

# COVID-19 CATALYSING ASSESSMENT TRANSFORMATION: A CASE OF THE ONLINE OPEN BOOK EXAMINATION

**S. Meeran\***

Department of Curriculum and Instructional Studies

<http://orcid.org/0000-0002-6695-8161>

**M. N. Davids\***

Department of Educational Foundations

<http://orcid.org/0000-0003-2894-3951>

\*University of South Africa

Pretoria, South Africa

## ABSTRACT

Under COVID-19 lockdown conditions, the imposition of social distancing and restricted mobility, disrupted the traditional way of assessment in higher education. The closed book examination, conducted under proctored conditions, had to be substituted for the online open book examination (OOBE), posing challenges to both conventional and Open Distance Learning (ODL) institutions. The OOBE became a new experience to lecturers and students. Considering COVID-19 as a potential catalyst for educational transformation, the experiences gained in this format of assessment presents a valuable frame of reference for future learning. The aim is to extract lessons from this innovative learning experience to inform future assessment practices. The study is set in the context of a B.Ed. (Hons) compulsory module, offered at an Open Distance Learning (ODL) institution in South Africa. It is guided by the research question: “what were students’ experiences of their first online, open-book final examination and what are the implications for policy, practice and research?” This is a qualitative study, using as data, student emails on their experiences of the OOBE. The results show that the OOBE is an innovative assessment practice in higher education, in need of deeper understanding and (re)training. We conclude that the OOBE offers transformational opportunities in higher education assessment practices, to replace the traditional closed-book examination. We make recommendations to assist lecturers and students in approaching the OOBE in future.

**Key words:** alternative assessment, online open book examinations, COVID-19 pandemic, transformation, Open Distance Education

## INTRODUCTION

Despite the arguable challenges that many educational institutions have been experiencing during the COVID-19 pandemic, it is generally acknowledged that the shift to online learning has both positive and negative consequences. This differentiated outcome in education can be

explained in terms of the unequal social contexts and the digital divide that leads to further academic inequalities (Jansen 2020). The educational sector cannot ignore the consequences of a growing digital divide and digital exclusion (Nemer 2015) between rich and poor countries, as a factor causing greater inequality. The large-scale inequalities between rich and poor countries are further aggravated by a growing “vaccine nationalism”, a term coined to refer to the emergence of vaccines that became available to some countries but not readily accessible by others, mainly due to a lack of resources (Gupta 2021, 7021).

Notwithstanding the educational devastation caused by the COVID-19 pandemic at a global level, some researchers explained its impact as a mere shift to online education (Duraku and Hoxha 2020), while others refer to it as a systemic shock that offers opportunities to rethink the purpose of education in deeper and more inclusive ways (Soudien 2020). This article explores the academic opportunism of Soudien (2020), hoping to stimulate thinking around responding to COVID-19 positively instead of moaning about its devastation. Our purpose here is to investigate how, serendipitously, COVID-19 undermined and transformed an age-old practice of the closed-book final examination by replacing it with the online, open-book examination (OOBE). While highlighting the pedagogical and theoretical implications of shifting from the closed-book to an OOBE, methodologically, we employed a local case study, bound by a compulsory B.Ed. Honours module, that was examined under COVID-19 lockdown conditions. As the educational sector encapsulates a significant percentage of the world population, its role as a catalyst for educational reform should not be overstated. However, the potential to subvert and change dominant and stubborn practices that survived over centuries, for example, the closed-book final written examination, should not be underestimated as an opportunity for educational transformation (Williams 2004).

To curtail the spread of the COVID-19 virus, governments around the globe, imposed lockdown conditions that resulted in the closure of educational institutions, affecting more than 1.575 billion students in approximately 188 countries (UNESCO 2020). A report shows that the lockdown of schools were more prominent in some continents such as Africa and South America, then in other parts of the world (UNESCO 2020). We estimated the impact of the lockdown on the South African educational sector, by using the 2016 education statistics from the South Africa’s Basic Education Department. Potentially 13 307 830 learners and students attended 29 749 education institutions, staffed by 440 151 educators would be affected under the COVID-19 lockdown conditions (DBE 2018). Using the same year’s (2016) higher education statistics, the pandemic affected 26 public higher education institutions and 50 TVET colleges, with an enrolment of 2.3 million students (DHET 2018). The COVID-19 lockdown conditions would therefore affect approximately 15,5 million people in the educational sector,

excluding those working in the economy and elsewhere. Bearing in mind that the youth of today are the future adult generation of tomorrow, the size of the school going population represents a significant percentage of the citizenry. Therefore, the quality of curricular experiences of youth involved in educational institutions today, will potentially influence the behaviour of the citizenry of tomorrow and in the context of this study's focus, contribute to social transformation.

