

## AUTHOR:

Anneen Church<sup>1</sup> 

## AFFILIATION:

<sup>1</sup>University of the Free State,  
South AfricaDOI: <https://doi.org/10.38140/pie.v41i3.6804>

e-ISSN 2519-593X

Perspectives in Education

2023 41(3): 23-38

## PUBLISHED:

29 September 2023

## RECEIVED:

16 March 2023

## ACCEPTED:

25 August 2023

# Optimising academic writing assessment during Covid-19: The development multiple choice tests to develop writing without writing

## Abstract

*Restrictions and challenges brought on by the Covid-19 pandemic challenged higher education institutions to innovate to keep reaching teaching and learning goals. In South Africa, existing social inequalities were exacerbated by the pandemic restrictions and many students faced severe challenges in terms of access and support to aid in their academic success. Even under 'normal' circumstances, developing students' academic writing skills and critical thinking ability can be challenging. It is this teaching and learning goal, along with the added contextual challenges brought on by the pandemic that prompted the intervention described in this paper. How can we teach and assess critical thinking, and higher-order aspects of academic writing, in such a resource scarce environment?*

*In this paper, the development and results of formative, multiple choice question (MCQ)-style, online tests aimed at developing critical thinking and higher-order aspects of academic writing is discussed. The development of the test through intentional test item design and online test setup is explained whereafter statistical analysis of student participation and results are presented. These preliminary results show that students generally use learning opportunities to their advantage to learn and improve their marks. It also shows that flexible test structure and a supportive test environment can promote equality of outcomes for students, regardless of the contextual challenges they face.*

**Keywords:** *automatic feedback, critical thinking, formative assessment, higher-order aspects of academic writing, multiple-choice question, writing assessment*



Published by the UFS  
<http://journals.ufs.ac.za/index.php/pie>

© Creative Commons  
With Attribution (CC-BY)



## 1. Introduction and contextualisation

Balancing theoretically justifiable academic literacy development curriculum decisions with operational realities can be a struggle for academic literacy practitioners. Literature on best practices related to teaching academic writing can feel a world away from the contextual realities practitioners within the higher education sector in South Africa face. The research presented in this article aims to report on

an innovative assessment intervention attempting to optimise students' academic writing development while navigating the harsh contextual realities of the Covid-19 pandemic.

The nature of academic literacy, and approaches to best teach and assess it is ever evolving. Lillis *et al.* (2015:6-8) use the term *academic literacies* and explain that academic literacies encompass various aspects related to producing academic texts, as originally outlined by Lea and Street (1998). These aspects do not merely relate to linguistic competence, but include knowledge of the functional and pragmatic applications of language. They also require knowledge of the social contexts in which texts are read and produced and the academic priorities of a particular context (Drennan, 2017). The purpose of academic literacies interventions such as the ones mentioned in this article is therefore not merely to provide linguistic tools to navigate writing at university, but also to teach Cognitive Academic Language Proficiency (CALP) as first presented by Cummins (1979), and discourses associated with academic writing in various context. These skills are complex, and even for students who are native speakers of a language, they can take time to master; moreover, it requires knowledge and experience to successfully teach these skills.

Researchers agree that one of the skills students need when writing in an academic context is critical thinking (Tahira & Haider, 2019; McKinley, 2013; Pally, 2001). Despite academic consensus about its importance, its manifestation and application within academic literacy interventions remain varied due to its complex nature and many definitions (Tahira & Haider, 2019). Early conceptualisations of critical thinking linked it to the top three domains of Benjamin Bloom's taxonomy of learning, namely evaluation, synthesis and analysis. Many take a wider view of the components of critical thinking and extend the term to rationality, scepticism, making connections and cognitive judgement, to name a few (Tahira & Haider, 2019). Ebadi and Rahimi (2018:619) postulate that critical thinking "could be conceptualised as either cognitive skills or social and emotional disposition".

When consulting Patterson and Weideman's (2013:139-140) construct of academic literacy, a number of items relate directly with either or all conceptualisations of critical thinking. One of the most significant aspects of critical thinking in this construct is the ability to "think critically (analyse the use of techniques and arguments) and reason logically and systematically in terms of one's own research and that of others" (2013:139), which explicitly calls on critical thinking. Similarly, many of the aspects of academic literacy discussed by Patterson and Weideman (2013:139-140) relate to thinking processes that align with evaluation, synthesis, and analysis. While supporting students to develop these skills is important, researchers do not agree on the best way to teach them (Alsaleh, 2020; Behar-Horenstain & Niu, 2011). In a resource-scarce environment, developing critical thinking skills in first-year students can become especially challenging.

One of the task/assessment types that are seen as the gold standard for academic literacies development and assessment is essay/assignment writing. In the academic literacies (AL) classroom, these tasks usually take the form of formative assessment requiring of students to produce multiple drafts and teachers to give feedback between these drafts (Fernando, 2018: 63-64). This process is, among others, aimed at developing and assessing critical thinking skills, as well as so-called 'higher-order' aspects of academic writing. These are aspects that relate to meaning making and argumentation, such as organisation, content, coherence, etc. Often, students' understanding of concepts can be tested through non-writing, self-marking tasks, such as quizzes, but tasks that involve critical thinking and meaning making are almost exclusively assessed through formative writing tasks.

