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Engaging students with self-directed development of academic skills through a flipped classroom approach

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Inspire Conference paper

Abstract

The generic skills of critical analysis, academic writing and referencing are essential for successful student progression in Higher Education. Extra-curricular programmes of academic skills seminars can offer limited opportunity to evaluate the extent to which students have understood and are able to apply the key concepts to their academic work.

To provide a more student-focused active learning environment a 'flipped-classroom' approach was introduced for 'Introduction to Referencing' seminars. Two short screencasts with follow up questions were used as pre-seminar preparatory resources to deliver the essential principles of referencing. The seminar time was then utilised for a series of student-centred activities. These were developed to evaluate students understanding of the essential aspects of referencing, foster student engagement with the learning process and promote peer-support.

Despite limited engagement of some students with the pre-sessional materials, all students attending the seminars actively participated in the activities provided. These generated a greater degree of discussion and there was evidence of deeper learning with students applying generic concepts to specific contexts of their academic work.

Overall, observations form the seminars and the positive reactions of the students suggests that the 'flipped classroom' provides the opportunity for more effective student-focused support and development of independent learning strategies.

Introduction and rationale

As an Academic Skills Tutor in the School of Human & Health Sciences my role is to support students in becoming autonomous in their studies and learning through the development of effective academic study skills. Although some support is embedded within modules, this is variable across the School and generally students need to be proactive in seeking help through extra-curricular avenues. This is currently provided through individual face-to-face support sessions, provision of a range of resources and a seminar series focused on key academic skills.

The focus of this paper will be the support offered through the seminar series; these are provided weekly in the first term and are available to all students within the School. Students are informed of the seminars through weekly emails and are required to book onto the sessions. Feedback from students indicates that those who attend the seminars find them useful in developing the skills required for effective study. However, the broad spectrum of students, in terms of both the range of subject specificity and the level of HE study, provides a challenge for effective teaching and learning within these sessions. The seminars are limited to fifty minutes and have predominantly taken an 'information – transmission' format to outline the essential concepts of topics such as academic writing, referencing and critical thinking. Whilst this approach provides students with an insight into the essential concepts of the skills required for effective academic study, it offers limited opportunity for students' personal development through application of the concepts to their academic work (Bligh, 2000). The didactic approach can also foster a passive role for students in the sessions resulting in a surface or strategic learning approach (Ramsden, 2003) rather than promoting a more active, self-directed approach for deeper learning and development of the skills required for independent learning and thinking. Additionally, from a tutor's perspective, the traditional lecture format provides limited opportunity to determine the extent of understanding students gained within the session. To make the seminars more interactive, short activities and peer group discussions have been previously introduced with limited success. The Inspire module has enabled me to explore and pilot an alternative approach for these seminars.

When considering alternative formats for the academic skills seminars, my main goals were to provide a more active student-centred approach that would encourage greater engagement and reflection to allow a deeper learning experience. It was also important that the format of the session allowed opportunities for the students to apply the concepts

with the security of focused support. With the key principles for effective teaching in mind (Ramsden, 2003), it was important that the sessions not only provided a clear understanding of the essential principles of the study skills being developed, but were also focused to the individual students' needs, were intellectually challenging and engaging for all students and offered opportunities to promote peer support. As the time for each seminar was limited (50 minutes), it was important to consider how I could utilise as much of the session as possible for facilitated active learning. This led me to the concept of the 'flipped classroom' in which essential theoretical perspectives are presented to the students prior to the session, generally in an online format, followed by an instructor-facilitated session which utilises active learning strategies for application of the concepts (EDUCAUSE, 2012).

Literature review and theoretical framework

The traditional lecture is often the main format adopted within higher education particularly for large cohorts. Whilst this instructivist approach can be effective at delivering the knowledge students are expected remember and understand, the depth of learning that take place can be variable and difficult to determine. As identified by Biggs and Tang (2011) a surface approach to learning may be adopted with students focusing on essential elements required for assessment rather than obtaining a deeper understanding of the underpinning concepts and principles. Additionally, when applied to the development of generic 'academic skills', simply instructing on the required approaches is not sufficient (Bligh, 2000). Students also require support to transform this knowledge and construct their own understanding in a way which enables them to in order to apply it successfully to their academic work.

