointless. Teacher comments indicated that some seminar groups seemed more receptive to activities than others: some groups simply did not want to participate very much. Teachers also indicated that some activities worked better than others. |
| Off-campus students have fortnightly Blackboard Collaborate seminars. | The small number of students who participated in the BB Collaborate sessions (8 dropping to 3-4 out of 30 Cloud students) found them useful. The Blackboard Collaborate recordings and slides showed 13-26 visits across the trimester. Given the relatively small enrolment of Cloud-based students, this suggests that the sessions have some benefit beyond that of the immediate participants. The Cloud teacher said she would like to develop this mode of teaching further, particularly with larger cohorts of Cloud students over Trimester 3. The teacher said she would like to develop this mode of teaching further, particularly with larger cohorts of Cloud students over T3. |
| All students are encouraged to communicate with peers and tutor via email and via Cloud-based discussions. | Students were given a variety of ways of communicating with their peers and teachers. These included face-to-face communication in seminars and classes, online seminars tutorials, CD discussion boards (inc. access to tutor, library and LLAs), and email. The CloudDeakin site contained friendly photographs of all teaching and support staff, and weekly encouragements to contact relevant staff with queries and use the discussion areas to share their views on suggested topics. CD data shows a low uptake by students using the weekly discussion board. Few students commented on or engaged with the weekly activities or reflections posted on the weekly topics. The main use of the discussion board was in relation to assessments (121 posts and 265 replies). Students posted less on the weekly topics (85 posts and 118 replies across the 11 weeks), with the student lounge (an informal discussion space) and the final week on revision and exams receiving the greatest number of postings. The ‘Here to help: Library and LLA’ topic received 26 threads and 35 replies over the trimester. Positively, students responded to one another’s queries on several occasions, engaging in discussion on the assignment in this way. This was encouraged and praised in each occurrence by the tutor monitoring the assignment discussion threads.  |
| A group work oral presentation activity for all students is scaffolded with examples and checklists for good performance. | Group work oral presentation activity was part of week 4 on campus seminar. Informal feedback via seminar provided to teacher was positive. No further feedback on the specific activity is available from data gathered during surveys/interviews. The online group activity was not utilized by off-campus students. The possibility of including further group work tasks or a group assignment in the unit was raised in the teacher feedback.Some students commented that they felt their small seminar group size was particularly conducive to good communication. There was also a recognition that communication and group discussion could be challenging to facilitate for a number of reasons, including venue facilities (e.g. lecture style), class size and class dynamic.Those students commenting specifically on the inclusion of group work appeared to be from two groups; those who enjoyed and valued group work and those who had previously found group work challenging. Both groups however commented positively on the inclusion of group work strategies in the unit with some of those with prior negative experiences noting that the strategies they had been taught would assist them in future group scenarios.  |
| Time is given during seminars for assignment planning and writing. | Several students appreciated the time given to assignments in seminars. Assignment planning was supported for off-campus students in BB collaborate sessions, with recordings made available to all students. Off-campus students were also informally encouraged to post paragraphs on Cloud Deakin for feedback. Several students did this, which enabled peer-to-peer learning via the discussion board.  |
| The exam contains a mix of MCQs, short answer and reflective essay questions, and mix of open and closed-book formats.  | CD data shows that, of the 238 students who sat the exam, 234 achieved a pass grade or higher, with an average grade of 69.48%. Few students commented directly on the format of the exam in the student feedback. Those who did comment noted the difficulty of external links, added instructions on navigating font and formatting using the CD quiz tool, and more guidance early in the trimester about what will be on the exam. |
| Provide options for executive functions | Goal setting procedures are taught and students are encouraged to reflect on learning achievements and progress towards goals each week | A number of students explicitly referred to how the unit had supported them to become more independent and self-directed learners. Goal setting, along with time management and motivation, was a major theme identified by students as one of the benefits they had gained from the unit. Some students noted that they now were able to set goals around sections of their assignments, spreading the workload across the trimester more effectively. Teachers likewise commented on the importance of this skill. However, while goal setting was mentioned positively, data from the Evaluate survey for the unit indicated that 72% of students agreed or strongly agreed that the unit had encouraged them to think about how they could learn more effectively. This percentage was significantly lower than that for students in the school, faculty and university, which was 85-86%. |