Unfortunately, this extended interaction between the student and the teacher takes time and resources and it requires ongoing effort from an experienced teacher (Degeng *et al.*, 2022). In a resource-scarce context, this situation can also pose quality assurance challenges to administrators, as overwhelmed teachers attempt to navigate teaching higher-order academic literacy skills to 'underprepared' students in a highly specialised context. This leads us to consider the contextual realities of higher education teaching in relation to academic literacies development.

Worldwide, the massification of the higher education sector has given rise to various challenges for institutions. The diversification of the student body has led to students entering university with varied lived experiences and some lack key skillsets that make succeeding at university probable (Smit, 2012). Additionally, academic literacy results from the National Benchmark Tests in South Africa have shown that most students (76.51% in 2019) writing these tests during their university application process, have a basic or intermediate level of academic literacy (NBTP, 2019: 27), which indicates a high likelihood of hindered academic performance and progress during their studies. In post-apartheid South Africa, the trend of massification is not the only factor leading to a more diverse student cohort. The immense transformation of the education system since 1994 has led to most universities expanding their provision in terms of support to students who might not be prepared for the demands of higher education (Wilson-Strydom, 2010: 313-314). One of the ways universities have tried to support students is through academic literacy development initiatives, such as the courses mentioned in this article. Despite the efforts of higher education institutions many students are still having a hard time succeeding in their tertiary studies.

The existence of achievement gaps between various student demographics in South Africa, and the operational constraints related to delivering academic literacies support at scale were already widely known prior to the COVID-19 pandemic (Pillay, 2019; Munro, Vithal & Murray, 2015; Wilson-Strydom, 2010). However, the emergency remote teaching situation brought on by the COVID-19 pandemic highlighted and exacerbated the existing inequalities in terms of resources and the challenges that our students face (Ndibalema, 2022). During this remote teaching period, it was fair to assume that access to resources and infrastructure necessary for online learning was going to be an immense challenge for a large part of the student population. The *Students' Access to and Use of Learning Materials Report 2020* (DHET, SA, 2020) students facing a myriad of challenges while studying remotely, some related to technology use and others to the circumstances in their various contexts. In her article reporting on difficulties experienced by a group of UFS medical students, Phejane (2022) asserts that a traditional, rigid approach to assessment can lead to the exclusion of some students, perpetuating existing performance gaps. She suggests that providing flexibility in online learning tasks for students to adapt and orientate themselves can lead to greater equality of access to learning and assessment tasks.

It is against the backdrop of these theoretical and contextual considerations that the need arose for the development of an alternative assessment task type to diversify our teaching and assessment tools. Initial instructional goals for this assessment, were outlined as follows:

- An assessment task needs to be designed to promote the development and assessment of higher-order thinking and writing skills needed to eventually produce academic texts.
- The assessment task should be completed and submitted online.
- The task should be formative, with multiple submission opportunities.

- Students should receive feedback, preferably automatically, without the input of a facilitator.
- Students with varying contextual challenges should be accommodated, providing the best chance at success for all students.

The next section outlines the method followed to design the assessment tasks and the instruments used to measure its effectiveness.

## 2. Methodology

### 2.1 Population and curriculum content

This assessment intervention was implemented in 2021 and 2022 in two different academic literacy modules at the UFS. In 2021, education students enrolled for the English Academic Literacy for Education (EALT1508) course completed this assessment and in 2022, it was completed by law students enrolled for English Academic Literacy for Law (EALL1508).

The course content schedules for EALT1508 (in 2021) and EALL1508 (in 2022) were similar, with the same academic content being covered at roughly the same points during the semester. In both instances, two assessment tasks were required to test the students’ application skills of the preceding course content. The content in question is set out in the table below.

**Table 1:** Course content for EALT1508 (in 2021) and EALL1508 (in 2022)

2021: EALT1508	2022: EALL1508
<ul style="list-style-type: none"> <li>• Lesson 2: Essay writing</li> <li>• Lesson 3: Introductory paragraphs</li> <li>• Lesson 4: Types of paragraphs</li> <li>• Lesson 5: Concluding paragraphs</li> </ul> <p><b>Assessment of lessons 2-5</b></p> <ul style="list-style-type: none"> <li>• Lesson 6: Cohesive paragraph writing</li> <li>• Lesson 7: Synthesis – bringing key ideas together</li> <li>• Lesson 8: Paraphrasing</li> <li>• Lesson 9: Text cohesion</li> </ul> <p><b>Assessment of lessons 6-9</b></p>	<ul style="list-style-type: none"> <li>• Lesson 2: Planning your essay’s structure</li> <li>• Lesson 3: Introductory paragraphs</li> <li>• Lesson 4: Concluding paragraphs</li> </ul> <p><b>Assessment of lessons 2-4</b></p> <ul style="list-style-type: none"> <li>• Lesson 5: Summarising and paraphrasing</li> <li>• Lesson 6: FIRAC summary</li> <li>• Lesson 7: Coherent paragraph writing</li> <li>• Lesson 8: Synthesis</li> <li>• Lesson 9: Text cohesion</li> </ul> <p><b>Assessment of lessons 5-9</b></p>

