Action Research: A Reflection on Developing a Program for Master of Engineering Thesis to Improve Writing and Discourage Academic Misconduct

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Abstract

Academic misconduct is a growing concern in the Master of Engineering course at Charles Darwin University. A set of workshops have been developed by the Academic Language and Learning Success Program to teach literacy in an attempt to lessen the incidents of plagiarism in the course as often students are not aware of the intricacies of scholarship at western universities. This paper is an action research report that reflects on the development and delivery of these workshops as action research is about learning through action, which will lead to change and improved student learning and writing outcomes.

Keywords: Action research; Academic writing, Program Development, Academic Misconduct, Academic Literacy

1. Introduction

Academic misconduct has once again made headlines in newspaper reports and in television documentaries, The SBS documentary “Degrees of Deception” (20 April 2015) claims that academic standards in Australia are falling and that students are being passed even though they have not fulfilled the requirements of the course. The SBS hinted that universities are not addressing this issue and that ‘commercial imperatives are overtaking academic rigour’. Too often, these reports put specific fields of study into a negative light and the factors and levels of misappropriation are not revealed.

One area that much has been written about and that has received negative publicity is the Master of Engineering, students from this field are regularly accused of plagiarism (Duff, Rogers, & Harris, 2006) (Eckel, 2010) (Isoc, 2014). One reason attributed to the rise in academic misconduct is the ‘influx of foreign students into engineering fields’ (Brogan and Brogan cited in Pecorari, 2003 p. 318). The students enrolling to study a Master of Engineering are usually non-native speakers of English who may not have the same socio and cultural understanding of use and acknowledgement of sources. This action research project explores methods of raising the awareness of students of the nuances of writing to avoid academic misconduct.

In the Academic Language and Learning Success Program (ALLSP), this lack of understanding has become apparent in one-on-one student interviews, where students arrive having been accused of plagiarism where it is evident, that they do not have a clear
understanding of the expectations. Although, at Charles Darwin University (CDU), students are
given information pertaining to academic integrity during the Orientation Week and course
guides have information on plagiarism and students are made aware from the onset that they
are required to use references, the actual intricacies of what constitutes academic misconduct is
never fully understood. As a result, students believe that haphazardly adding a reference to the
end of a sentence will protect them from the punitive consequences of plagiarism.

1.1 Background

In October 2014, the coordinator of Master of Engineering approached ALLSP to enquire
about a collaborative project between ALLSP, the library and engineering to improve the literacy
of the post-graduate engineering students. The student cohort enrolled in the course was
international with a various cultures and a diverse range of academic literacies. The coordinator
had identified that although students had references, they were often copying the information
*ad verbatim* from texts, using patch-writing or using references that were not considered
academically appropriate. The aim of the collaborative program was not to highlight the
punitive aspect, but to create a climate of involvement and interest rather than detection and
punishment and to teach the students skills of summarising and paraphrasing to help overcome
the problems detected (CSHE, 2014).

A meeting was arranged with the coordinator to discuss the requirements the
engineering department had to improve the literacy of their students. Developing academic
literacy to diminish academic misconduct is part of the ALLSP’s duty, however, as engineering is
mathematics and my expertise is in language, there was concern that the genre of writing
required would be too technical and that we would not be of much assistance. The coordinator
made it clear however, that although the students have mathematical ability; they are battling
with the communication aspects which are an assessable component of the course. During the
meeting, it was discussed that to improve the academic literacy, at least two workshops would
need to be developed with specific materials for four different engineering streams. These
workshops would firstly focus on plagiarism, and secondly on writing. In addition to the new
material, two separate quizzes were required to test the understanding that the students had
developed of academic misconduct. One, an online quiz which would be compulsory and the
other could be paper based. At this stage ALLSP had also agreed to deliver embedded
workshops into many other courses, and we faced a severe crisis in staffing. A concern was the
workload would be unmanageable.
The first response to the request was that this could not be done as ALLSP does not have the expertise in this field; however, this was an area which would offer an opportunity to develop and contribute to both my personal and professional growth. As this mode of instruction with tailor-made materials in each of the streams of engineering would allow the students to develop their skills in the context of their own studies. It has been shown that the inclusion of literacy support in a classroom within a professional context, with a combined input of the professional staff and literacy specialist, improves the motivation of students (Skinner & Mort, 2009). Studies have also indicated that once students are made aware of the requirements of academic scholarship in the Australian context, they are less likely to plagiarise (Duff, Rogers, & Harris, 2006). As this project was so closely linked to the work we undertake daily in the department, it was a way of designing and developing material that would be relevant to a cohort of students who had an explicit need to improve their academic literacy. An agreement was reached and a journey of intense critical reflection on teaching and learning began.