The closed-book final written examination has for a long period been regarded as the legitimisation for quality learning to take place. Those who are successful in this examination are rewarded with a promotion to the next level, or achievement of a qualifications, assuring them that they are now more knowledgeable and worthy custodians. We argue in this article that the closed-book, proctored, final examination entrenches largely a culture of passivity and contributes towards knowledge reproduction, while the purpose of education is ostensibly to produce critical thinking and knowledge construction (UNESCO 2015; Freire 1986).

The institutional context of this article is a South African open distance and e-learning (ODEL) institution where an online mode of delivery is the norm. The institution is the largest online university in Africa with over 400,000 registered students, drawn nationally and from 130 countries. The disciplinary context of this article is a compulsory B.Ed. Honours module: Comparative and History of Education in the South African context. Teaching and learning activities, including formative assessments for this module are conducted online, whereas the summative assessment is normally a three-hour, venue-based examination conducted under proctored conditions. When the university administration realised that the COVID-19 pandemic would disrupt its normal day-to-day administrative and academic routine, university lecturers were informed that the traditional closed-book venue-based final written examination should be replaced by online assessments. For the first examination session (the 2019 exams written in early 2020), the multiple choice, portfolio and closed-book examination formats were given as options. For the second final assessment, the choices were altered and the online open book examination (OOBE) became the only examination format to follow. Informed by a constructivist critical pedagogical conceptual framework and a case study methodology, we respond in this study to the research question: "what were students' experiences during their first online, open-book final examination and what are the implications for policy, practice and research?". Our data sources are unsolicited student emails, reflecting their experiences of OOBE and the module results of four final examinations, including during COVID-19. Based on our findings, recommendations are suggested to inform future policy, practice and research.

Following this introduction, study focus and research question, this article unfolds under the following sub-headings. Firstly, we expound the literature concerning the notions of the

closed-book examination as knowledge reproduction, its relation to the OOBEx and the concept of critical thinking. Secondly, a conceptual framework comprising of constructivism, critical pedagogy, and digital consciousness is explained. A brief note on the methodology is followed by our findings and in conclusion, we respond to the research question as the basis of our recommendations.

## **THE CLOSED-BOOK FINAL EXAMINATION, KNOWLEDGE REPRODUCTION AND CRITICAL THINKING**

We agree that the closed-book final written examination in an OOBEx context has become “an anachronism” given the integration of online technologies in teaching and learning (Williams 2004, 934). The 21<sup>st</sup> century educational landscape is characterised by advanced information and communication technology (ICT), using customised software programmes and hardware devices to provide interactive, knowledge-based digital platforms. The traditional way of setting a final examination has been questioned on the basis that it does not examine deep conceptual understanding and process skills (Entwistle and Entwistle 1991). In their study, Entwistle and Entwistle (1991) interviewed students about the revision strategies they had adopted and their attempts to develop deep conceptual understanding. Their findings suggest that there are links between the “revision strategies” adopted and the forms of understanding reached by the students (Entwistle and Entwistle 1991, 205). The study questioned the extent that students were prepared as critical thinkers when it concluded that traditional degree examinations do not consistently “assess deep, conceptual understanding” (Entwistle and Entwistle 1991, 205). However, the practice of revising previous question papers is also rife at South African universities and across various disciplines according to this site found on the internet: <http://osprey.unisa.ac.za/phorum2/read.php?311,208522dependence>. Student emails serve as evidence of their reliance on previous question papers as part of their preparation strategy. These emails point towards practices of reproduction rather than critical thinking and self-assessment. They support the view that students do not prioritise deep learning and conceptual understanding as learning objectives. The email texts have been amended to hide institutional and student identities.

Student 1: “Kindly assist me with the previous exam question paper and memorandum for DAC1703, October/November 2018 and SSW1401, October/November 2018.”

Student 2: Hi, can you please assist me with previous questions papers and MEMO’S for EHHDJ and assignments answers. Email is Nnoto091@gmail.com or 777092@mylife.amsterdam.ac.za.”