Based on the curriculum and assessment structure outlined above, this article reports on the following assessment tasks:

- EALT1508, Test 1 (Assessment of lessons 2-5)
- EALT1508, Test 2 (Assessment of lessons 6-9)
- EALL1508, Test 1 (Assessment of lessons 2-4)
- EALL1508, Test 2 (Assessment of lessons 5-9)

## 2.2 Intervention design

### 2.2.1 *Mode of delivery and item design*

Based on the initial instructional goals, it became clear that the task's success would depend on the interaction between instructional design decisions, and academic literacies content. While the content of the assessment was likely to be cognitively demanding, the instructional design should be enabling and flexible to address the contextual challenges. Instructional design decisions that were made early on included:

- The Blackboard Learning Management System (LMS) would be used to host the task (this is the LMS that is used at the UFS).
- The task would have to consist of self-marking test items, like multiple choice, ordering, etc.
- Students would have more than one attempt to complete the task to allow for a formative assessment structure.
- Students would receive predetermined, automated feedback on the answers they submitted to promote learning within the formative assessment structure.

With this task structure, and the academic requirements in mind, the following academic content decisions were made:

- Questions should address the relevant curriculum content and be designed to promote higher order thinking.
- To promote academic rigour and discourage cheating, the questions in the task would come from a pool of questions to ensure that students do not receive the same set of questions in their test attempts.
- While there would be automated feedback containing guidance for future attempts, students will not be provided with the correct answer as part of the feedback.

For the purpose of this assessment task, it was decided to use Multiple Choice Questions (MCQs), as this would satisfy many of the instructional design and resource requirements. MCQs typically consist of a question stem and several answer options (Scully, 2017:4). Using MCQs to evaluate higher-order thinking skills is somewhat unconventional, and the possibility to do so is even contested by some scholars (Lenchuk & Ahmed, 2021; Scully, 2017). That said, the work of Scully (2017) suggests that MCQ items can be designed to promote higher-order thinking, and she provides strategies for constructing of MCQ items to maximise critical thinking. These suggestions include:

**Manipulation of target verbs:** This refers to purposely including action verbs that relate to higher levels of Bloom's taxonomy (like evaluate or analyse) to you question.

**Item flipping:** This refers to 'flipping' the information typically provided in the stem with that provided in the answer options. If an item tests knowledge of an overarching concept or category and its components, test takers could answer the question correctly without understanding its true implication or the characteristics of an exemplar of the concept. In this case, the item can be 'flipped' by providing an exemplar and asking test takers to identify the overarching concept. Scully (2017: 6) provides an example from the field of Education (see below).

**Table 2:** Samples of original and ‘flipped’ multiple choice test items

<b>Original Items:</b>	<b>Flipped Items:</b>
<p>Which of the following best describes what is meant by ‘formative assessment’?</p> <p>A. is based on the student’s attitudes, interests and values</p> <p>B. is designed primarily to evaluate learning</p> <p>C. is usually high-stakes</p> <p>D. provides information to modify teaching and learning*</p>	<p>A teacher uses a strategy called <i>Thumbs Up, Thumbs Down</i> with her students. This illustrates the use of:</p> <p>A. affective assessment</p> <p>B. formative assessment*</p> <p>C. diagnostic assessment</p> <p>D. summative assessment</p>

**Use of high-quality distractors:** refers to ensuring that answer options are all, at least superficially, plausible correct responses to the question or instruction in the stem.

**Tapping multiple neurons:** This refers to a concept introduced by Burns (2010) that postulates that some questions require of test-takers to draw on one piece of knowledge to answer the question correctly (so-called ‘one-neuron’ items), while others require of test-takers to have knowledge of multiple pieces of information and understand the interaction between them, to answer the question. An example would be of a question tapping a question, asking a student to identify the thesis statement within an introduction, as opposed to asking students to choose an improved thesis statement, after providing an introduction with a badly formulated thesis statement. In the first instance, students should 1) know what a thesis statement is, and 2) identify the sentence that meets the criteria (thus metaphorically tapping two neurons). In the second instance, students should also know and identify, but they should also be able to 1) identify in which way the sentence is formulated poorly, and 2) know what an appropriate improvement would be (thus, metaphorically tapping four neurons).

In designing the test items for this assessment, a combination of these strategies was used to promote the development of higher-order thinking in completing the assessment.

In addition to the structural considerations of the MCQs, the subject matter that was ‘tested’ in these questions also contributed to questions being likely to promote critical thinking.

