

Changing the face of academic skills workshops

*The focus on Flipped classroom provides a much more coherent
Abstract form for the paper.*

The flipped approach offers flexibility in the way students learn and was adopted within Learning Development workshops to improve academic skills. Predominately academic skills are taught using passive content however the flipped approach looks to change the emphasis and provide active opportunities to understand taught knowledge. The sessions were delivered alongside asynchronous content to scaffold academic skills and feedforward guidance to inform summative assessment preparation. The objective was to assess the effectiveness of the flipped approach in delivering academic skills. A cohort of 50 first year students completed three face-to-face academic skills sessions together with five asynchronous e-tivities. Each were themed to develop different academic skills using subject specific examples. Attendance data was collected and a survey was used to evaluate the asynchronous content and measure the self-perceived academic confidence levels of students. To measure the success of the flipped approach this data was analysed together with the number of attempts at each e-tivity and the formative and summative grades. Results demonstrated those who attended two or more sessions (57.7% +/- 1.43) had a significantly higher summative score ($p=0.041$) than those who attended 1 or less (51.7% +/- 2.73). The summative grades and the number of attempts at the asynchronous content demonstrated a positive linear relationship for e-tivity 1 to 3. Overall the academic confidence improved in nearly a third of all students for each e-tivity and 17 students (54.8%) stated that they preferred the flipped approach in developing their academic skills. This emphasises that the flipped approach is an effective method to improve summative grades and deliver academic skills.

This is much better and articulate than earlier drafts; a concise summary of what you

Keywords: flipped classroom; active learning; academic skills; asynchronous

will be covering

* 1 -

Introduction

Academic skills or study skills includes a range of different topics from managing self (Price and Maier, 2007, p.23), referencing (Hitch *et al.*, 2012, p.33), to writing and thinking critically (Gunn *et al.*, 2011, p.1). The development of these skills is fundamental for students to succeed in higher education (Blythman and Orr, 2002 p.237; MacVaughan *et al.*, 2014, p.756). Thus, ensuring that academic skills are

incorporated into modules is vital (Hill and Tinker, 2018 p.12) and will improve not clear awareness of the expectations (Harwood and Hadley, 2004 p.356), especially at the

start of a university course. Generally academic skills sessions are taught face to face either in a workshop or during a one to one environment (Murray and Nallaya, 2016, p.1299). This research looks to change the face of the academic skills workshop and offer different modes of interaction with academic skills material. It is hoped that this holistic approach of teaching academic skills will improve academic confidence in students and offer guidance for learning at Level 4 and beyond (Hill and Tinker, 2018, p.13). Although research highlights that academic skills content will work best if presented with subject specific content (Appleton, 2005, p.171) there is limited research highlighting the most effective pedagogical approach to use (Munn and Small, 2017).

Again - much clearer...

This research project evaluates the use of subject specific academic skills sessions using the flipped approach ^(soul/le) and its effectiveness. A detailed plan was proposed in collaboration with a Learning Development Tutor and the subject team to incorporate the sessions in accordance with the assessments and learning objectives of the module. A series of face-to-face sessions totaling two hours and asynchronous activity was designed to enhance academic skills development. The main objective for this approach was to address the lack of understanding in the fundamental basics of academic writing which included formal writing style, structure and use of evidence. The approach was chosen to allow exploration of the knowledge learned in the asynchronous content by completing practical activities face to face. The research involved a vocational subject area with practical based learners within the Faculty of Health and Society. It was hoped that the research would also extend to improving

achievement grades in the assessment. Defining the reason for non-achievement is beyond the research of this article. However, the link between academic confidence and performance has been explored using self-efficacy perceptions.

at what? Summary of flipped rooms / link to pedagogy / relative merits needed early on...