1.2 Purpose

The purpose of undertaking the workshops was to investigate if tailor-made literacy programs designed by the Academic Language and Learning Success Program in collaboration with the coordinator of engineering would improve the standard of writing and decrease the academic misconduct that appeared to be culturally embedded in the students’ theses submitted for the Master of Engineering course at Charles Darwin University. This literacy program has been designed with the goal of improving student experience and outcomes to improve the scholarship of students.

This action research is a reflection on the effectiveness of the development and delivery of workshops to embed literacy in Master of Engineering. This is action research project uses the cyclic model of planning, acting, reflecting, revising which will help to enhance the understanding of my practice and to effect change and improvement in the delivery and design of the workshops to with the intention of improving the learning of the students.

2. Literature Review

Numerous studies have shown that students entering a Masters of Engineering degree often do not have an adequate standard of western academic literacy and although the mechanics of citation and referencing are highlighted, these are not adequate to help students to gain understanding of the conventions of writing a thesis. Previous researchers have
discussed developing a series of workshops to embed literacy. These usually involve library staff who are able to assist with searching for information and referencing guidelines, there is limited information on academic advisors assisting with developing courses to diminish misconduct through teaching writing skills in engineering. The literature on the studies found will be reviewed to understand how the development has diminished plagiarism and improved writing; it will then look at how action research can improve the understanding of teaching to improve the situation and the practice.

2.1 Embedding academic literacy in engineering to diminish academic misconduct

A growing body of work has reflected that students often do not understand the full extent of what constitutes academic misconduct as there is often a cultural dichotomy causing confusion. Inappropriate use of sources is a growing phenomenon affecting all universities (Pecorari, 2003). Duff, Rogers and Harris (2006) believe that plagiarism is often unintentional and caused by students not being familiar with the way western universities attribute knowledge. This echoes Pennycook’s (1996) observation that plagiarism needs to be understood within the relationship on learning literacy and cultural differences. In addition, the complexity of plagiarism should be considered form a cross cultural perspective with perspectives from both sociocultural and psychological areas. Therefore, by using these perspectives, the writing conventions and policies around academic misconduct need to be addressed within a specific context and assist students to adjust to writing and understanding misappropriation of sources in their specific subjects (Gu & Brooks, 2008). One way is to make students aware of the norms of their own academic community (Pecorari, 2003). A University of South Australia study embedded six workshops on referencing, referencing styles and western academic scholarship in a Master of Engineering course where a large percentage of students had failed due to plagiarism. The study was over three years where engineering and library services collaborated. The result was that there was a significant reduction (from 50% to 5%) in the instances of failure due to plagiarism (Duff, Rogers, & Harris, 2006).

2.2 Embedding academic literacy to improve writing

Academic writing is a social practice and each discipline has a certain set academic conventions that need to be adhered to. An academic literacy approach argues that the learning of academic literacy should be fully integrated into courses either by subject specialists or English Academic Purposes (EAP) specialist (Hocking & Fieldhouse, 2011). An embedded
approach was adopted at the University of New South Wales where the engineering faculty worked with The Learning Centre to give students who were marginally failing discipline specific out-of-program literacy support in an electrical engineering program. Over the five years sixty-five students completed seven weeks of activities and the result was that they all improved enough to pass the course (Skinner & Mort, 2009). It is shown that teaching students to paraphrase, and summarise correctly in their discipline will assist students with their writing. As students are often “unfamiliar with the ways of thinking speaking, and writing associated within their specific subject areas” they often copy large chunks of writing and patch these into an assignment without integrating them or giving them their own voice (Abasi & Graves, 2008). Gu and Brooks (2008) interviewed students who revealed that engineering students are often confused by the appropriate way of paraphrasing other people’s work to support their own ideas.