Academic writing topics such as coherence and text organisation require of students to understand argumentation and synthesise information. Tasks that assess their understanding of these principles in an applied way would require of students to look beyond the surface level features of the text and explore meaning and implications. Naturally, many questions contained samples of academic writing, ranging from a single sentence to a short paragraph. Answering these questions successfully would require reading comprehension and the ability to apply the theoretical principles of the subject matter to the sample text. In this way, it would be possible to 'tap multiple neurons' and promote critical thinking.

To illustrate how the strategies mentioned above were applied in the design of the test items for this test, an example of a test item is provided below. This question was based on the lesson about creating a coherent argument and the role of thematic progression and theme/rheme structures in academic writing.

One way you can improve the coherence in your written text is being aware of and using theme/rheme structures. Study the two sentences below and indicate which one of the listed statements is TRUE.

*The chapter explores how education and teachers are conceptualised within policymaking in relation to building social cohesion in South Africa. More specifically, it considers the intended educational goals of social cohesion initiatives, its value in schools in reducing societal conflict, and its objective to foster enduring forms of social justice and peace in everyday life.*

**The first sentence and the second sentence have the same theme.\***

The first sentence and the second sentence have the same rheme.

The theme of the first sentence is the rheme of the second sentence.

The rheme of the first sentence becomes the theme of the second sentence.

In this example, the strategies of item flipping, tapping multiple neurons, and high-quality distractors are evident. The question uses the concept of theme and rheme and instead of asking for an explanation or definition, it provides an example and requires of students to identify the overarching theme/rheme pattern. This is an example of item flipping.

In terms of tapping multiple neurons this item requires of students to draw on multiple pieces of information to synthesise and come to a single conclusion. In this case, students would need to know the following:

- a. What is a theme?
- b. What is a rheme?
- c. What is the theme and the rheme in each of the sample sentences?
- d. How does each sentence's theme and rheme relate to the next sentence's theme and rheme?

Only then will they be able to answer this question accurately. In points c) and d) above, reading comprehension would play a big part in being able to answer the question correctly.

The answer options should all seem equally plausible at first glance, providing high quality distractors.

A similar approach was followed in the design of all of the test items.



### 2.2.2 Test content and question pool structure

Since this assessment task was meant to assess students' mastery of academic content within the curriculum, it covered specific topics. Within each topic, several different question stems were created. To ensure that students do not receive the exact same questions during their test attempts, each of the questions from each topic was at least duplicated by adding a question (or questions) with the same question stem, a different sample text and similar answer options. This created a small pool for each question in the test. It also meant that different iterations of the test will have an almost identical structure in terms of the questions asked, although specific applications would differ.

The table below shows an example from the questions (stems) that were created from the lesson mentioned before about coherent academic writing. The same was done for each lesson. As explained earlier, each question stem was then expanded to form its own question pool with identical question stems, but different sample texts or applications.

**Table 3:** Sample question stems per lesson

Lesson theme	Number of pools	Question stems for each pool
Lesson 6: Cohesive paragraph writing (theme/rheme)	3	Pool 1:  One way you can improve the coherence in your written text is being aware of and using theme/rheme structures. Study the two sentences below and indicate which one of the listed statements is TRUE.
		Pool 2:  One way you can improve the coherence in your written text is being aware of and using theme/rheme structures. Study the short paragraph below and indicate which idea is used most often as a theme in the sentences.
		Pool 3:  There are several common theme/rheme patterns that you can use to help improve coherence within a paragraph. You can even combine patterns in longer pieces of writing. Which pattern is used in the text below? Choose the appropriate answer.

Even though students would not receive the exact same tests, all reasonable attempts had to be made to ensure that each attempt provided questions of a similar difficulty level that required the same knowledge and skills. To illustrate the way in which the questions within a pool differed from one another, examples from three questions within one sample pool are provided below. This example is from the very first pool indicated in the table above.



**Table 4:** Sample questions from the same pool

Question stem	One way you can improve the coherence in your written text is being aware of and using theme/rheme structures. Study the two sentences below and indicate which one of the listed statements is TRUE		
Sample text	The chapter explores how education and teachers are conceptualised within policymaking in relation to building social cohesion in South Africa. More specifically, it considers the intended educational goals of social cohesion initiatives, its value in schools in reducing societal conflict, and its objective to foster enduring forms of social justice and peace in everyday life.	On the one hand, teachers play key roles in influencing the personal identities of learners, as well as the development of their values, such as respect and tolerance. On the other hand, their contribution is shaped by the ways in which structural inequalities, including the distribution of education opportunities, influence what they are able to do as teachers.	Innovation is the creation, development and implementation of a new product, process or service with the aim of improving efficiency, effectiveness or competitive advantage. This definition is good, but it points mostly to the business sector; we dovetail it to educational sector, which is of course a business of its own kind.
Answer options (correct answer indicated in bold text)	<ul style="list-style-type: none"> <li>• <b>The first sentence and the second sentence have the same theme</b></li> <li>• The first sentence and the second sentence have the same rheme</li> <li>• The theme of the first sentence is the rheme of the second sentence</li> <li>• The rheme of the first sentence becomes the theme of the second sentence</li> </ul>	<ul style="list-style-type: none"> <li>• <b>The first sentence and the second sentence have the same theme</b></li> <li>• The first sentence and the second sentence have the same rheme</li> <li>• The theme of the first sentence is the rheme of the second sentence</li> <li>• The rheme of the first sentence becomes the theme of the second sentence</li> </ul>	<ul style="list-style-type: none"> <li>• The first sentence and the second sentence have the same theme.</li> <li>• The first sentence and the second sentence have the same rheme</li> <li>• The theme of the first sentence is the rheme of the second sentence</li> <li>• <b>The rheme of the first sentence becomes the theme of the second sentence</b></li> </ul>