In contrast to the passive nature of the traditional lecture format, 'active learning' has been shown to promote deeper learning practices and to aid in the development of critical thinking and complex reasoning skills essential within higher education (Prince, 2004). The key elements of active learning methods are enhanced student engagement with the learning process achieved through inclusion of meaningful student activities which support the content delivered. These activities may range from simple individual tasks within a lecture to more extensive collaborative, co-operative or problem-based learning tasks. This two phase constructivist approach to learning supports the work of Vygotsky (1978) who

suggested that learning can be facilitated through the provision of 'scaffolding' provided by the instructor and through discussions or communications with peers to promote deeper understanding. Active learning approaches adopted within higher education have typically combined the traditional lecture with post-lecture activities designed to stimulate higher order thinking and promote student engagement. However, whilst this approach can provide the opportunity for immediate feedback on understanding and progress to both the student and the instructor, it may only engage motivated students with less motivated students not completing post-lecture activities or struggling with these without additional support.

With the developments in computer-based technologies an alternative model has emerged based on classroom practice (Bergmann and Sams, 2012). At its simplest the 'flipped' or 'inverted' classroom is defined as "events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa" (Lage, Platt & Treglia, 2000, p32). Although this definition portrays the basic rationale, it may simply result in a re-ordering of events rather than a move towards increasing student engagement (Hamdan, McKnight, McKnight & Arfstrom, 2013). A more definitive definition of the 'flipped learning' approach is provided by Yarbro, Arfstrom, McKnight and McKnight (2014, p5):

> …a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as the apply concepts and engage creatively in subject matter.

This 'flipped learning' approach therefore represents a fusion of learning theories utilising initial instructional methods based on behaviourist principles which are accessed asynchronously supplemented with constructivist student-focused group activities with the instructor acting as facilitator (Bishop & Verleger, 2013). It is becoming increasingly popular in higher education where blended learning approaches employing an array of technological resources have been facilitated across a range of disciplines to maintain student engagement and increase student satisfaction (O'Flaherty & Philips, 2015).

Although all teaching approaches utilising an active-learning constructivist approach can result in higher learner gains (Jensen, Kummer & Godoy, 2015), the literature does identify several advantages to the 'flipped learning' approach. Provision of the initial conceptual information as preparatory material provides a more flexible and differentiated format for learning. Students are able to work through the required information at their own pace,

focusing on or re-visiting the aspects that are most relevant to their current understanding. Abeysekera and Dawson (2015) suggest that this flexibility for self-paced progress can aid learning through improving both student motivation and helping to manage cognitive load. Where multimedia formats are used for the preparatory material, consideration of the format of these may also augment reductions in cognitive load (Mayer, 2009). Inclusion of pre-class assessment of the preparatory material through short online quizzes can also provide both the student and the instructor with an immediate assessment of understanding. For the student this can promote greater engagement with the material and further enhance motivation. For the instructor, it enables tailoring of student-focused activities to support common aspects of misunderstanding or difficulty (Abeysekera and Dawson, 2015). The greater focus on student-focused interactive activities within scheduled face-to-face teaching time further contributes to foster student ownership of learning and carefully selected higher-level cognitive activities can be used to promote deeper learning (O'Flaherty & Philips, 2015).

A search of the literature identifies a plethora of studies exploring the 'flipped classroom' approach across a range of subject disciplines. The majority of studies present evidence for enhanced student engagement and a student preference for the 'flipped' method compare to traditional teaching strategies. Whilst there is limited published evidence of the application of this pedagogical approach to the specific area of generic academic skills support, the fundamental principles of 'flipped classrooms' are equally relevant to this aspect of student support. Moving the delivery of the key concepts of academic skills outside formal class will allow face-to-face sessions to be used for more meaningful contact with peers and tutors promoting collaborative learning environments which will foster development of greater critical and independent thought.