| Methods to develop critical thinking skills, in particular to evaluate non-academic resources, are explicitly taught.  | Critical thinking and critical analysis were also identified by students as particularly useful in the context of both writing and researching. Students mentioned a range of benefits they had gained from using critical thinking in their studies including feeling more engaged, being better able to concentrate and retain information and making better informed judgements regarding appropriate source material. Many students appeared to gain a new found interest in what they were studying through their new critical approach, suggesting that the explicit focus on critical thinking had led to deeper learning for some students. Furthermore, a number of students mentioned how taking a more critical stance had impacted on their lives outside of the classroom and others mentioned that they believed their more critical approach would be valuable in their future careers. Several students’ responses suggest that the assessments consolidated unit content such as critical thinking in less direct ways:“I think the major assignment of this unit was […] way more clever than all of the other things I’d had to write because it was really making me work […] Whereas I think some of my other assignments are probably more superficial, whereas this you had to look more deeply at what they were talking about.”Several teachers indicated they did not think that some NESB students advanced as far as they should throughout the unit. Critical thinking was one of the skills teachers identified as poor among some of these students even towards the end of the unit along with reading, writing, understanding of Australian academic culture. |
| Time management planners are provided and time management principles are revisited throughout the unit. | Many students commented on to the value of the time management tools they were introduced to including the assignment planner, trimester and weekly planners. Comments on these resources were invariably positive with many stating they were now using these tools, had them pinned on their walls and were referring to them regularly. A significant number of students explicitly mentioned how having strategies around time management had assisted them to manage the stress and anxiety of studying at university, with an additional number commenting on the importance of the strategies for achieving a study/work /life balance. Many of the students who commented on time management expclitily mentioned having issues in managing their time during the trimester, noting the particular challenges of having multiple assignments due at around the same time, while some commented on the unexpected volume of work. Only a small number suggesting they had excellent organisational skills or time management strategies before completing the unit.  |
| Assignment resource search planners are used. | Students commented positively on the inclusion of assignment planners, alongside trimester and weekly planners.  |
| Assignment 1 has a template to guide compilation of information. | No direct feedback was received from students in data collection on the template. However, in informal feedback it seems that the template was helpful for students. Those who wished to use a different format were encouraged to do so, and this option seemed appreciated by students.  |
| Assignment 1 includes a peer assessment component, which is graded. | Little direct feedback was received from students in data collection on the peer assessment component. However, the majority of the students completed this part of the assignment and the work completed by student on this component was of high quality. In seminars, students appreciated the opportunity to learn more about marking rubrics and the way their work would be assessed while they were at university. |
| Assignment 2 is built upon research completed for Assignment 1, and formative feedback is provided for this. | The majority of the students completed the two assignments successfully. Individualised feedback was provided in assignment 1, in addition to the rubric. Students who needed additional support were encouraged to contact the tutor and/or Unit Chair. In the eVALUate data, 82% of students agreed or strongly agreed that feedback provided on their work in the unit helped them to ahceive the learning outcomes. This is on a par with the Faculty average.  Little direct feedback was received from students in the data collection on the way the two assignments were linked. However, there was some feedback on the resources/support for the two assessments from students and teaching staff. A significant number of teaching staff commented on what they felt were a lack of resources/support that facilitated successful completing of assessments.  |
| Annotated sample essays from previous students are provided. | Several students noted that a wider range and/or better example assessments would be helpful. |
| Comprehensive marking rubrics are used for both assignments. | No direct feedback was received from students in the data collection on the way the use of marking rubrics. However, time was spent in one of the seminars analyzing the rubric for assignment 1, as this was part of the peer assessment requirement for students. Students seemed to appreciate the opportunity to learn more about using rubrics. It is not clear to what extent the students might have used feedback provided via the rubric as a way to improve their own work. |
| Linkages between assessments, learning activities and unit aims are made each week in the CloudDeakin study guide, classes and seminars. | Little direct feedback was received from students or teachers in the data collection on the links between different components of the course. eVALuate data shows 91% of students indicated that they were satisfied that the learning outcomes were clearly identified in the unit. This is slightly higher than the Faculty average. 89% of students agreed or strongly agreed that the *learning resources* (which includes the CD study guide) in the unit helped them to achieve the learning outcomes. This is slightly higher than the Faculty average. However, only 85% of students believed that the *learning experiences* in the unit (which includes classes and seminars) helped them to achieve the learning outcomes. This is slightly lower than the Faculty average.  |
|  | Weekly self-tests (with formative feedback) are provided and students are encouraged to reflect on key points in the learning activities each week. | CloudDeakin data shows that half to two-thirds of enrolled students *completed* the two quizzes provided, while the weekly self-assessment exercises were *viewed* by approximately one third of students in the first three weeks, this number dropping to a fifth of students in the latter half of the trimester. There is no data available on the number of students who completed the weekly self-tests. In the feedback from students, it was clear that students preferred weekly quizzes as a form of self-assessment. |