The methodology of this research used a flipped approach with students completing previews before attending face to face sessions. The face to face sessions were active and used to effectively problem solve, discuss and complete interactive classroom activities (Hao, 2016, p.83) blending the online content into a practical format. Carr et al., (2015) emphasises active learning is a very broad concept related with an extensive range of learning strategies. This approach moves the information transition outside of the classroom; supporting the session with activities for active and social learning; and utilising pre or post activities (Abeysekera and Dawson, 2014). This concept allowed the Learning Development Tutor to support the learning process within the classroom rather than just dispensing knowledge. Hook's (2010) chapter "To lecture or not" outlines that misunderstandings can occur within large lectures as listeners often project what they heard rather than what was said. The benefit of the flipped approach allowed students to explore the content learnt prior to the classroom and examine these concepts in a student-centred environment. Bergmann and Sams (2007) cited an advantage of the approach is that time within the classroom can be used to guide and practice the knowledge. This can promote an environment which allows students to regulate their own learning and be independent learners (Lage et al., 2000; Bergmann and Sams, 2007; Wilson, 2013) which is the important for academic skills development.

section could be clearer; is mentioned abt putting the merits of FC first would put discussion in context.

This flipped classroom content was in the form of structured e-tivities using Padlet and Xerte software. E-tivities are scalable tasks that can be found on a range of different platforms (Salmon, 2013, p.29). The PADLET resource was used to enable collaboration within the class. The features of the software allows small groups to produce a multimedia post improving engagement in an activity (Garnham and Betts, 2018, p7). Fisher (2017, p.163) promotes that the anonymity allows students to feel

sentence too short - combine these sentences more clearly

Flipped Classroom

'what is ideal?' - one could argue so is Padlet

more comfortable contributing to discussions in the form of a written post. The Xerte was used as it is an ideal platform to create interactive e-tivities due to its accessibility which is integrated into the software (van Hoorebeek *et al.*, 2009). Xerte is an open source suite of tools (Koochang *et al.*, 2011) developed in 2008 by the University of Nottingham. The browser-based tools allowed learning materials to be developed quickly and easily (University of Nottingham, 2008) and offer a range of interactive designs. Content was developed to ensure that students interacted with the knowledge taught to help promote recall (Rice *et al.*, 2019). (eeg)

↓ still a bit of a jump & between what you did and link to academic confidence.

Academic confidence

Bandura (1997) defines self-efficacy as one way of defining beliefs of a person's competence. Using this definition and relating it to an academic context could help to define the term academic confidence. Previous studies support that students' self-efficacy beliefs about their capabilities influence their academic achievement (Bandura, 1977). Bartimote-Aufflick *et al.* (2016) discussed self-efficacy in an academic environment as having a strong association with outcomes of students (Mattern and Shaw, 2010, p.675). Valentine *et al.* (2004, p.111) suggested that educational outcomes and attitude could be shaped by a self-exploration of feelings and beliefs. Conversely, research has shown that students are often poor at predicting their own ability (Dunning *et al.*, 2004; Chevalier *et al.*, 2009, p.726; Price *et al.*, 2011) as similar skills are required to judge their own performance as to succeed (Hacker *et al.*, 2000). There are obvious issues which are inherent with the nature of self-assessment (Falchikov and Boud, 1989, p.394). Yet Nicholson *et al.* (2013) maintains that students who are confident in their own ability will perform better and take responsibility for their own learning (Ryan and Deci, 2000). Allowing opportunities at institutions to engage in self-assessment of academic skills could be helpful to improve success (Reed *et al.*, 2011, p.134). Measuring the self-efficacy perceptions could be a useful tool for students to clarify their ability. Price *et al.* (2011, p.715) advocates that academic skills should be pre-tested, prior to any instruction, to act as a stimulus for increased engagement and to promote additional skill-building opportunities once a skill deficit has been identified.

This paragraph tends to sit in isolation - important yes - but not clear how it links to aspects of the overarching discussion.