Description of the Experimental Session and Critical Discussion

The specific academic skills seminar chosen for the experimental session was 'An Introduction to Referencing'. Academic referencing is a skill that underpins effective academic writing; it is an essential aspect in the assessment criteria for all levels of study and is the focus of concern for many students. The recent change in the University's preferred referencing style has added to this concern and I have found that students tend to focus on the mechanics of referencing rather than developing a firm understanding of the principles that will enable effective application of a range of referencing formats. This

topic therefore appeared to be a logical choice for development of the 'flipped learning' approach.

For successful implementation of the 'flipped classroom' to the 'Introduction to Referencing' seminar I applied the pedagogical principles outlined by Abeysekera & Dawson (2015) to develop two essential elements: pre-sessional preparation material and student-centred learning activities (Figure 1).
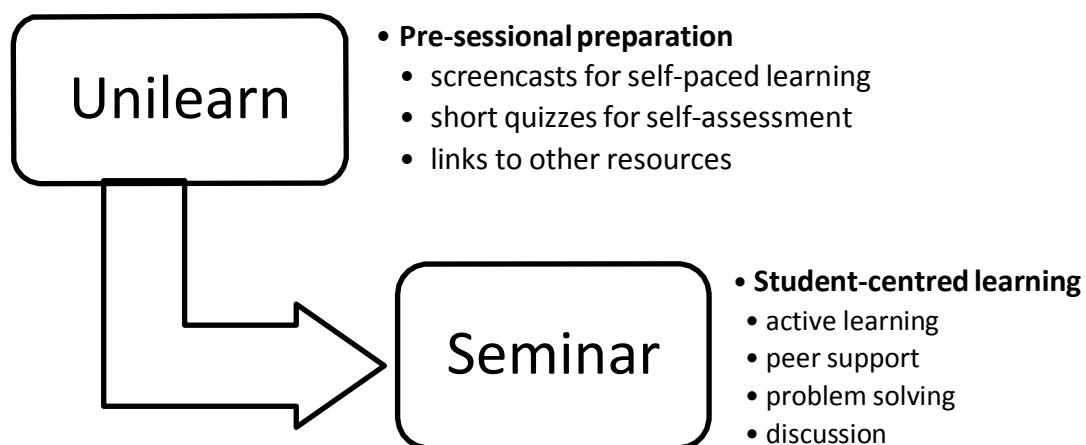
Figure 1. The 'Flipped Classroom' Format for the Experimental session

Pre-sessional preparation

It was essential to initially identify a suitable platform or repository for the pre-sessional information. Ease of access was an important consideration as issues with student motivation and completion of preparatory materials can act as barriers to effective application of the 'flipped learning' approach (Herreid & Schiller, 2013). As the Academic Skills seminars are not linked to any specific module, course or programme of study within the School, a stand-alone resource was required that could be accessed by all students wishing to attend. Student concerns that may arise from introducing new technologies (Talbert, 2014) had to be considered and the ability to update the resources was also an important factor. With these requirements in mind I decided to utilise the University's virtual learning environment, uniLearn; this is familiar to all students, can be accessed both on and off campus, offers a range of functionalities suitable for the development of interactive resources and provides opportunities to identify student engagement with these resources.

I created a new Academic Skills Support resource space within the School of Human & Health Sciences section of uniLearn and incorporated a series of resources for the 'Introduction to Referencing' seminar.

The focus of the self-directed preparatory materials was an overview of the principles and concepts of referencing and an introduction to the APA referencing system. As time for preparation of new materials was limited I decided to modify existing PowerPoint resources in the form of screencasts. This format would be familiar for most students and would provide the opportunity for students to work through the materials at their own pace controlling the amount of information accessed according to their individual requirements. With the points raised by Herreid & Schiller (2013) in mind, two short screencasts were used to provide a structured progression from the principles of referencing to the details of the mechanics of referencing using the APA 6th referencing system. Although there are a wide range of software available for the production of screencasts, I chose to utilise Screencast-O-Matic as it was freely available and I had previous experience of the software. Instructions were provided to guide students through the preparatory material and a short quiz was also included. This provided immediate feedback and enabled students to assess their initial understanding of the principles introduced in the screencasts (Crouch and Mazur, 2001). Additionally, links to sign-post central referencing resources were included.