2.3 Action research into improving student outcomes

Action research is a valid research approach that allows teaching practitioners to conduct an enquiry into their own teaching to develop their practice and allow for improved student learning. John Dewy recognised educators as being pivotal in their position to enact change. He posited that educators should test ideas and then action the emerging ideas and supported the notion that educators need to be reflective and make independent pedagogical judgements to integrate and examine their practice (Efron & Ravid, 2013). These practices are the primary route to understanding the fundamentals of action research and how these need to change practice (Mc Taggart, n.d.). In education action research is a way of investigating own teaching and student learning both inside and outside the class and is a way of reflecting on your own practice or intentional study of one’s own practice (Dana, 2013). Carr and Kemmis view action research as an integral part of critical professional development (Koshy, 2010).

3. Theoretical Framework

The theoretical framework for is underpinned by the idea that students who are enrolled in the Master of Engineering course are required to write an academic paper. As writing is a social practice this study is a sociocultural perspective that focusses on the situational and distributional nature of learning within a community of practice (Abasi & Graves, 2008). The approach to the workshops is constructivist as knowledge is actively constructed by the learner through social practices by interacting with language and knowledge in their own discipline leading to active deeper learning negotiating meaning and sharing practices (Nie & Lau, 2010).
The action research is based on The action research spiral (figure 1) proposed by Kemmis and McTaggart, where each section of data links to the whole in other words, each phenomenon is visited at a higher level each time with the objective of enhancing understanding of the issue and moving towards improvement. The process is planned, acted on and observed then reflected and the plan revised allowing for a fluid, open and responsive research project (Koshy, 2010).

The entire research project is a critical reflection as it is looking at each issue, asking questions of myself, raising problems, delivering and evaluating the outcome. Critical reflection is defined by Leistyna et al. as ‘being able to understand, analyse, pose questions, and affect and effect the socio-political label and economic realities that shape lives’ (Holly, Arhar, & Kasten, 2009). Donald Schön posits that people reflect on their practice in action that is while we are doing things, we think about them and make decisions about what we are going to say next. But we also reflect on the action, when we think about what has happened in our teaching and we consider what we can do to improve or do differently in subsequent workshops (Shaw, 2015). This critical reflection in action and on action will be valid to testing of the workshops are improving the students outcomes and then reflecting on news ways of designing and delivering the workshops to ensure my teaching practice improves and the objectives of the workshops are met.

![The action research spiral](image)

**Figure 1** The action research spiral (Koshy, 2010)

4. Methodology

Determining the methodology used was part of the reflective process as there were so many methods that could be used and questions that needed answers. For example, where do I start? What methods are best for my study? An action research approach was chosen in this
study as such it is not divided into qualitative or quantitative as the complexities of teaching may produce both types (Efron & Ravid, 2013). The approach used is based on reflexivity as the researcher is scrutinizing her own research experience, decision and interpretations in ways that bring the researcher into the process and allows the reader to decide what assumptions influence the enquiry (Charmaz, 2006). The advantages of using an action research methodology are numerous, as the research is set within a specific context, the researcher is a participant, there is continuous evaluation and modification and this is a way of bringing the research story to life (Koshy, 2010).

Firstly, to undertake the designing of the workshops for the Master of Engineering course, the problem encountered with the students needed to be identified. An in-depth, unstructured interview was conducted with the unit coordinator who discussed the general problems they had encountered with the cohort of engineering students in the past. As unstructured interviews are informal yet purposeful conversations, the conversation progressed naturally on its own (Efron & Ravid, 2013). The problem was identified as being culturally and socially situated with students not understanding the expectations of scholarship at Charles Darwin University and not having the necessary literacy skills to undertake the writing of their theses. The cohort of students is twelve international students from different streams of engineering. A detailed literature research into the problem was undertaken to determine how the problem was addressed at other universities. Further informal meetings were arranged to discuss the design and delivery.