Methods

A cohort of 50 first year students completed three academic skills sessions in addition to the content for a module (Table 1). The first 30-minute face to face session delivered within the first week introduced the support offered at the institution with regards to academic skills and then introduced the PADLET task in preparation for the subsequent sessions. The session informed the cohort how to access the on-line task and defined the small group activity required. This linked to reading an article and placing a reflection onto a PADLET. The e-tivity content was also introduced, and an expectation given that these were to be complete before the second face-to-face session. The second 60-minute face-to-face session in week two reflected on the e-tivities and developed skills to build an effective argument using the reflections gathered on the PADLET. All content delivered (online and face-to-face) was designed to support the formative and summative assessments. The final 30-minute face to face session in week five focussed on feedback from the formative assessments to feedforward information to support the summative assessment.

Table 1: A table outlining the flipped delivery completed in the research.

Content	Week 1	Week 2	Formative Assessment Week 4	Week 5	Summative Assessment Week
Asynchronous	Post session activity completed as group work to reflect on an article using PADLET.	Pre-learning e-tivities 1 to 5 to support face to face session.	Formative Assessment Week 4	E-tivities 1 to 5 still available for repeated attempts.	Summative Assessment Week
Face to face	Learning Development introduction and skills used to read an article (30 minutes).	Session incorporated activities on structure, academic writing and building an effective argument (60 minutes).		Feedback session to feed forward to the summative assessment (30 minutes).	

sentence construction needs attention . .

6-1

Due to the versatility and interactive content the Xerte Toolkit 2.0 was used. These were designed as asynchronous e-tivities. The five e-tivities which incorporated formative assessments within tasks to check understanding ^{and} they were themed into developing different academic skills and the content written demonstrated subject specific examples. These included e-tivity 1: time management, e-tivity 2: assessment structure, e-tivity 3: writing an essay, e-tivity 4: writing a paragraph and e-tivity 5: notetaking. These were presented as a separate learning unit within the module's virtual learning environment. These were not aligned sequentially, and all were made available to complete and attempts were unlimited to allow students to access the content through the module. Each e-tivity outlined on the first page an approximate time in minutes to help students to understand the length of time it would take to complete.

(rationale for this could be elaborated on)
Does multiple attempts → link to confidence → self-efficacy?

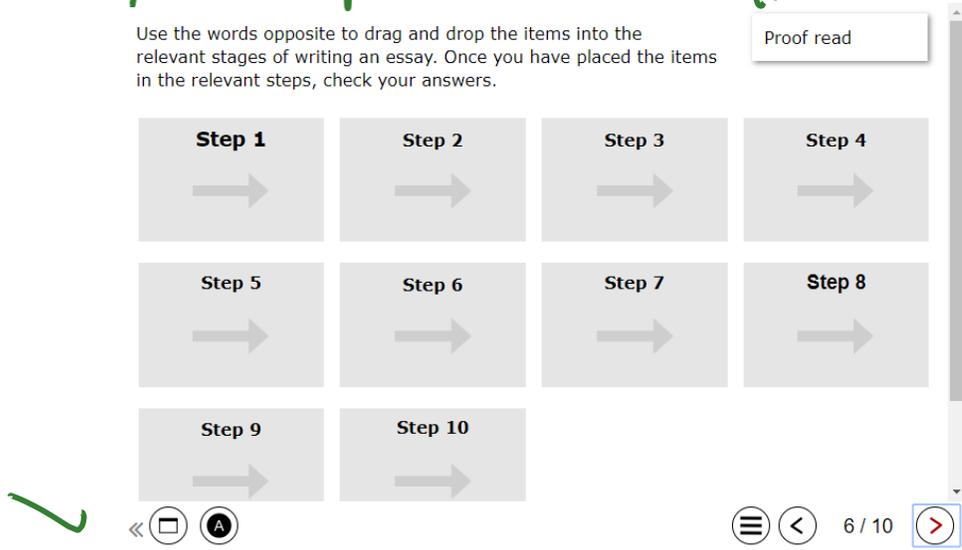


Figure 1. Taken from Writing an Essay Xerte demonstrating the interactive content to ensure that learners are actively learning content delivered within the asynchronous material.

visualising this helps enormously!

