A critical review of student assessment practices in distance education in an emerging economy: benchmarking practices against policy

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Abstract

Higher education in emerging economies has taken advantage of several technology affordances for student assessment in the digital era. However, the use of educational technology remains an area of concern in this context because of unequal technology terrain. This is exacerbated for the distance education, where students work and live in remote areas. Although distance education providers in emerging economies have started to adopt alternative student assessment strategies, their contexts often force them to continue to use conventional assessment methods. Against this backdrop, – through a pragmatic mode of inquiry – the authors describe a five-phase study in which they identified the student assessment elements in national quality criteria that are rooted in international standards. They benchmarked these against the practices at a higher institution, highlighting good

practices and inherent challenges. The findings are discussed in the light of transactional distance theory (TDT), with possible implications for assessment in a digital era. Further research areas are highlighted.

Keywords: Distance education; higher education; quality criteria; student assessment; transactional distance theory

Introduction

The need to accept distance education as a major means of opening up access to higher education has been exhaustively debated. This is because the conventional mode can no longer cope with the number of prospective students for higher education. The distance education mode is also very relevant for teachers' in-service training. Despite its contributions and possibly yet untapped potential, the challenge of distance education is to continually boost public confidence with regard to providing service of a good quality and value for money (Kahu & Nelson, 2018; Kaliisa & Picard, 2017).

Excellent student assessment techniques cannot be detached from the provision of quality service in distance education. Evidence shows that distance education is still regarded as second class among some stakeholders, which is exacerbated by its high drop-out rates (Moe-Pryce, 2012; Council on Higher Education (CHE), 2014). Even though the definition of the term "quality" is fluid, as it is always determined by the perception of the person defining it, there is consensus that ensuring the quality of distance education programmes is paramount to its acceptance. This is even more so in emerging economies. Such economies denote developing countries that are no longer relying on agriculture and exportation of raw materials, but rather on productive capacity (Amadeo, 2018). One of the difficult challenges identified in The New Media Consortium (NMC) Horizon report

(The New Media Consortium (NMC), 2017) is advancing digital equity – a challenge that is more pronounced in developing countries due to lack of bandwidth and its high cost. This problem has dire consequences for the use of technology for student assessment in this context (Biao, 2012; Letseka & Pitsoe, 2013). Therefore, the rationale for this study included the shift from the process of education to student learning outcomes for programme and institution evaluation, and the value of assessment for distance education students, which includes student motivation and retention (Yorke, 2001; American Psychology Association (APA), 2002).

For this study, we explored the transactional distance theory (TDT) of Michael Moore (Moore, 1993), which was originally developed to determine the quality of learning material. However, scholars have found this to be applicable to a wide range of quality matters in distance education (Martin & Kumar 2018; Gokool-Ramdoo, 2008; Anonymous et al., 2011; Anonymous, 2007). In addition, we also explored the quality criteria of the National Association of Distance Education and Open Learning in South Africa (NADEOSA), which relates to student assessment in South Africa, as agreed upon by distance education providers. NADEOSA is a body that facilitates collaboration among distance education and open learning organisations in South Africa. It also exerts its influence on adequate policy, and provides and enhances quality assurance in the field (NADEOSA, 2018). The mixed-methods approach comprising a literature review, document analysis and surveys, has been applied to the assessment practices of an institution in order to evaluate the quality of its practices.

The following were therefore the research questions:

- What were the quality criteria identified by NADEOSA regarding student assessment practices?

- To what extent do these guide the praxis of a distance education provider, and what are the identified good practices and inherent challenges?
- With regard to student assessment, to what extent can higher education benefit from the tenets of TDT, irrespective of the delivery mode?

Although the term "distance education" has metamorphosed into other terms, such as "open distance learning" (ODL) and "open distance e-learning" (ODeL), we prefer to use the term "distance education". This is because, although the unit of analysis for the study describes students who can study in their own time, the programme for which they are registered is not open. According to Bates (2008), distance education students must meet the university's admission requirements for the same programme that is presented in the contact mode.

Literature review

Assessment is a term used to describe the different methods of collecting information to evaluate the outcomes of educational programmes. Assessment could be formative to establish how much has been learned or summative, to evaluate learning outcomes in order to sum up what has been achieved (Jones et al., 2017; Anonymous et al., 2011). Student assessment in distance education, irrespective of type, has evolved over the years with an advancement in the use of technology, coupled with the realisation that assessment is pointless if it does not inform the decisions being made about instruction, learning, and student needs and engagement. Assessment for learning is believed to make students more accountable and improve their performance because it encourages students to use assessment as a learning opportunity (Kahu & Nelson, 2018; Jones et al., 2017; Anonymous et al., 2011). The shift in the view of assessment, from the assessment of learning to assessment for learning, over the years is of importance to this study, as it

substantiates the necessity for a review of assessment practices along the line of the new orientation, which is about assessment for the purpose of learning. Technology in distance education is the new frontier, and incorporating this in assessment is one of the techniques to be used in the facilitation of student learning. Technological advancement for student assessment in distance education does not come without its challenges in the context of emerging economies such as South Africa, which could be linked to the slow uptake of technology and the continued use of paper-based assessment practices in some instance (Gil-Jaurena, 2013; Chaudhary & Dey, 2013; Biao, 2012). Kaliisa and Picard (2017) found that, while the introduction and use of technology has its benefits, there are also numerous challenges with the integration of technology in higher education. Inadequate infrastructure, students' lack of access to modern devices and the internet, lecturer resistance and a lack of the required skills for technology integration, especially for designing assessment, were among the challenges identified.