The data was collected using multi-methods to ensure a holistic approach to the research was undertaken. During the unstructured interviews, detailed notes were taken to keep a record of exchange and to highlight important information that was referred back to during the semester to revisit the goals and to see if they were being achieved.

To gain an understanding of the level of writing and to determine the types of problems encountered, personal documents in the form of the student’s literature reviews were received. This information is valuable to attain to corroborate or expand the knowledge on the subject (Efron & Ravid, 2013). To find a pattern that could be improved, the literature reviews were manually coded (Grbich, 2015). Once a pattern was established on all the literature reviews, the writing course was designed.

During the whole delivery, participant observation was taking place. As the teacher and researcher, during class I observed the students in their interaction with me, their work and each other. During this time, I looked; listened asked and recorded what I had seen to obtain data
that could help improve the next delivery. Observations are designed to generate data that will highlight issues as they arise in the class setting (Efron & Ravid, 2013).

To gauge the student’s attitude to the teaching and content, a survey was designed using Survey Monkey. The survey is an online and anonymous to allow to students freedom to express their opinions. The questions were usually short using a Likert scale to determine satisfaction. There was only one open-ended question which required a fuller response.

To keep a record of the process and to help reflect, and analyse the process, field notes and documents have been kept to determine the emerging themes that require improvement from both my own, the coordinator’s and the students’ perspectives.

5. Timeframe

<table>
<thead>
<tr>
<th>Week</th>
<th>Action</th>
<th>Review</th>
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<tbody>
<tr>
<td>November 2014</td>
<td>Unstructured interview with Mirjam Jonkman to determine problems</td>
<td></td>
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<tr>
<td>First 3 weeks summer</td>
<td>Read literature on engineering and how to solve problems with academic literacy</td>
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<tr>
<td>semester</td>
<td></td>
<td></td>
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<tr>
<td>Week 4 – week 8</td>
<td>Design the workshops</td>
<td></td>
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<tr>
<td>summer semester</td>
<td>Develop material for each stream of engineering</td>
<td></td>
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<tr>
<td></td>
<td>Semi-structured interview to determine if the workshops are in line with her ideas</td>
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<tr>
<td>Week 9-10 Summer</td>
<td>Develop online quizzes to be used as a compulsory component of the course</td>
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</tr>
<tr>
<td>Semester</td>
<td>Meet with Mirjam Jonkman to determine if the quizzes are correct</td>
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</tr>
<tr>
<td>Week 11-12 Summer</td>
<td>Continue developing material</td>
<td></td>
</tr>
<tr>
<td>Semester</td>
<td>(also design deliver and develop course for International academic preparatory program)</td>
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</tr>
<tr>
<td>Week 1 Semester 1</td>
<td>Start action research and reflection on design of workshop</td>
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<tr>
<td>Week 2 Semester 1</td>
<td>Deliver first workshop on plagiarism</td>
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<td></td>
<td>Get students to complete survey</td>
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<tr>
<td></td>
<td>Arrange a meeting with coordinator to get</td>
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</tr>
<tr>
<td>Week 3</td>
<td>Semester 1</td>
<td>Feedback on the workshop</td>
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</tr>
<tr>
<td>Week 4</td>
<td>Semester 1</td>
<td>Receive Literature reviews and code them to find emerging patterns</td>
</tr>
<tr>
<td>Week 5</td>
<td>Semester 1</td>
<td>Develop next workshop on writing (reflect on plagiarism workshop what information do students need)</td>
</tr>
<tr>
<td>Week 5</td>
<td>Semester 1</td>
<td>Deliver workshop on writing using the patterns from coded literature reviews Get students to complete survey Meet with coordinator to get feedback</td>
</tr>
<tr>
<td>Week 6 – 8</td>
<td></td>
<td>On leave</td>
</tr>
<tr>
<td>Week 9</td>
<td>Semester 1</td>
<td>Follow up and get feedback Reflect and improve Arrange further workshops to determine if writing has changed</td>
</tr>
<tr>
<td>Week 11</td>
<td>Semester 1</td>
<td>Deliver writing workshops to students Reflect on change to my methods and workshops</td>
</tr>
</tbody>
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6. Data Collection