**Table 3: Provide Multiple Means of Engagement**

|  |  |  |
| --- | --- | --- |
| UDL Strategy | Application in AIX160 | Evaluation |
| Provide options for recruiting interest | Assignments 1 and 2 provide a wide choice of subject area for students to choose from. Suggestions are provided to support exploration of a variety of popular subject areas. | Three teachers commented positively on the students’ being able to choose their own research topic, and linked this with engagement. A number of students suggested that more flexibility of choice/variety of assessments tailored to students’ interests/career paths would be beneficial.  The teaching staff noted the complexity of the assessment, and the uncertainty around what was required. One of the teachers commented that giving the students a choice in the beginning may have contributed to the confusing.The significant issue that emerges from the data is the lack of resources and support for students in completing their assessments successfully. While several students believed there was sufficient support, other students and a significant number of teachers expressed concern with the lack of clarity around the assessment tasks, and perhaps even the complexity of the task itself, 1 teacher directly suggesting that the choice and freedom for students’ to pursue their own research topic may have added to the confusion around the task itself.The eVALUate data suggests that the assessment tasks in the unit were successfully connected to the learning outcomes themselves, as 89% of respondents (slightly higher than the school and faculty average) agreed or strongly agreed that ‘the assessment tasks in this unit evaluate my achievement of the learning outcomes’.  |
| The CloudDeakin study guide is designed to support independent learning for both off- and on-campus students. | The majority response to the overall quality of CD learning resources was positive, finding the resources useful, helpful, relevant and/or of a good standard. While the majority of responses to the overall quality were positive, several students also noted, alongside a general appreciation of the resources, dissatisfaction with the *volume* of resources: overwhelming, too much, and/or unclear. This student feedback was supported by the teaching staff. While no teaching staff expressed a general appreciation of the Cloud Deakin site, a significant number noted that there seemed too much information available for students. The expert critique provided by a TESOL teacher’s review of CD states that ‘the content is extremely thorough and high quality’ with ‘engaging activities, videos, and many links to further resources (and this is what makes the unit such high quality)’ but expressed concern that ‘there is a high volume of information each week to process.’ The TESOL teacher further notes that this content can be ‘a little didactic’ and suggests a ‘webquest that takes them through some of the resources, or a quiz, or even a checklist to fill out would draw students in to finding what information they need for their own particular situation.’ This way the students would be more empowered to make ‘decisions about what issues they have and how to solve them’. Feedback also indicates some confusion about the purpose of the study guide: on campus students didn’t really seem to think it was necessary to use CD as much. CD data shows that off-campus students used the study guide more and for longer periods of time than on-campus students. Off-campus students visited an average of 72.48 topics, while the comparable number of on-campus students visited 47.61 topics. The data also shows that use of the study guide decreased as the trimester progressed. In the first weeks of the trimester, one-third to half the students enrolled accessed the study guide. From week 4 onwards, only one-quarter to one-third of students accessed the study guide, with some weeks as few as 40-60 students of 263 enrolments accessing the pages. While some drop-off can be expected given the pressure to complete assessments from week 5 onwards, students did not return to the study guide in the final weeks of trimester, although approximately one-third of active students accessed the pages on preparing for exams, and revising AIX160. In terms of resources visited, the majority of resources accessed by students were the unit guide and the instructions in the assessment folder. Lecture slides and notes for the first five weeks of trimester were accessed by overall half of enrolled students. This number dropped to under half in the second part of the trimester. |
| Where possible, students are given choices of video, audio and text resources, and a variety of individual and group-based activities. | In feedback, students expressed overall appreciation for the variety of resources. However, several students also noted, alongside a general appreciation of the resources, dissatisfaction with the *volume* of resources: overwhelming, too much, and/or unclear. Some students noted difficulty accessing video resources on limited data availability. Students mentioned group work frequently as a useful way to learn, linking this to communication, relevance and problem solving. |