In support of the argument that the final examinations according to the traditional format promotes knowledge reproduction instead of critical thinking, students described their strategy for their preparation as “cramming” the night before and “data dumping” on the day of the examination with little knowledge retention thereafter (Williams 2004, 934). While apologists for the traditional closed-book final examination argue that its format presents the best way to prevent cheating, they turned a blind eye to the research that claims that students cheat even under proctored examinations (Morgan and O’Reilly 1999, 80). As evidence that students cheat in closed book examinations, Morgan and O’Reilly (1999) cite the existence of university disciplinary boards created to deal with examination dishonesty (Morgan and O’Reilly 1999).

Williams (2006) asserts that in the information age the closed-book proctored final examination has become an anachronism, given the supposed purpose of education as being deep learning and critical thinking. While universities generally embrace the fruits of technology in their administration and pedagogy, they have arguably resisted to adopt ICT in conducting the final written examinations. ICT is employed for every conceivable task, but it seems that only when the realities of COVID-19 became manifest, the option of the OOBEE emerged as reality. The adoption of the OOBEE format has many hidden benefits, considering the budget cuts and austerity measures staring all higher institutions in the face. OOBEE institutions have students scattered all over the world and will be mindful of the savings accrued during COVID-19. The administration involved in the organisation of the closed-book proctored examination for example requires amongst others, human supervision, the hiring of examination venues in multiple cities and countries, staff required to post the question paper and then to resend the answer scripts back to the university for distribution and marking. While this tedious process may be something of the past, of greater importance is how university lecturers are prepared to transition from the traditional closed book to the OOBEE without compromising the academic integrity and quality. We return to this concern in the conclusion.

Researchers and international agencies endorsed the importance of critical thinking as an educational objective. Countries depend on their educational systems to prepare their future workforce to face present-futurist challenges such as the United Nation’s 17 Sustainable Development Goals (SDG) (Vieira, Vieira, and Tenreiro-Vieira 2018). SDG number 4, for example, deals exclusively with the role of education in the development of a better world. This SDG (paragraph 4.4) emphasises skills such as high-level cognitive and non-cognitive/transferable skills, such as problem solving, critical thinking, creativity, teamwork, communication skills and conflict resolution across a range of occupational fields (UNESCO 2015).

While a common critique of modern educational systems is its lack of teaching students

critical thinking skills, we argue here that COVID-19 can potentially accelerate critical thinking by transforming the final closed-book examination and replacing it with the OOB that requires the question paper to conform to certain criteria (discussed in the conclusion) favourable to critical pedagogy. According to Freire (1986) critical thinking is about questioning all the assumptions about what is truth, it is to view arguments as open to debate rather than the last word and is one's ability to distinguish between fact and opinion (Rahimi and Sajed 2014, 43). Critical thinking is about questioning and dialogue, while critical pedagogy is rooted in the notion that education should play a role in creating a just and democratic society (Yi-Huang Shih 2018, 65). Freire's work on critical pedagogy recognises the relationship between education, politics, and liberation and therefore foregrounds the context of the lecturers and the student. While pedagogy is defined as the study of how teaching and learning takes place, critical pedagogy focuses on how, what and why content is being taught (Nouri and Sajjadi 2014).

Although some lecturers claim to be teaching their students in a critical way, when these students are confronted with the closed-book, final written examination, they discover that they will be examined on the reproduction rather than the production of knowledge through creative and critical thinking. Critical thinking requires a special approach and differs from the dominant passive learning and "banking" concept of education as propounded by Paulo Freire (Yi-Huang Shih 2018). The closed-book examination can be explained as an example of a banking activity as student learning is passive and does not require critical questioning and dialogue. Our attention now turns to the OOB as a potentially constructivist and critical option of assessment.

The practice of the open-book examination is not unknown in South African educational institutions, but it is rarely used. One of the authors of this article's first and only experience of an open book examination was for the Masters in Education (MEd) degree which was a 4-hour paper. Students could bring their books and notes in the examination rooms. Examination guidance was given in the form of question themes before the examination. In the examination, the themes were formulated in question format. In preparation for the examination, students had to familiarise themselves with all the reading materials without bothering to commit any text to memory which was a common technique used by students. The positive memories of this experience resonate with what has been reported by Brightwell, Daniel, and Steward (2004) such as a reduced level of anxiety and a greater concern with comprehension rather than memorisation. Theophilides and Dionysiou's (1996) study involving two sets of students taking a closed book and open-book examination claimed that the marks achieved by students in the open book examination showed no difference to those obtained under the closed book

examination. The literature on the open-book examination highlights the advantage of assessing higher order thinking skills such as analysing, synthesising and evaluating (Brightwell et al. 2004). Student surveys almost always prefer open-book as opposed to closed-book examinations. Amongst the students' perceptions of open-book examinations, the creative use of course content, less examination stress and an increased opportunity for self-evaluation and student regulation of content were noted (Theophilides and Dionysiou 1996). The same study showed that university lecturers perceived open-book examinations to be promoting thinking rather than memorising and regurgitation.