Students were invited to attend the 'Introduction to Referencing' seminar a week in advance via the standard email used for all seminars. To ensure students engaged with the preparatory materials, details of the new format for the seminar were provided in the email together with instructions for self-enrolment onto the new uniLearn resource. Students can be reluctant to changes, particularly where new methods require pre-sessional preparation (Herreid & Schiller, 2013) and there was evidence of a disparity between the number of students who signed up for the seminar and those who enrolled on the uniLearn resource. This may reflect the 'just-in-time' learning approach reported in previous studies (McLean, Attardi, Faden & Goldszmidt, 2016). To minimise the impact that this could have on the student-centred learning activities planned for the seminars, further e-mail reminders of the pre-sessional preparation were sent to students who did not immediately enroll. The adaptive release function in uniLearn was also used to monitor students' engagement with the preparatory screencasts.

Four key seminar activities were designed to assess students understanding of the concepts introduced in the pre-sessional materials and to stimulate discussion and develop higher order skills of application (Table 1).

Table 1. Outline of the activities for the 'Introduction to Referencing' seminar

Topic	Resource	Format	Purpose
Outline of the session	PowerPoint	Tutor-led (2 min)	• Provide clear learning objectives
Identification of areas of common difficulty	Post-it notes	Individual activity (2min)	• Tailor activities to address specific requirements of the student group
Principles of referencing	Activity 1	Whole group discussion (5 min)	• Consolidation of information from screencast.
What information should be referenced?	Activity 2	Small group discussion using scenarios on cards (5 min + 5min feedback)	• Application of referencing principles to common issues within academic writing • Promote critical thinking
Terminology of referencing	Activity 3	Small group discussion or card sort (5 min)	• Develop appropriate academic terminology • Clarify misconceptions
Format of references	Activity 4	Card-based reference building activity (15 min)	• Develop strategies for • Recognise format of references for different sources • Identify differences between APA and Harvard format
Plenary	PowerPoint	Tutor-led (5 min)	• Summary of key points. • Link to effective note taking • Identification of supporting resources

Following an initial outline of the key learning objectives to identify the focus of the seminar, students were asked to reflect and identify the aspects of referencing they were most worried about and wanted to address within the session. Post-it notes were used to record and share these aspects anonymously. I was pleased to see that despite some initial reservations, all students did participate and the outcomes from the activity reassured students that many of their concerns were shared by other students, promoting cohesiveness within the group. This was particularly important as the seminars are attended by students from a range of courses within the School. Additionally, the activity allowed the session to be tailored to meet the specific requirements of the student group (Abeysekera and Dawson, 2015).

The first activity required students to briefly consider 'Why is referencing is important?' and to share one identified reason with the whole group. Whilst this activity mostly consolidated information from the pre-sessional materials, there was some initial reticence to be the first to 'share'. This may have been due to the student group being drawn from a range of different courses. However, once started, most students engaged and the activity allowed specific queries to be raised and enabled students to view the 'wider picture' of referencing rather than viewing it solely as a requirement for assessment.

In the second activity students evaluated scenarios in pairs and determined whether the information should be referenced if used in an academic text. This 'pair and share' approach was more successful in initiating discussions and sharing decisions with the whole group. The scenarios were selected to reflect common sources of information utilised by students in their academic work and it was encouraging to see students readily relating the generic scenarios to examples which situated the concepts into their own specific discipline. The activity was effective in exploring common misconceptions often seen in students' work and provided the opportunity for instant clarification. One specific scenario that stimulated debate was the concept of 'common knowledge'; this provided a good opportunity for students to think critically about the information they use and to view aspects of their academic work from viewpoints of the reader rather than as the author.