To define the success of the asynchronous component, performance data was analysed and evaluated. Data relating to the number of attempts and scores within the e-tivities from the cohort was recorded. The number of attempts at each e-tivity was divided into 3 categories: 0 attempts, 1-5 attempts and 6+ attempts. All students who had attempted the content demonstrated a graded score for the formative elements within the e-tivity

all students with graded scores were counted as an attempt as there was evidence to suggest interaction with the e-tivity.

it is sy to lose track on FC elements and analysis.
Student consent was given for the formative and summative grades to be analysed.

This was used to measure the success of the asynchronous component and the flipped approach. After each face to face session attendance data was collected. Attendance was categorised into attending two or more sessions or one or less. To measure the success of the approach this data was analysed together with the number of attempts at each e-tivity, self-reported academic confidence and the formative and summative grades. Results were evaluated to demonstrate an understanding of the benefits of the approach in academic skills delivery.

some additional sub-headings could help with sign-posting

A survey was used to evaluate the asynchronous content and measure the academic confidence levels of students utilising both qualitative and quantitative questions. No qualitative comments were made by the students on the survey. The survey was conducted within a workshop; students not in attendance were offered an online version to complete. A total of 31 students completed the survey (62% response rate).

Participation in the study was voluntary and the students who completed the survey had the option of having their data withdrawn from the research project upon request. The survey provided scores on students' academic confidence in the different academic skills abilities prior and post completion of asynchronous activity. The survey also asked students to provide preferred methods of developing academic skills and to evaluate the workshops and all e-tivities. The self-perceived academic confidence levels of students and summative grades were used to measure the success of the flipped approach in delivering academic skills.

in hindsight - a p

Results

An overall total of 1,239 attempts were recorded for all five e-tivities. The majority of attempts 66% (n=818) were completed before the formative assessment date and 34% (n=421) of all attempts were completed between the formative and the summative

• This is where paragraph on confidence needs to be integrated more effectively

assessment hand in date. This demonstrates that students reviewed the content to help inform their writing prior to and after the formative submission. Thus, acting to support the learning process for both the formative and summative assessments. Although the e-tivities lacked a sequential element the number of attempts on the asynchronous content declined as the e-tivities progressed. 35% of the total number of attempts were completed on e-tivity 1, 28% e-tivity 2, 20% e-tivity 3, 9% e-tivity 4 and 8% e-tivity 5.

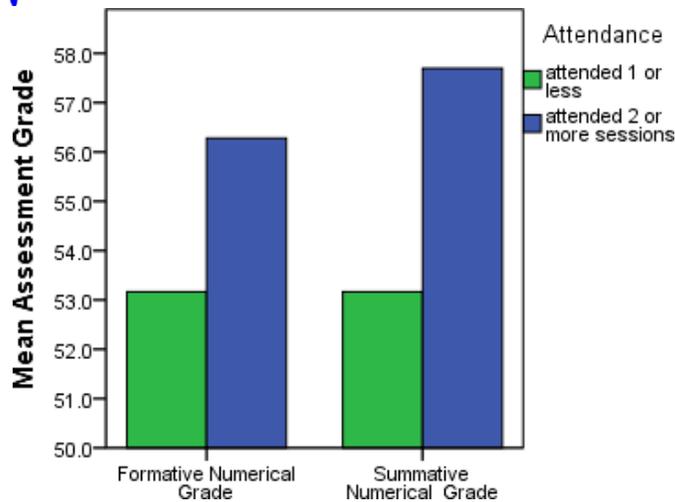
The number of attempts on each e-tivity and summative grade were investigated. For e-tivity 1 to 3 data showed a positive linear trend as the number of attempts increased, the summative grades increased (Table 2). The last two e-tivities did not demonstrate the same pattern due to the decline in the number of attempts. For e-tivity 4 students with no attempts showed a mean summative grade 53% (+/-9.42) n=12; those with attempts between 1 to 5 times showed a mean summative grade 57.3% (+/- 9.5) n= 35; 6+ attempts a mean summative grade 53% (+/- 4.36) n=3. For e-tivity 5 students with no attempts showed a mean summative grade 54.9% (+/-9.24) n=15; those with attempts between 1 to 5 times showed a mean summative grade 56.7% (+/- 9.57) n= 34; 6+ attempts a mean summative grade 51% n=1.