Before advancing our experiences with a recent OOB in an ODEL institution we will now expound the conceptual framework which we employ to argue that the OOB can potentially advance critical thinking and transform the antiquated practice of the closed-book, proctored examination (Williams 2004; 2006).

## **TOWARDS A CONCEPTUAL FRAMEWORK: OOB AS CRITICAL CONSTRUCTIVIST PEDAGOGY**

A constructivist learning approach provides an appropriate theoretical point of departure when education is expected to bring about transformation through critical thinking (Rahimi and Sajed 2014). A suitable conceptual framework to study the OOB as a critical constructivist pedagogy would include the concepts constructivist pedagogy (Biggs 1996), critical thinking (Freire 1986), and digital consciousness (Nemer 2015). Researchers emphasise the role of critical thinking in education (UNESCO 2015) as the promotion of learner-centeredness and to counter learner passivity through a dialogical pedagogy (Yi-Huang Shih 2018, 64). In the context of higher education, a constructivist approach implies alignment between learning outcomes, pedagogy and assessment (Biggs 1996). According to constructivist philosophy, meaning is constructed by the learner and not imposed externally, which would be a form of instructivism. Instructivism is an objectification of knowledge, meaning that knowledge exists independently of the knower and understanding is coming to know what already exists (Williams 2006). In short, constructivism focuses on knowledge construction and not knowledge reproduction (Herrington and Standen 2000).

In an ODEL learning environment, the student communicates online through the institutional learning management system (LMS) using a hardware device via internet connectivity. The OOB employs electronic methods to manage cheating and plagiarism. In an OOB, there is no human invigilator and an authentic smart space is created with the use of a QR-code, a smart phone to scan and activate an invigilation application through internet connectivity and plagiarism software such as Turnitin (Tii). The LMS is set according to a start

and end time, allowing the student to download the question paper and upload the answer script.

Freire's (1986) notion of critical pedagogy is apposite to inform the construction of the question paper for an OOB. Freire (1986) acknowledges the oppressive conditions as an outcome of historical injustices in which education took place. In South Africa, most students come from historically disadvantage communities and the COVID-19 pandemic increased the wealth gap between the rich and poor as explained with reference to the digital divide and digital exclusion (Nemer 2015). In congruence with Freire's concept of critical pedagogy, the notion of digitality which recognises the role of ICT as incorporated in the conceptual framework, is included. Freire's notion of critical pedagogy makes provision for education to critique traditional educational practices that perceive learners as empty vessels to be filled with knowledge (Freire 1986). In place of the closed-book examination, the OOB offers pedagogical space to promote a constructive critical pedagogy to transform traditional educational practice significantly. What follows is a brief methodological note, explaining the research question and the data used to respond.

## **A METHODOLOGICAL NOTE AND DATA ANALYSES**

Our primary data sources are unsolicited student emails depicting their experiences in the OOB, and comparative results of student pass percentages in the last four module examinations. An unprecedented number of student emails barraged the inboxes of the module lecturers after the OOB. A randomly selected number of emails: fifteen (15), were perused and copied from an author's inbox. Common concerns that emerged from the texts were coded and then categorised under identified themes. Four main themes emerged from the email texts: 1- technical struggles with uploads and the question of time; 2- epistemological and cognitive difficulties; 3- reliance on traditional reproductionist practices and 4- fear of failure and uncertainty of results. Selected quotations were used as email texts, after careful editing and categorisation.

The authors reflected on the findings in the light of the literature to respond to the research question. The purpose of the reflection was to provide guidelines for the construction of an OOB question paper because university lecturers have generally not been trained to set OOB as a final form of assessment. Tied up with the main objective of the article, is the serendipitous argument that the COVID-19 pandemic provides a catalyst to promote critical thinking through the replacement of the outdated closed-book examination with the OOB, which is compatible with an ODEL pedagogy.

## **FINDINGS AND DISCUSSION**

The main findings discussed as themes are presented in this section. Email texts have been



categorised into four broad findings and are used to develop guidelines to assist lecturers and students to better use the OOB as a critical constructivist pedagogical approach to teaching and learning.