Several measures were put in place to ensure that the different questions within the pools were similar enough to constitute a similarly challenging test for all test attempts. In addition, pools containing questions that would be randomly selected for specific test attempts, and the absence of an indication of correct answers in the feedback was utilised in an attempt to minimise peer-to-peer sharing of questions and answers. While it is impossible to claim absolute congruency for different test attempts or no sharing between students, this article will assume that test attempts would have included sufficiently similar test questions to uphold the validity of the various attempts and to support statistical validity in the analysis of changes between first and second attempts.

As mentioned earlier, students would receive feedback on the answers they provided. Feedback is seen as a useful tool to enhance student learning (Pereira *et al.*, 2016:7). Pereira *et al.* (2016) further explain that feedback is critical in formative assessment tasks as it promotes students' ability to self-regulate their learning which promotes academic achievement. There are different views on what constitutes effective feedback and naturally, the goal of the feedback plays a large role in constructing effective feedback. According to

Hattie and Timperley (2007:86), there are three questions that should be answered by good feedback, namely “Where am I going? (i.e. What are the goals?), How am I going (i.e. What progress is being made towards the goal?), and Where to next? (i.e. What activities need to be undertaken to make better progress?)”. In this assessment intervention, the feedback provided aimed to broadly address at least the last two of these questions. Based on the nature of the test question and the anticipated challenges students could face to answer the question, feedback addressing only one or two of these questions was sometimes prioritised. It could be argued that the feedback related to the first questions (what are the goals) was partially realised through the structure of most questions, as the general topic or a theoretical statement upon which the question was based was often provided as a scaffold.

To illustrate, see the examples in the table below, along with a short explanation on the way in which the feedback addressed one or more of the questions above.

**Table 5:** Alignment between test items and feedback

Extract from question stem	Sample Feedback	Explanation
<p>One way you can improve the coherence in your written text is being aware of and using theme/rheme structures. Study the two sentences below and indicate which one of the listed statements is TRUE.</p>	<p>You chose the wrong answer. It looks like you are still unsure about how themes and rhemes work. Go and have a look at Lesson 6 or listen to the lesson recording to find out more about this topic.</p>	<p><b>What are the goals?</b> Some indication was given in the question stem.</p> <p><b>How am I going?</b> Indication in feedback that student chose the incorrect answer and provides plausible knowledge gap.</p> <p><b>Where to next?</b> Feedback directs students to appropriate learning materials.</p>
<p>When using transitional devices to improve cohesion in writing, it can often help to think about the types of cohesion links needed in specific contexts. Read the sample text below and indicate which TYPE of transitional device is needed to show the relationship between the ideas accurately.</p>	<p>You chose the wrong answer. Make sure that you understand the relationship between ideas before you look at the answer options. It might help to understand how the ideas are related to one another, before trying to find a phrase that shows the relationship.</p>	<p><b>What are the goals?</b> Some indication was given in the question stem.</p> <p><b>How am I going?</b> Indication in feedback that student chose the incorrect answer and provides plausible knowledge gap.</p> <p><b>Where to next?</b> Feedback suggests a specific approach to the question. In this case, looking beyond the surface level of the text was key to correctly answering the question.</p>

### 2.3 Evaluation tools

Students’ participation in the assessment task and academic performance is measured and reported on in this study. While perceptions of students and staff, as well as triangulation of performance data with demographic information could provide a more comprehensive view of the success of this assessment intervention, the focus in the present study is on determining whether learning likely took place. In essence, the goal of the intervention was to create a

formative assessment that helped students learn, regardless of the contextual challenges at the time. To this end, data about the numbers of attempts and test performance on the various attempts do provide an indication of engagement with the assessment task and possible learning that took place in this formative assessment task. Since student performance is the construct that is measured and reported on in this article, statistical analyses are appropriate. Standard descriptive statistics as well as paired t-tests will show how students performed in the various iterations of the tests. Test performance is indicated as a mark out of 25.