| Provide options for sustaining effort and persistence | Teaching and support staff are introduced in the study guide, with pictures and contact details. Students are also encouraged to ask questions in class, via email and in online discussions. | A significant number of students noted that teaching/support staff were approachable and helpful when needed, in and out of class time. Several students commented favourably about the multiple forms of communication that were available (online and face-to-face). A smaller number of students and teachers in particular noted that they thought the CloudDeakin discussion boards were very helpful for answering common questions, although some of these further noted they were not used to their full capacity, possibly due to shyness, or lack of student training/encouragement. |
| Assignment 2 is built upon research completed for Assignment 1, and formative feedback is provided for this. | The majority of the students completed the two assignments successfully. Individualised feedback was provided in assignment 1, in addition to the rubric. Students who needed additional support were encouraged to contact the tutor and/or Unit Chair. In the eVALUate data, 82% of students agreed or strongly agreed that feedback provided on their work in the unit helped them to ahceive the learning outcomes. This is on a par with the Faculty average.  Little direct feedback was received from students in the data collection on the way the two assignments were linked. However, there was some feedback on the resources/support for the two assessments from students and teaching staff. A significant number of teaching staff commented on what they felt were a lack of resources/support that facilitated successful completing of assessments.  |
| Weekly self-tests (with formative feedback) are provided and students are encouraged to reflect on key points in the learning activities each week. | CloudDeakin data shows that half to two-thirds of enrolled students *completed* the two quizzes provided, while the weekly self-assessment exercises were *viewed* by approximately one third of students in the first three weeks, this number dropping to a fifth of students in the latter half of the trimester. There is no data available on the number of students who completed the weekly self-tests. In the feedback from students, it was clear that students preferred weekly quizzes as a form of self-assessment. |
| Provide options for self-regulation | The tone of the face-to-face teaching, study guide and assessment feedback is friendly and encouraging, communicating a belief that students can succeed. | The data indicated that teacher communication was identified as key to student engagement, and linked to the effective facilitation of opportunities for collaboration and interaction. |
| Note-taking, mind-mapping and other reading/learning strategies are explicitly taught in classes, seminars and online in CloudDeakin. | There were few comments from students related specifically to the value of note-taking. Significantly more students commented on the reading and learning strategies provided in the unit. This was particularly evident in the feedback on digital literacy, where students valued the exercise in evaluation of information and commented on their growth of understanding in the nature of accuracy and reliability, and how to employ judgement of information sources. A large number of responses also reflected on the transfer of skills to other units or the foundation to succeed throughout their course. However, students noted that understanding academic texts remained a major challenge, despite having developed their reading skills to some extent.  |
| Larger activity tasks are presented as split into smaller parts. | The TESOL teacher expert critique notes that the 16 separate documents to open regarding assessment for this unit may have seemed overwhelming. However, ‘reading the list they are all very helpful and useful documents’ and she suggests they might be put under sub-headings to clarify which ones were more important.  |
| Assessment tasks are supported with either a table to complete in parts or step-by-step processes. Students are encouraged to share plans and drafts of assignments in seminars (or off-campus privately with the unit chair) prior to submission. | While several students expressed appreciation of the resources available to support assessments, noting that there were ‘…great instructions outlining what needed to be done and exactly what was expected’, other students indicated that they would have liked ‘more time spent on analysing our current unit assignments to make sure we understood what was expected of us’ [survey]. Yet, a small number of students during a focus group expressed the belief that assignments should be done in the students’ own time, as classes should be about what students needed to learn for university.Less than half the off-campus students submitted draft of essay/report plan to the unit chair for review, prior to submission of assignment. |
| Comprehensive marking rubrics are available before assignment submission. | No direct feedback was received from students in the data collection on the way the use of marking rubrics. However, time was spent in one of the seminars analyzing the rubric for assignment 1, as this was part of the peer assessment requirement for students. Students seemed to appreciate the opportunity to learn more about using rubrics. It is not clear to what extent the students might have used feedback provided via the rubric as a way to improve their own work. |