The third activity was included to engage students with correct referencing terminology and so develop their academic vocabulary. Confusion between a 'citation' and a 'reference' and misunderstanding of the difference between a 'reference list' and a 'bibliography' can limit the interpretation of assignment requirements or feedback and so impact on development of referencing skills. I chose to provide alternative formats for this activity; discussion to formulate a definition for the terms or a 'match the definitions' activity. This allowed flexibility to differentiate the activity where necessary so that all students were able to benefit. However, I was pleased that most students attempted to formulate their own definitions promoting consolidation of their understanding and developing the higher order skills of learning (Krathwohl, 2002)

A final card based activity based on the principles of experiential learning (Kolb, 1984) was used to develop students' understanding of the APA reference format for six commonly used sources. I hoped that students would adopt a problem–solving approach using the knowledge gained from the pre-sessional materials to consider the different elements of a reference and identify the appropriate order of the component parts. Despite some initial

uncertainty in what was required, with further instructions students quickly engaged with the task and it was encouraging to see students working collaboratively and discussing areas of uncertainty. I was able to circulate around all the groups and assist students where required and identify any errors. I had provided copies of the Library's 'Quick Guide to Referencing' for reference but it was reassuring to see that students were attempting to build the references without this support. To differentiate the activity, I had ordered the six references according to the degree of complexity so that students progressed from the reference for a book to a more complex example of a chapter in an edited book. Unfortunately, timing was an issue which meant that some students focused only on three common sources of information and did not progress to the more challenging examples. However, despite this I was able to prompt students to consider what strategies they were using as they approached the task. This provide the opportunity for development of problem-solving strategies and deeper level thinking that would not have been possible in the previous format for the seminars (Prince, 2004). One further aspect that was also included effectively in the activity was highlighting differences between Harvard and APA referencing systems. Additional elements were included for some of the references requiring appropriate selection for correct APA referencing format. This provoked some discussion, particularly for students who had used Harvard previously and I felt that it provided a useful format to help students recognise differences between the two referencing systems.

Conclusion

The use of the 'flipped learning' model for the 'Introduction to Referencing' seminar successfully provided the opportunity to develop a more interactive and student-focused learning environment. Although there were some issues with ensuring that all students engaged with the preparatory materials, this did not impact greatly on the ability of students to engage in the range of collaborative exercises utilised in the session. The use of paired and group activities encouraged peer interaction and collaboration to promote a deeper learning than could be achieved though individual activities (Vygotsky,1978) and there was clear evidence of students constructing their own understanding and knowledge which has not been possible previously in a more didactic seminar format. My role became one of a facilitator, assisting students in consolidating their understanding and challenging them to think creatively to extend and apply their knowledge (Biggs & Tang, 2011).

Considering the session from a student perspective, I felt that the format was more engaging. The use of a range of activities maintained interest evidenced by the involvement of all students throughout and the level of discussion. This may also be attributed to the ability of students to self-pace their progress with the activities which helps management of the cognitive load (Abeysekera & Dawson,2015). My ability to circulate during the activities provided a more student-centred approach with students able to obtain immediate answers to their questions. This appeared to increase confidence with all students asking more questions than previously experienced.

Verbal feedback at the end of the seminar also indicated that in line with previous studies (Bishop & Verleger, 2013) students liked the new approach and felt that the activity based approach had allowed them to explore the concepts of referencing more fully and offered direct insights into the application to their academic work. However, as identified by McLean et al. (2016), not all students engaged fully with the pre-sessional preparatory material. This may have been due to the use of self-enrolment on a new resource which students were unfamiliar with rather than reticence in engaging in pre-class preparation. With the development of the resource in uniLearn for a wider range of academic skills support within the School and clearer signposting this may not be an issue in future. However, the level of engagement with pre-sessional materials would need evaluating fully to ensure that the 'flipped learning' approach is utilised to its full potential.

Overall, the use of this experimental session has been beneficial in trialing an alternative approach for the academic skills seminars within the School of Human & Health Sciences. The positive reactions of the students has encouraged me to explore extending the 'flipped classroom' approach to further academic skills sessions. However, this is probably best taken a session at a time due to the amount of preparation time required to identify or design suitable and effective active-learning resources.

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