Table 2. Mean and standard deviation of the summative assessment grades and number of attempts for each e-tivity.

Attempts	e-tivity 1 M (SD)	e-tivity 2 M (SD)	e-tivity 3 M (SD)
0	50% (4.70) n = 6	50% (4.7) n = 6	50% (3.98) n = 7
1 - 5	54.8% (3.09) n = 14	54.3% (2.64) n = 17	56.6% (1.95) n = 26
6+	57.8% (1.33) n = 30	58.4% (1.36) n = 27	57.6% (1.75) n = 17

As expected, those who attended more sessions achieved better results. Those who attended two or more sessions (57.7% +/- 1.43) had a significantly higher summative score than those who attended 1 or less (51.7% +/- 2.73), (48), $t=2.102$, $p=0.041$ (figure 2). Even though the students who attended two or more sessions had a higher formative grade the improvement to the summative grade was greater. This demonstrated a significant improvement from the starting point of each student and added value to the summative scores of those who attended. This emphasises that the flipped approach is effective at improving summative grades.

- Excel graph not SPSS would look more professional.



↓
but this is fine - just an observation.

Figure 2. Means summative and formative grades for students who attended one or less face to face sessions and two or more face to face sessions.

again this reinforces that reference to self-confidence perhaps needs to come

The measure of self-perceived confidence before and after each e-tivity was measured to define if students' self-perceived academic confidence had improved. Each student was asked to rate themselves before and after each e-tivity using a five-point scale (1 = your very poor, 3 = average, 5 = excellent). The self-perceived academic confidence in each skill was recorded, 62% (31 students) completed the survey (Table 3). Overall the academic confidence improved in nearly a third of all students in each e-tivity. Caution should always be exercised when interpreting self-perceived ratings (Castells *et al.*, 2015, p.579) especially when the sample size is small. However, the e-tivities have shown to improve some students' academic confidence which highlights that the asynchronous content was effective. Students who have perceived themselves as poor,

average and good all showed improvements demonstrating that a range of student abilities improved their academic skills.

Table 3. The level of self-perceived confidence of students before each e-tivity and the percentage (number of students) whom improved their confidence after each e-tivity.

(n=31)	Did the e-tivity improve students' overall confidence	Student rated as poor before e-tivity and improved confidence post e-tivity	Student rated as average before e-tivity and improved confidence post e-tivity	Student rated as good before e-tivity and improved confidence post e-tivity
e-tivity 1	35.5% (n=11)	25% (n=1)	54.4% (6)	26.7% (n=4)
e-tivity 2	35.5% (n=11)	60% (n=3)	50% (n=4)	22.2% (n=4)
e-tivity 3	29% (n=9)	33.3% (n=2)	20% (n=2)	35.7% (n=5)
e-tivity 4	30% (n=9)	33.3% (n=1)	54.5% (n=6)	14.3% (n=2)
e-tivity 5	25.8% (n=8)	100% (n=1)	50% (n=5)	15.4% (n=2)

The preferred methods of developing academic skills were recorded. Two students (6.5%) stated via asynchronous content only, 12 students (38.7%) stated face to face only and 17 students (54.8%) stated a mixture of both. This suggests that students preferred the flipped approach to develop their academic skills.

helpful to assess of FC approach or on as this provides a reference for these comments. At the moment this discussion is missing.