## Appendix C: Unit Chair and teaching team response to report

**Immediate changes (T3)**

* *Unit chair and teaching team to reorder weekly topics so that high priority topics, such as referencing, are taught early in trimester.*

Changes have been made to order of weekly topics so that week 8 referencing is now week 4, and group work comes later in the unit. Topics are now ordered under 3 main modules – Digital Literacy, Communication and Further University Skills with the high priority topics now taught in the first two modules.

* *Unit Chair and teaching team to rationalise and streamline Cloud Deakin study guide*

Cloud Deakin study guide has undergone major revision in preparation for T3. Most weekly topics are streamlined to six pages of content and more opportunities to use the set text. A separate section titled ‘before you begin’ contains preparation information for completely new students on using Cloud Deakin, setting up email, orientation on campus etc. Visual presentation and organisation has been streamlined with information ordered under headings and icons to indicate readings, media files, activities, important information. Images and embedding of videos better aligned to text.

* *Unit Chair and teaching team to review and simplify existing CloudDeakin activities to encourage stronger engagement from Cloud-based students. A weekly quiz could form the basis of a weekly discussion, and/or supplement other activities. The Blackboard Collaborate seminars could be used as a springboard for further engagement on the discussion board.*

CloudDeakin activities simplified for off-campus students. Most activities contribute directly to the completion of assignments. Major group activity of developing a wiki will be trialed over T3. Teaching staff to more actively encourage posting and feedback on activities on discussion board. Weekly online seminars scheduled to further encourage collaboration on activities.

* *Unit Chair and teaching team to provide further resources and activities on reading and analysing academic writing*

Study guide now includes week 1 – ‘introduction to note-taking and academic reading’ page. A page providing ‘more advice on academic reading’ is given in week 3 on digital literacy with a table on applying reading strategies (based on document provided by Marie Gaspar). Annotated academic article still in preparation. Will form part of online seminar discussion for week 3.

* *Unit Chair and teaching staff to simplify assessment instructions.*

Assessment information now organized into three separate folders, one for each major assignment. Separate pages included in study guide at relevant weeks that help students start each assignment.

**Medium term changes (T1 2016)**

* *Unit Chair to review and rationalise class- and seminar-based activities, and facilitate sharing among teachers of successful seminar activities and methods to encourage participation.*

To be completed by teaching team in preparation for T1 2016

* *Unit Chair and teaching team to provide a wider range of annotated example assignments; to scaffold assessment more explicitly during weekly lectures and seminars; and to consider limiting the number of choices in the assignment task itself, with an option provided for students to contact the Unit Chair directly and propose a topic aligned to their area of interest.*

T3 completed: Annotated example assignment 75-85% range provided for students. Assessments scaffolded in study guide at appropriate intervals with more explicit discussion on key ideas required for assignment such as what is an academic, and what do they do? Four key topics with four example academics for each topics from which the students can choose. Students able to propose a topic aligned to their area of interest through contacting Unit Chair directly.

To be completed by teaching team in preparation for T1 2016: Expand example assignment to include annotated example 65-75% range.

* *Unit Chair and teaching staff to consider redeveloping weekly self-assessment exercises into a weekly quiz, using the quiz tool.*

T3 completed: All weekly self-assessment exercises developed into weekly quizzes.

* *Unit Chair and teaching team to provide clear information to students that connects the first two assessments in particular more clearly to learning outcomes in the unit.*

To be completed by teaching team in preparation for T1 2016

1. A slight discrepancy exists between total numbers of students recorded in University Strategic Intelligence and Planning Unit (SIPU) data as used in Tables 2 and 3 and CloudDeakin enrolment figures as used in Table 1. [↑](#footnote-ref-1)