### 3. Results

For the statistical analysis, first and second attempts of a specific test were regarded as pre- and post-tests. Students had the options to complete the test once, or choose to complete a second test. As expected, some students completed one attempt while others completed two. This meant that the sample was self-selecting in the sense that students who completed the test twice automatically put themselves in the group who did a pre- and post-test. Therefore, for each of the four tests conducted, there are four sets of test results for each test, namely:

1. First attempt of all the students (all)
2. First attempt of students who only completed one attempt (1/1)
3. First attempt of students who completed two attempts (1/2)
4. Second attempt of students who completed two attempts (2/2)

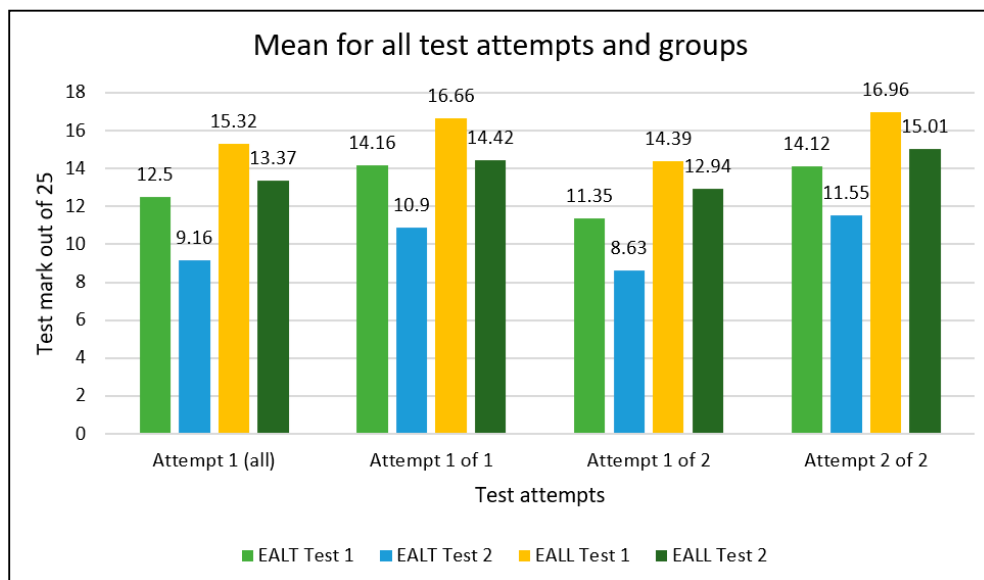
Where relevant, statistical analysis was done and reported on separately for the various groups.

Table 6 shows the descriptive statistics for the various sample groups as set out in the previous section. For each test, more than half the students opted to attempt the test twice. For both year groups, the proportion of students who completed two attempts in the second test increased, compared to the first test.

**Table 6:** Descriptive statistics for EALT1508 and EALL1508 test attempt results

		Variable	n	minimum	maximum	mean	Std Dev
EALT1508 (2021)	Test 1	Attempt 1 (all)	913	0	23.5	12.5	3.929
		Attempt 1 of 1	376	0.5	23.5	14.16	3.961
		Attempt 1 of 2	537	0	22	11.35	3.468
		Attempt 2 of 2	537	0	24.5	14.12	3.906
	Test 2	Attempt 1 (all)	952	0	25	9.16	3.638
		Attempt 1 of 1	223	1	25	10.9	4.575
		Attempt 1 of 2	729	0	21	8.63	3.114
		Attempt 2 of 2	729	1	24	11.55	4.211
EALL1508 (2022)	Test 1	Attempt 1 (all)	654	0	23	15.32	3.367
		Attempt 1 of 1	267	7.5	23	16.66	3.134
		Attempt 1 of 2	387	0	23	14.39	3.209
		Attempt 2 of 2	387	1	24	16.96	3.329
	Test 2	Attempt 1 (all)	627	1	22	13.37	3.382
		Attempt 1 of 1	181	3	22	14.42	3.385
		Attempt 1 of 2	446	1	21	12.94	3.290
		Attempt 2 of 2	446	1	25	15.01	3.364

Figure 3 below shows the mean for all tests and groups. For all tests, the mean scores of Attempt 1 of 2 is the lowest and Attempt 1 of 1 and 2 of 2 are similar. This shows that on average, those who chose to complete the test twice performed worse in their first test attempt than those who chose to complete the test once. However, in their second attempt, they were able to improve their performance to the level of those who only chose to complete the test once. In most cases, those who attempted the test twice outperformed those who only completed one attempt.



**Figure 1:** Mean for all test attempts and groups

Table 7 shows the results of the Komogorov-Smirnov statistic. This statistic measures the distribution of the scores. If the distribution is normal for two sets of data (sig. value >0.05), parametric tests to test for a statistically significant change can be done. If not, a non-parametric test such as the Wilcoxon Signed Rank test should be done. In Test 1 of EAL1508, the data of Attempt 1 of 2 and Attempt 2 of 2 were trimmed to remove outliers (data points more than three standard deviations were removed). A total of 14 out of 537 data points were removed. As can be seen below, in all cases the significance value is smaller than 0.05, which means that the marks are normally distributed, and parametric tests can be done.