For this action research project, data needed to be collected to assess the teaching practices and student writing levels. Firstly, the data would help establish if the tailor made workshops designed in the different streams of the Master of Engineering workshops would result in a greater understanding of academic misconduct and as a consequence, improvement in the quality of the students’ theses. To determine the students existing understanding of academic misconduct, a paper based pre-quiz (appendix 1) was developed with different examples of writing, some that were academic misconduct and some that were acceptable forms of writing. The students completed them alone and then after the workshop highlighting the various forms of misconduct, the students would be given the opportunity to review their answers and have a group discussion.

The aim of the workshop was not to teach referencing or researching as this had been covered by the library in week 1, the aim was to make the students aware that plagiarism is not only about referencing, but that there are unacceptable ways of using the sources when paraphrasing, quoting or summarising. One impetus for this is that non-native speakers of English often do not know that it is not acceptable to copy from a source or to paraphrase using synonym replacement (Pecorari, 2003). To gain data on the students understanding prior to the
workshop, a quiz was given to students to complete and then a compulsory post-test was given to moderate whether the outcome was achieved. The compulsory post-test was an online quiz developed by the ALLSP lecturer but given to coordinator to convert to the unit’s Learnline site (appendix 2). This quiz tested the concepts taught in the workshops as well information on the Charles Darwin University’s policy on academic misconduct.

To gain data of the students’ writing prior to developing the second workshop, a sample of the students’ writing in the form of their literature review, that had been written the previous semester, was obtained. This was manually coded to identify patterns of problems in the writing across the whole cohort. Coding is a valuable way of managing data and breaking it into a manageable format from which to draw conclusion (Koshy, 2010). This data would give insight so that the workshop could be targeted to address the specific problems. Once coded, excel was used to obtain a list of the most common problems and these were addressed.

Another purpose of the data collection is evaluation to gauge how the students’ perceived the workshops. In order to do this the students received the link to a Survey Monkey survey at the end of each workshop. The survey was generic across all the workshops and was designed to be a quick gauge of their opinion. In most instances on the survey, a rating scale was used as this provides for more scope on the level of agreement or disagreement to the workshop. A limitation of the surveys was not an adequate gauge of student learning, they were more of a gauge of them using more of the ALLSP services. The survey will need to be re-developed to reflect the usefulness of certain areas of the program.

7. Planning

The planning for the first workshop had started four months before the actual workshop in week 2. As engineering is a field that has I have not ventured into as my mathematical skills exclude me from becoming an engineer, it was with trepidation that the project was approached. The four areas that required ‘tailor-made’ workshops were:

- Civil engineering (structural)
- Mechanical engineering
- IT software
- Biomedical engineering

The program was planned using a constructivist approach and to encourage students to move to deeper learning. The plan went form students gaining the tools to understand the conventions required at Charles Darwin University through to using the information and synthesising the knowledge gained into their final writing assessment due in week 13.
8. **Action research cycle for workshop 1**

8.1 **Action: workshop 1**

To understand the genres and language, the coordinator had asked the lecturers of the four streams to send me journal articles and examples of writing to allow me to develop worksheets with examples from the different articles to teach the skills of quoting, paraphrasing and summarising. Reading materials in the discipline is an important aspect of this workshop and research design as it provides the developer with understanding of the context of the class (Abasi & Graves, 2008). Embedded literacy studies show that it is important to explore academic literacy within the discipline. As Paltridge states ‘students need knowledge of the culture, circumstances, purpose and motives that prevail in academic settings’ (cited in Hocking & Fieldhouse, 2011, p. 40). As previous studies had shown, students did not need to learn referencing in these workshops (Duff, Rogers, & Harris, 2006), they were developed to make the scholarship expectations at Charles Darwin University explicit and to help students integrate their own voice into their writing. This was done by designing and developing worksheets using the specific discipline language to scaffold the students into the writing and using correct appropriation of sources. This is based on the Vygotskian method of scaffolding students to help them construct knowledge.