### **Technological challenges and insufficient time allocation**

On the day of the examination, module lecturers were on stand-by to manage student phone calls and emails. Students requested assistance to upload their scripts and some had connectivity problems. The university made available a dedicated URL – link which were useful to some but not to others. Below are two examples of email requesting technical assistance.

Student 1: "... the above matter bears reference. I have been trying to submit my examination online, but it does not give me the submit option, I therefore uploaded my exam here to serve as reference. Banking on your positive response."

Student 2: "I am failing to attach at (institution's name) my exam answer script. i have never ever use the program, please accept my exam script."

Some students struggled with digital technology and connectivity which consumed the time allocated to them. Student's complaint about the length of the paper which also impacted on time management.

Student 3: "I just wanted to express that in my opinion this exam did not provide a true opportunity to reflect the skills and knowledge. I found the textbooks and the content with module very interesting and I enjoyed the assignments, but the exam did not give ample time for students to write what they know."

In this theme, student emails raised the importance of a stable ICT infrastructure both on the side of the institution and the student. Some student had poor connectivity problems and could not upload. The university granted those students a default supplementary examination so as not to punish them due to ICT failures and challenges. The setting of the OOB should allow enough time for students to complete the question paper.

### **Epistemological and cognitive difficulties**

In this theme students expressed their difficulty in understanding the question content due to an increase in degree of difficulty in the questioning techniques. Answers were not expected to be recalled or a regurgitation of memorised answered but rather that students had to respond giving their personal understanding. Mostly higher order questions were asked. It seems that the first OOB was a shocking experience which students found significantly different when compared

to their previous final examinations.

Student 4: “I humbly request that the (module name concealed) exam be marked with leniency as the paper was extremely difficult under an unrealistic time frame ... I had prepared for a content-based examination using past year papers and assignments as the university does not demarcate/scope work. I was not issued any sort of preparation for the exam I was given. My answers written were not the true reflection of my capabilities as I did not expect the paper to be a lengthy comprehension. Granted there were a few questions that were of a moderate level to navigate through however in order to give a true reflection of work the time was not enough. Towards the end it became about trying to finish the paper rather than focusing on the content of the answers. Had I focused on the content of my answers I would not have finished the paper.”

### **Reliance on traditional knowledge reproduction**

In this theme students objected that they had to deviate from the traditional practices of revising previous question papers. Although they were informed that the examination would be in a different format and not based on previous examination question papers, some of them did not receive the notification or did not visit the announcement tool on the LMS. They were duly informed and urged to obtain a holistic understanding of the module material instead of having to recall memorised knowledge. This tension detected in the students’ responses is indicative that a shift from the dominant reproductionist to a constructivist approach, will potentially be destabilising to them and thus potentially the beginning of a new way of learning.

Student 5: “I have been with (institution’s name) for years now and we are used to the way (institution’s name) sets their papers and we prepare as such. Even if 2020 students were given preparation, I was a 2019 honours student and did not receive any paper like this which took me by surprise. Upon conversing with many other students who wrote this paper everyone felt the same. 3 hours was sufficient when writing an exam on the (institution’s name) premises on a content-based paper however this kind of examination requires hours possibly a day or two of work in order for the answers to be of an honours graduate level. It was a truly stressful paper.”

The practice of using previous years question papers is a widespread practice at this ODEL university and elsewhere as evidenced in the literature cited earlier (Entwistle and Entwistle 1991, 205).

### **Fear of failure and uncertainty of results**

Some students objected vehemently to the OOB as format because they were not sufficiently prepared: an accusation which holds true, but the matter was out of our hands. Often students’ fears are exaggerated such as the one cited below. The new OOB experience instilled fear and concern about the outcome of the results. In this email, the student predicts that no one will

successfully pass this module which will be shown to be an overstatement.

Student 6: “The issues raised above are serious to the point of questioning the integrity of the content, the processes, and the outcomes of the examination paper. The issues raised above will negatively impact the chances of any student in this course to successfully complete the course and attain the Honours degree. But beyond that, it will impact the academic standing of the Department, and by extension, the University as a whole.”

To engage the fears of the above cited student, we decided to investigate the module’s previous statistics to find out how students performed in relation to this OOB. We benchmarked this exercise against a study conducted by Theophilides and Dionysiou’s (1996), that found no significant difference in results between two groups of students who completed a closed-book and an open-book examination. The authors of the present study requested the recent four results of the same module and compared it with the last OOB. We found no significant difference: 85,2 per cent (see Table). Interestingly, the format of the final examination taken 2020 was a home-based portfolio and once again the pass percentage was 84,5 per cent.