**Table 7:** Normality test results (Komogorov-Smirnov Statistic)

	Variable	Statistic	df	Sig.	
EAL1508 (2021)	Test 1	Attempt 1 (all)	.037	913	.005
		Attempt 1 of 1	.053	376	.014
		Attempt 1 of 2	.049	522	.004
		Attempt 2 of 2	.040	522	.047
	Test 2	Attempt 1 (all)	.100	952	.000
		Attempt 1 of 1	.087	223	.000
		Attempt 1 of 2	.093	729	.000
		Attempt 2 of 2	.096	729	.000

	Variable	Statistic	df	Sig.	
EALL1508 (2022)	Test 1	Attempt 1 (all)	.075	654	.000
		Attempt 1 of 1	.104	267	.000
		Attempt 1 of 2	.077	387	.000
		Attempt 2 of 2	.091	387	.000
	Test 2	Attempt 1 (all)	.087	627	.000
		Attempt 1 of 1	.127	181	.000
		Attempt 1 of 2	.088	446	.000
		Attempt 2 of 2	.075	446	.000

The significance of the improvements between the first and second test attempts from students who had completed both, as suggested by comparing means, could now be determined using the relevant statistical methods, namely paired t-tests. Table 8 shows the descriptive statistics from the paired t-tests performed on the above-mentioned data sets. Additionally, Table 9 shows that all three these datasets showed a statistically significant increase from Attempt 1 to Attempt 2.

**Table 8:** Paired t-test descriptive statistics

			Mean	N	Std Dev	Std Error Mean
EALT1508 (2021)	Test 1	Attempt 1 of 2	11.45	522	3.429	0.150
		Attempt 2 of 2	14.41	522	3.564	0.156
	Test 2	Attempt 1 of 2	8.63	729	3.114	0.115
		Attempt 2 of 2	11.55	729	4.311	0.160
EALL1508 (2022)	Test 1	Attempt 1 of 2	14.39	387	3.21	0.16
		Attempt 2 of 2	16.96	387	3.33	1.17
	Test 2	Attempt 1 of 2	12.94	446	3.29	0.16
		Attempt 2 of 2	15.01	446	3.36	0.16

**Table 9:** Paired t-test for differences between Attempt 1 and Attempt 2

			Paired differences			t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean			
EALT1508 (2021)	Test 1	Attempt 2 – Attempt 1	2.96	3.63	0.159	18.626	521	0.000
	Test 2	Attempt 2 – Attempt 1	2.92	4.3	0.16	18.32	728	0.000
EALL1508 (2022)	Test 1	Attempt 2 – Attempt 1	2.57	3.43	0.17	14.77	386	0.000
	Test 2	Attempt 2 – Attempt 1	2.07	3.73	0.18	11.698	445	0.000

#### 4. Discussion

In essence, this assessment task had two important goals. Firstly, it needed to assess and develop higher order thinking, and secondly, it had to provide opportunity for students who were struggling for whatever reason, to learn and improve their academic performance. The first goal was mostly addressed through the design of the test items and the setup of the test within Blackboard. The second goal can be evaluated through the performance data presented in the previous section. The statistical analysis supports the following findings:

- More than half the students chose to engage more than the bare minimum (one attempt). This could imply that students are willing to put in more effort, provided they understand the benefit.
- Those students who only attempted the test once generally performed better on their first attempt than those who did the test a second time. This shows that higher-performing students likely chose to complete the test only once, while students who are struggling could make use of the feedback and a second attempt to continue learning independently.
- Students who completed a second attempt were able to improve their marks in the second attempt to the same level as the students who chose to complete one attempt only. This shows that 'struggling' students could learn and improve to the level of 'stronger' students, if given appropriate guidance and opportunities.
- In both course groups, more students used their additional attempt in the second test than in the first test. This could indicate an increase in the perceived usefulness of this task type from the first to the second test.

## 5. Conclusion

The findings above mostly indicate that the instructional goals outlined at the start of this task were reached. Students were challenged both academically and supported practically through this assessment intervention. Further research could be done on the students' perceptions of the usefulness and/or relevance of this task type or its role in scaffolding academic writing instruction. All in all, this task type reached its initial instructional goals and proved a useful assessment tool to consider when doing assessment planning. It can bridge the gap between theoretical writing instruction and creating academic texts without adding to the teaching and marking responsibility of teachers. Additionally, its flexible setup can provide students with learning and assessment support to promote equality of outcomes in a diverse higher education context.

## References

- Alsaleh, N.D. 2020. Teaching critical thinking skills: Literature review. *The Turkish Online Journal of Educational Technology*, 19(1): 21-39.
- Behar-Horenstein, L. & Niu, L. (2011). Teaching critical thinking skills in higher education: A review of the literature. *Journal of College Teaching and Learning*, 8(2): 25-42. <https://doi.org/10.19030/tlc.v8i2.3554>
- Burns, E.R. 2010. "Anatomizing" reversed: Use of examination questions that foster the use of higher order learning skills by students. *Anatomical Science Education*, 3(6): 330-334. <https://doi.org/10.1002/ase.187>
- Cummins, J. 1979. Cognitive/academic language proficiency, linguistic interdependence, the optimum age questions and some other matters. *Working Papers on Bilingualism*, 19: 121-129.
- Degeng, P.D., Hamamah, Emaliana, I. & Hamsari, Y. 2022. Providing feedback for a large writing class: An application prototype for integrated academic writing online assessment. In S. Prawoto, R. Rusmawati & S. Muttaqin (Eds), *Proceedings of the 1st international conference on language, literature, education and culture*, 93-99. <https://doi.org/10.4108/eai.9-10-2021.2319684>