In addition to the worksheets, the quizzes needed to be developed that would allow students to become aware of the policies at CDU regarding plagiarism. One quiz was used to
assess the students’ existing knowledge of plagiarism and the other to assess their understanding after the workshop. In addition to the worksheets and quizzes, a plagiarism-writing task (appendix 4) was designed to test whether the students were able to apply the concepts taught.

8.2 Reflection and evaluation of workshop 1

An important part of action research is to practice self-reflexivity where personal experience, biases and subjective judgements that shape our own understanding of the situation are considered (Efron & Ravid, 2013). The time that went into planning the workshops was considerable. To understand the genres and the language, journal articles from engineering were read. Once the reading was complete, numerous activities and worksheets were developed to ensure the students’ knowledge and understanding was tested. As the workshop was based on a constructivist approach, building on their existing knowledge and then adding knowledge, the workshop were planned to move from testing existing knowledge to acquiring new knowledge.

The workshop was planned for 2 ½ to 3 hours on a Monday afternoon. Attendance was compulsory and all students attended the workshop. The lecture started a bit late as the previous class had not finished and there were some technical difficulties. This caused me to fluster a bit as so much planning had been involved that a contingency plan had not been considered. Despite the initial problems, the students were all very involved in every activity and appeared amazed at the different forms academic dishonesty can take. The coordinator stayed for most of the lecture and if I had known, I would have used it as an opportunity to have an observation of my teaching and to get feedback from her. As this could have given a ‘detachment, impartiality and objectivity’ that could have helped immerse me in the social life of engineering and given a valuable way of validating my knowledge and belief that would ‘make progress towards effective changes in practice’ (Mc Taggart, n.d., p. 9).

The survey monkey results (figure 3) from this workshop indicated that 11 of the 12 students completed the survey and those students found the workshop very beneficial. This sentiment was echoed in a meeting with the coordinator after the fact; she too said the students had commented that the workshop was very good to help them identify the different forms of academic misconduct as well as gave them strategies to avoid it. According to the coordinator, the compulsory post-test also revealed that the students had become aware of the different forms of plagiarism and that there was an improved understanding.
However, despite the students commenting that the session was valuable, the over-planning had a consequence of not leaving enough time for students to practice the skills. As, although the students had been made aware of plagiarism and this had been revealed in the post-test, I had wanted them to demonstrate that they understood it by completing a writing exercise on the concepts demonstrated and taught, there was not enough time factored in for this. Another area where the workshop did not meet the desired outcome was that as too many activities were planned, there was no time for ‘questions and answers’ and although the workshop ran for longer than allocated the end was rushed and formative feedback could not be given to the students. This detracted from the workshop as formative assessment provides an opportunity to reflect and transfer the new awareness to their own writing (Skinner & Mort, 2009). Whilst the students and the lecturer had delivered praises for the workshop, with many years experience in working with international students, I did not believe that the one workshop could help them overcome the difficulties of applying the skills to their writing. Even though when comparing the pre- and post-tests the students had become aware of the policy surrounding plagiarism and the methods they could employ to avoid it.

9 Action research cycle for workshop 2

9.1 Action: Workshop 2

The second workshop was aimed at improving the writing of the students, to help them to avoid academic misconduct and to give voice to their own writing while using appropriate sources. In the planning phase, the coordinator of engineering had sent through literature reviews that had
been written prior to undertaking the present semester. These literature reviews were analysed and coded to identify a pattern of the common problems students had with their writing. This was an important aspect of the workshops as an understanding of the students experience was ascertained.

The process of analysing the writing gave insight into their understanding of referencing, how they applied critical thinking to their writing. Another aspect was to ensure they understood how their literature review related to their studies. Gathering this information allowed me to arrive at a documented narrative to understand the position of the students and the issues that emerged (Abasi & Graves, 2008).

When the literature reviews were analysed (figure 4). The data indicated that the students did not understand how to write an introduction, use critical thinking, show purpose or relevance. From the writing, it was also obvious that they had been using copying without paraphrasing, summarising or quoting. The chunks of text that the students used removed their own voice, and the change in language and sentence structure made the papers difficult to read. The analysis also revealed that although they were referencing the references were often not academic or the way they were referencing or using the sources constituted misappropriation. The data revealed that the students were finding it difficult to source information.