Discussion

The flipped approach demonstrated in this research positively affected academic achievement endorsed by other researchers (Lage *et al.*, 2000; Bergmann and Sams, 2007; Chuthapisith, *et al.*, 2009; Wilson, 2013). Using the method of a flipped design allowed the opportunity for the students to ask questions of the content learnt asynchronously, in the classroom. This research agrees with the meta-analysis conducted by Jenson *et al.* (2015) who investigated student exam performance using the flipped learning method. Although vigilance should be taken when interpreting quantitative results from a meta-analysis (Fagard *et al.*, 1996), exam results improved

who says? Again could be linked to discussion!

Wo

am earliest

by 6% in sessions where students actively participated compared to those recorded in a traditional lecture style format (Jenson *et al.*, 2015).

This research concluded that students who attended two or more sessions had a 6% significantly higher summative score than those who attended one or less. Even though students who attended two or more sessions had a higher formative score the improvement to the summative score was greater in the group who attended two or more sessions. This significant difference in the summative grade emphasises the importance of attendance in the approach even though there was only two hours face to face contact. The flipped method allowed the tutor to support the learning process within the classroom rather than just dispensing knowledge. Chen *et al.* (2014) commented that a collaborative experience is facilitated by changing the classroom from a passive lecture to one that utilises flipped. This is advantageous for academic skills teaching as it can be perceived by students as a predominately tutor led activity; shifting to one which facilitates individual learner needs (Smith *et al.*, 2012, p.109). Farmer (2018, p.20) endorses that the flipped approach will be more successful using passive content to complete an active task than one that relies on the dissipation of passive content.

Isolating the number of attempts at each e-tivity compared to the summative grade did not demonstrate a significant difference which may have be due to the low number of participants within the study. However, the improvement which spans a grade boundary confirms that this approach in academic skills teaching could offer positive outcomes for students. The reason for the number of attempts improving the summative scores could have been due to the fact that students viewed the asynchronous content on a number of occasions in order to fully understand the knowledge. The number of attempts demonstrated that the students found value in the content which could have been for a number of reasons. Chuthapisith *et al.* (2009) demonstrated a significant difference in the higher retention performance and level of enjoyment in students using the Xerte and flashmacromedia when comparing students who received the same information via a

leaflet. This helps to understand that the use of this type of media tool had advantages which could have been due to its interactivity and integrated formative assessments.

Previous research using online learning in developing academic skills demonstrated that students completed two to four attempts to ensure they answered the questions correctly (Gunn *et al.*, 2011, p.5). This could justify the frequency of attempts for each student as each e-tivity had a series of formative assessment tasks. Large amounts of attempts could also be due to students wanting to recall the subject specific content as this was the main transition of academic skills knowledge rendering the classroom as the place to practically apply the content learnt from the e-tivities. However, the data capture from the software was limited as only the last attempted score was recorded and the number of attempts completed. Therefore, an attempt would be registered once the software had been opened which does not automatically mean that the content had been attempted each time. It was anticipated that some students may have opened the content and read the details surrounding the task and closed the application as they did not have sufficient time to complete it; registering an attempt. More exploration of the students' interaction with the asynchronous material needs to be made as the survey did not investigate the platform the students chose to complete the content or verified the number of attempts.

The largest difference in assessment grade was seen in the students who attempted e-tivities six or more times which could be down to students continuing to review the learning material which cemented their understanding. It also supports that the active classroom content is as important as the asynchronous content. Another explanation for the difference in summative grades when compared to those who did not attempt the e-tivities could be that those students who conformed to the teaching method are more motivated and studious regardless of the pedagogical approach.

Due to the placement of each session the research failed to demonstrate a significant difference between formative and summative grades. It is perceived that as the sessions incorporated skills to inform students' academic writing, the sessions helped to elevate the formative grade. Students are not clear of the boundaries or expectations of academic writing (Harwood and Hadley, 2004, p.356) therefore aiding in demystifying the expectations the formative scores would have benefited. The research showed that 66% (n=818) of attempts on the asynchronous resources were completed before the formative assessment submission date and 34% (n=421) of all attempts were completed between the formative and the summative submission date. The focus on the sessions were to inform students prior to the summative assessment using the formative assessment as the vehicle. However, the benefits to the formative assessment results have not been explored within the parameters of this research as there was not a valid benchmark embedded prior to the formative assessment. Other variables such as tutor feedback could have impacted on the summative grade with students gaining an understanding of the application of the academic skills as well as the flipped impact. Therefore, the research was not designed to suggest there would be a difference in the formative and summative grades.