Department of Higher Education and Training (DHET). 2020. *Students' access to and use of learning materials: Survey report 2020*. Pretoria: Government Printers. <https://doi.org/10.1080/13583883.2010.532565>

Drennan, L.M. 2017. Traversing the spaces of higher education through writing. *Reading & Writing*, 8(1): 1-8. <https://doi.org/10.4102/rw.v8i1.126>

Ebadi, S., & Rahimi, M. (2018). 2018. An exploration into the impact of WebQuest-based classroom on EFL learners' critical thinking and academic writing skills: a mixed-methods study. *Computer assessted language learning*, 5(6), 617-651. <https://doi.org/10.1080/09588221.2018.1449757>

Fernando, W. 2018. Show me your true colours: Scaffolding formative academic literacy assessment through an online learning platform. *Assessing Writing* 36: 63-76. <https://doi.org/10.1016/j.asw.2018.03.005>

Hattie, J. & Timperley, H. 2007. The power of feedback. *Review of Educational Research*, 77(1): 81-112. <https://doi.org/10.3102/003465430298487>

Lea, M.R. & Street, B.V. 1998. Student writing in higher education: An academic literacies approach. *Studies in Higher Education*, 23: 2, 157-172. <https://doi.org/10.1080/03075079812380364>

Lenchuk, I. & Ahmed, A. 2021. Tapping into Bloom's taxonomy's higher-order cognitive processes: The case for multiple choice questions as a valid assessment tool in the ESP classroom. *Arab World English Journal (AWEJ) Special Issue on Covid 19 Challenges* 1: 160-171. <https://dx.doi.org/10.24093/awej/covid.12>

Lillis, T., Harrington, K., Lea, M.R. & Mitchell, S. 2015. *Working with literacies: Case studies towards transformative practice*. Fort Collins: The WAC Clearinghouse. <https://doi.org/10.37514/PER-B.2015.0674>

McKinley, J. 2013. Displaying critical thinking in EFL academic writing: A discussion of Japanese to English contrastive rhetoric. *RELC Journal*, 44(2): 195-208. <https://doi.org/10.1177/0033688213488386>

Munro, N., Vithal, R. & Murray, M. 2015. (In)equity of exceptional academic achievement in South African higher education. *South African Journal of Higher Education*, 29(2): 218-236. <https://doi.org/10.20853/29-2-479>

NBTP. 2019. *The national benchmark tests national report: 2019 intake cycle*. Available at: NBT National Report 2019.pdf (uct.ac.za)

Ndibalema, P. (2022). Constrains of transition to online distance learning in Higher Education institutions during COVID-19 in developing countries: A systematic review. *E-learning and digital media*, 19(6), 595-618. <https://doi:10.1177/20427530221107510>

Pally, M. 2001. Skills development in 'sustained' content-based curricula: Case studies in analytical/critical thinking and academic writing. *Language and Education*, 15(4): 279-305. <https://doi.org/10.1080/09500780108666814>

Patterson, R. & Weideman, A. 2013. The refinement of a construct for tests of academic literacy. *Journal for Language Testing*, 47(1): 125-151. <https://doi.org/10.4314/jlt.v47i1.6>



Pereira, D., Flores, M.A., Simao, A.M.V.M. & Barros, A. 2016. Effectiveness and relevance of feedback in higher education: A study of undergraduate students. *Studies in Educational Evaluation*, 49: 7-24. <https://doi.org/10.1016/j.stueduc.2016.03.004>

Phejane, V.P. 2022. "The new normal": A case study on the emergent transition towards online teaching and learning in internal medicine and anaesthesiology at the university of the Free State. *Perspectives in Education*, 40(1): 164-178. <https://doi.org/10.18820/2519593X/pie.v40.i1.10>

Pillay, V. 2019. Displaced margins and misplaced equity: Challenges for South African higher education. *South African Journal of Higher Education*, 33(2): 142-162. <https://doi.org/10.20853/33-2-2692>

Scully, D. 2017. Constructing multiple-choice items to measure higher-order thinking. *Practical Assessment, Research, and Evaluation*, 22(4): 1-13. <http://dx.doi.org/10.7275/swgt-rj52>

Smit, R. 2012. Towards a clearer understanding of student disadvantage in higher education: problematising deficit thinking. *Higher Education Research and Development*, 31(3): 369-380. <https://doi.org/10.1080/07294360.2011.634383>

Tahira, M. & Haider, G. 2019. The role of critical thinking in academic writing: An investigation of EFL students' perceptions and writing experiences. *International Online Journal of Primary Education*, 8(1): 1-30

Wilson-Strydom, M. 2010. Traversing the chasm from school to university in South Africa: A student perspective. *Tertiary Education and Management*, 16(4): 313-325. <https://doi.org/10.1080/13583883.2010.532565>