![Literature Review Coding](image)

**Figure 4** Coded problems identified in student writing

This was a concern as when writing a thesis, the students needed to draw on previous literature to narrow their topic and find a gap in the current research. After consultation with the liaison librarian for engineering, she agreed to come in to the workshop with me, firstly to help the students with search terms and databases and then she said she would remain to help with students who were still battling.
The lecture started on time and all twelve students attended the lecture. The emphasis on this was to make the students aware of writing with purpose and using the information, they have found to support their arguments. The first part of the workshop focused on revising the quoting, paraphrasing and summarising techniques from workshop 1. Then the librarian demonstrated searching for information. Followed by activities by the ALLSP lecturer where the students tested their titles and hypothesis to see if the literature matched their purpose or had relevance.

9.2 Reflection and evaluation of workshop 2

During the workshops, it appeared obvious that the students were finding it difficult to articulate their thoughts and arguments. Once again, there was not enough time to get through all the activities that were planned. As this was a writing clinic I had hope to have at least 45 minutes getting students to write paragraphs to help them use the resources to demonstrate the problems identified in their writing like purpose, relevance, critical thinking, coherence and unity. The time was spent helping to narrow their often very broad research topic and formulate hypotheses or research questions.

Once again, the students were required to complete an evaluation. The Survey Monkey link was given and ten of the twelve students completed the survey (figure 5). Once again, the results were extremely positive. All the students strongly agreeing or agreeing that the workshops were helpful. In addition to the Survey Monkey, the librarian was also asked to give feedback on the workshop, as was the coordinator who stayed for the whole workshop. Neither had any criticism as they felt the students were given opportunity to develop their writing.

![Workshop 2 Student Evaluation](image)

**Figure 5** Student feedback workshop 2
However, my concern was that these two workshops were not sufficient to really change the way students approach their writing. To counteract the shortage of time and the concern of needing additional support, the students were invited to use the ALLSP individual consultation service where they could get 50 minutes of help with their own problem and individual formative feedback could be given. In addition, another workshop that was not part of the original plan was offered. This could be held towards the end of semester where the students could bring their writing for an editing and proofreading clinic. In this clinic, students do peer review with the aim of assisting each other to identify areas where improvement could be affected.

10. Results of the action research

The results of the influence the workshops have had on the student outcomes will only be determined once the Master Theses have been assessed. However, the undertaking of the action research project has been rewarding. This project was to reflect on the process of developing a program for the Master of Engineering Thesis students to help them improve their writing and diminish academic misconduct. It has turned into a journey of personal reflection on ways to improve my own delivery and teaching. My nature to over-plan and ensure that I have enough activities to fill more than the hours allocated has resulted in not allowing students the opportunity to discover and explore the concepts.

My opinion is that the workshops have improved the students understanding of the writing conventions expected of them and that the tailor-made workshops embedded into the engineering course are extremely valuable. However, the students’ circumstances and backgrounds do affect the effort the students are able to put into their writing. The students have shown that there is a need to make them aware of the different forms of academic misconduct, one comment on the Survey Monkey was “we need more of these workshops” another was “we need more time”. Both these comments made me aware of the need to have planned from the beginning for more workshops with more time for writing.

Another positive is working in collaboration with the coordinator of engineering and the library liaison to embed the engineering literacies with language around the specific disciplines. This has been a collective effort that has improved the experience for the students and helped me improve my practice by allowing me to be aware of the how my teaching and time-management can impact the outcomes of the lesson. Therefore, the project has improved my teaching and development practices.

This has been a worthwhile project and it would be worthwhile to publish the action research into a peer-reviewed journal. In addition, once the student results have been finalised, it
would be valuable to disseminate this information in a university wide forum like ‘food for thought’ to encourage other course to have ‘tailor-made’ workshops to embed the literacy practices of their discipline.