**Table 1:** Module statistics supplied by institutional unit (only pass percentages are relevant)

	<b>2018 Normal closed book examination Duration: 3 hours</b>	<b>2019 Normal closed book examination Duration: 3 hours</b>	<b>2020 Portfolio Examination (home-based; 24 hours)</b>	<b>2021 Final OOB (home-based; 4 hours)</b>
Pass rate	82,5%	86,6%	84,5%	85,2

What the data allow us to do is to argue that the general outcome of the OOB is not much different to the results of the closed-book examination (2019) and the portfolio examination (2020), confirming the study of Theophilides and Dionysiou (1996).

What follows is a focused discussion of the findings to explain how student experiences in the OOB can assist lecturers in approaching the OOB.

## **CONCLUDING REMARKS**

As an entrenched practice in an ODEL institution, the closed-book final examination’s fit for purpose should be evaluated, considering the theory of constructive alignment that connects educational objectives, pedagogy and assessment (Biggs 1996). The format and content of the OOB as a substitute for the closed-book option should become the topic for training sessions to develop lecturers’ critical skills. The position of international and national documents on critical thinking in pedagogy should inform university policy (UNESCO 2020). The closed-book, proctored examination should be expounded as incongruent and obsolete in an ODEL

pedagogy (Williams 2006). Lecturers and students need to become acquainted with a constructivist critical pedagogy which will require refocusing on context, concerns for justice, critical thinking and higher order cognitive skills (Freire 1986; Brightwell et al. 2004, Yi-Huang Shih 2018).

An area of training for lecturers would be the preparation and setting of the OOB question paper. Questions should be clear and unambiguous to avoid confusion and time wasting. Questions should be set on real life-based situations that will invite an interpretation and application of knowledge rather than recall and memorisation. The questions should aim at getting responses that through critical thinking, deep learning and conceptual understanding are promoted (Entwistle and Entwistle 1991). In this regard, the use of the multiple choice (MCQs), essay-type, cartoon- and text-based questions, for example an unseen material relevant to the module content and objectives, may be explored (Nielsen 2020). With a conceptual-theoretical shift towards constructivist critical pedagogy, lecturer should know the difference between the two types of question papers. Time allocation should be measured in the light of the length of the paper, the time to read the text and the degree of difficulty of the questions. In the evidence drawn from student emails, the time factor impacted on their ability to complete the question paper. While the uncertainty of technological connectivity will always exert pressure, time/duration should be realistic (Nielsen 2020). Time allocation should be employed as a leverage to minimise the students' opportunities for consultation and internet browsing (Herrington and Standen 2000; Freire 1986). A recommended practice for the lecturer is to put the questions through a Google search, to check potential internet-based answers before finalising the question paper. The question paper should create space in the answers for student voice, dialogue and critical thinking.

Given the socio-economic devastation of the COVID-19 pandemic on poorer societies, an ODEL pedagogy cannot ignore the presence of the digital divide in the implementation of its teaching and learning programme (Nemer 2015). The OOB will increasingly introduce technology to improve surveillance and efficacy, which should not disadvantage the poor. For example, we experienced for the first time the use of an invigilation application activated by scanning a QR-code with a smart phone. To ensure fairness in assessment, students should be exposed to these technologies prior to the examination and they should not be digitally excluded.

As an emerging research interest, the experiences of lecturers and students involved in the OOB should be a topic for ongoing inquiry. There is a dearth in international and local research on the OOB. Available South African journal articles mostly report on Accounting Science, Taxation and Statistics (Du Preez 2015), while Education and the Human Sciences are

left wanting. Future research activity and outputs are required to increase efficiency in the implementation of the OOB. Now that it has been introduced in an ODEL context, research should not be limited to the development of technological support, but should encompass curriculum, pedagogy and assessment in the furtherance of a constructivist critical approach to teaching and learning.

To rethink the purpose of education and avoid an (in)convenient return to what existed before the COVID-19 pandemic would require more than the academic opportunism expressed by Soudien (2020). We agree that the role of education should be reconceptualised to align with the purposes of deep learning and inclusivity, but that will require a return to the drawing board and the plotting of a way forward as a matter of urgency. As an entry point to this daunting journey of renewal albeit under trying conditions, this article identified the OOB as offering a significant epistemological focus to initiate a broad constructivist critical pedagogical approach to transform an unequal and ailing educational landscape: an opportunity worth grabbing, but requires more than the opportunism that prevails.

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### Competing interests

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