Although there was a decline in the number of attempts at each e-tivity as the e-tivities progressed this same relationship was not demonstrated in the academic confidence scores of students. This implies that although the attempts declined in number; the perceived confidence levels gained remained static demonstrating a third of students perceived levels of confidence improved. The improvement of the confidence could be a result of the pedagogical approach adopted in the research. This is further endorsed by Sander and Sanders (2006) research which suggested that the university experience will affect self-esteem, and this will in turn affect academic performance. Having the confidence to succeed at higher education is important and using the flipped approach can only compliment this.

The success of the flipped approach was confirmed by most students (53.3%) preferring a mixture of both online and face to face sessions to develop their academic skills. This agrees with the findings in a study by Pye *et al.*, (2015, p.10) who found that 53% of students perceived that online systems maximised their classroom learning. The use of the flipped learning approach adopted for the research used software, which was multifunctional and could be utilised pre, post and during sessions (Harris, 2011). The inclusivity of the software (Hockings *et al.*, 2012) was a benefit and the predominance of the text-based format (Harris, 2011) allowed transmission of academic skills content to be asynchronous which was later developed through the face to face sessions. The students who attempted a greater number of online activities and attended all sessions improved their confidence more than those who had engaged less. Interestingly the confidence was gained more in the face to face session rather than inferring to the number of asynchronous attempts. This suggests that if a student did not attend face to face sessions their perceived academic confidence was gained solely by the asynchronous content. The asynchronous content used to complement the flipped approach allowed students to control their learning habits and complete the tasks in their own time (Kamal and Radhakrishnan, 2019, p.425).

I would be inclined to add additional subheadings into your discussion.

Delivering academic skills using the flipped approach relies on a change of culture. Freeman *et al.* (2014) suggests that active learning should be promoted as a preference rather than supporting an empirically validated practice. Thus, encouraging a culture which matures into a setting allowing students a comfortable environment to clarify information (Lage *et al.*, 2000). This approach feels the most natural form to transmit academic skills. Rosinski and Peeples, (2012, p.9) found that active pedagogies which purposively integrate interaction between students and tutors are more likely to create successful academic writers. The aspects of this research did not explore the impact of the delivery method on retention but Freeman *et al.*, (2014) suggests that this method positively effects retention with active learning classes holding onto a higher proportion of lower ability learners than traditional lectures.

Conclusion

The research explored the effectiveness of the flipped approach in delivering academic skills. The results found that students had a significantly higher summative score if they attended two or more sessions than those who attended 1 or less. The summative grades and the number of attempts for e-tivity 1 to 3 demonstrated a positive linear relationship. Overall the academic confidence improved in nearly a third of all students for each e-tivity. This emphasises that the flipped approach is an effective method to improve summative grades and deliver academic skills.

More research into the delivery of academic skills using the flipped approach within larger cohorts should be investigated. Recommendations, from this research are that concept and expectations need to be explained to the cohort at the start of the module and subject specific content is used to deliver academic skills material. This will help to ensure adherence to asynchronous content and attendance at all face to face sessions which in turn could benefit the summative grades of students.

* * alongside your results you also need to include a section on flipped classrooms and a specific focus on what works. The subheadings in the results would help focus attention around the 0 of your de / linked back to the context provided at beginning. draw in more articulately discussion around confidence.

- overall few pts needed which I have attempted to outline above. This is much improved from previous versions focusing on flipped classrooms that than ABL gives a more discrete focus.

- think about highlighting aspects of practice that are transferable!

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