11. Future Action

- Plan for more workshops
- Have more time for students to work during class to allow for formative feedback
- Design the Surveys with open-ended questions relating to the content
- Allow for time for group-work
References


Appendix 1

**Plagiarism**

Look at the following situations and identify which are plagiarism.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Yes/no</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Copying a paragraph, changing a few words and giving a reference.</td>
<td></td>
</tr>
<tr>
<td>2. Copying and pasting a short text from a website with no references.</td>
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<tr>
<td>3. Taking a paragraph from another student’s essay without references.</td>
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<tr>
<td>4. Taking a graph from a textbook, and giving the source.</td>
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<tr>
<td>5. Taking quotations from a source, giving a citation but not using quotation marks.</td>
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<tr>
<td>6. Using an idea that you think of a general knowledge, e.g. The timing of Great Depression in Australia was determined by the collapse of the New York Stock Exchange, without references.</td>
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<tr>
<td>7. Using a paragraph, you wrote and had marked the previous semester, without referencing.</td>
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<tr>
<td>8. Using results from your own research. E.g. from a survey, without references.</td>
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<tr>
<td>9. Discussing an essay topic with a group of classmates and using some of their ideas as your own work.</td>
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<tr>
<td>10. Referencing some information but spelling the author’s name incorrectly.</td>
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Appendix 2

Avoiding plagiarism quiz – Engineering

Question 1

According to the Charles Darwin University governance policy; ‘staff and students may use the information and ideas expressed by others, but this use must be identified by appropriate referencing.’ Which of the following are subject to plagiarism (circle all that apply)?

1. Written work, such as essays, books, report, theses, journal articles and computer programs, whether published or unpublished
2. All research material such as data collected by yourself, results you have drawn or conclusions you have made
3. Non word-based material such as musical scores, mathematical formulae, audio-visual material, art and industrial plans
4. All of the above

Answer: 1 & 3

Question 2

Plagiarism is a serious breach of academic honesty. Which of the following constitute plagiarism (circle all that apply)?

1. Copying whole paragraphs, sentences or significant parts of a sentence without quoting correctly and a reference
2. Using ideas, concepts, research results, statistics, computer programs, designs, videos, pictures, texts without acknowledging the source
3. Using common knowledge or your own ideas
4. Submitting some or all of another students work
5. Referencing correctly work written by you and submitting it for marks in different assignments or subjects
6. Using a substantial proportion of work copied from other sources with references

Answer: 1,2,4, 5 & 6

Question 3

Universities expect students to act honestly and ethically and with integrity when dealing with the university and other students. Which of the following situations are acceptable when working with other students?

1. You can discuss the question with other students to decide what it means and how to answer it
2. You can discuss the position that you want to take and the evidence that supports or opposes your position
3. You can discuss the readings with other students to make sure you understand them
4. You can collude with other students to each work on the different sections of an assignment and then each submit the assignment as your own
5. You can pay or engage other students to write assignments all or some of an assignment for you.
6. You can work together on assignments when instructed by a lecturer or tutor to do so.
7. Contributing little or nothing in a group assignment and receiving the same marks.

Answer: 1, 2, 3 & 6

Question 4

Students often allege that they were not aware of methods to avoid plagiarism. Which of the following are ways that plagiarism can be avoided?

1. Keep detailed notes on where you find information when conducting research.
2. Learn the correct way to reference quotes, paraphrases and summaries.
3. Never use sources.
4. Keep the referencing style guide where you can access it.
5. Use quotes sparingly rather re-write the information without losing the meaning.
6. All of the above.

Answer: 1, 2, 4 & 5

Question 5

Plagiarism according to Charles Darwin University policy is ‘the presentation of work of another without acknowledgement’. The University expects a high level of professional conduct and therefore, all forms of academic dishonesty are not accepted or permitted. Detection of plagiarism is treated extremely seriously. Why do you think Charles Darwin University takes this seriously?

1. Plagiarism is intellectual fraud.
2. Assessment encourages scholarship. Academic dishonesty in the form of plagiarism does not show scholarship.
3. Acknowledgment of sources gives credit to the originator of the idea.
4. The university is discredited when plagiarism occurs.
5. All of the above.

Answer: All of the above.