The purpose of assessment in distance education does not differ essentially from its purpose in the contact mode (Martin & Kumar, 2018; Chetwynd & Dobbyn, 2011). However, effective feedback on assessment is nowhere more important than in distance education courses, where comments on assignments may be the only form of learning communication between tutor and student (CHE, 2014).

One of the areas of concern for quality assurance in distance education is student assessment. Although student assessment is a contentious and confusing issue throughout higher education institutions (Boud & Molloy, 2013), this is more serious for distance education in the developing context due to more pronounced transactional distance between the students and the institution. The ten-year cohort study on higher education in South Africa (CHE, 2016) paints a very dismal picture of an unacceptably high dropout rate for distance education. This is a common phenomenon in distance education

regardless of the context. There is ample evidence from literature that reasons for the high dropout rate in this mode of study are multi-faceted (Bowles & Brindle, 2017; CHE, 2016). Almost all documents on the accreditation of distance education programmes emphasise student assessment as one of the criteria that determines their quality (CHE, 2016).

Background to the study

NADEOSA was formed in 1996 out of 58 organisations involved in distance education, including public, private-for-profit and non-governmental organisations. The NADEOSA quality criteria were initially developed in research conducted for the Department of Education, but were later revised through a stakeholder process involving the distance education community (Welch & Reed, 2005). One of the 13 criteria discussed by NADEOSA (2003) is student assessment (Criterion 6). According to this criterion, assessment is regarded as an essential feature of the teaching and learning process. It should be properly managed, and should meet accreditation bodies' and employers' requirements. Figure 1 below depicts the main elements of assessment identified by the body as assessment design, quality assurance of assessment, assessment management, and security. It also depicts some of the sub-elements.

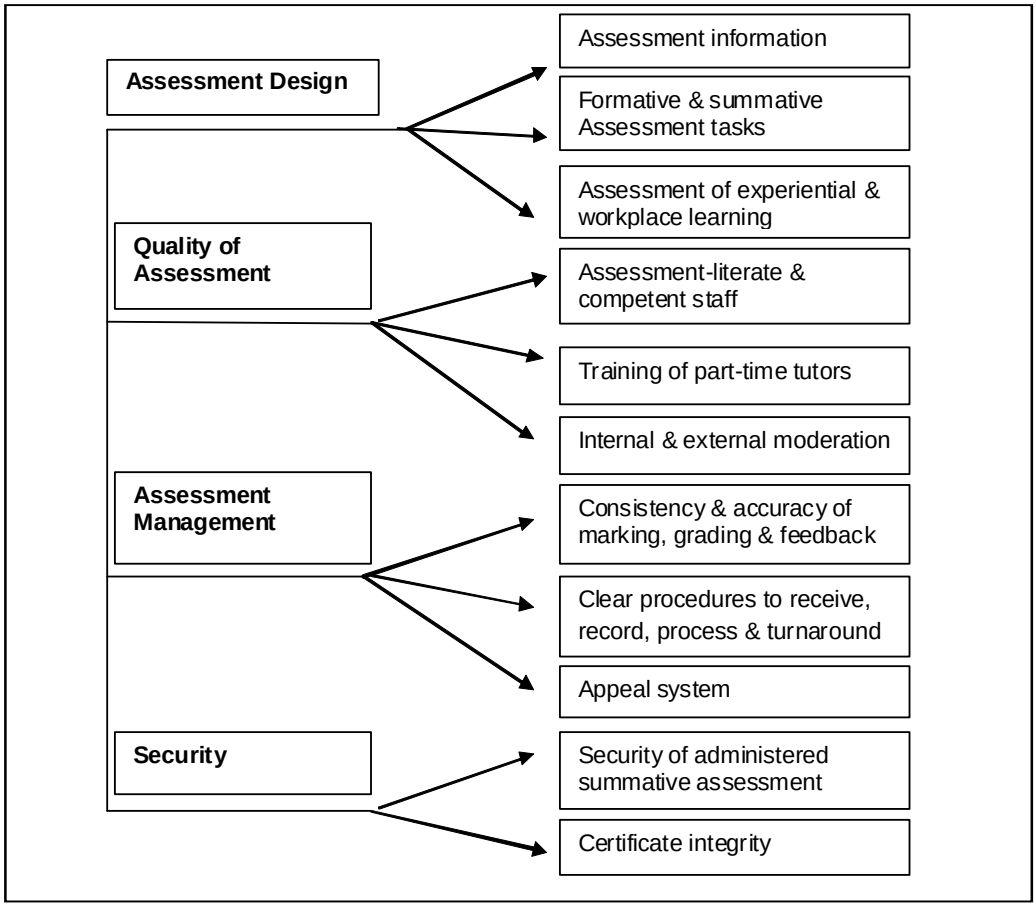

Figure 1. Elements of NADEOSA's quality criteria on student assessment (adapted from Welch & Reed, 2005).

This criterion is directly linked to worldwide standards on the practice of distance education (CHE, 2016; NADEOSA, 2003), which makes it possible to adapt this paper and its findings to similar contexts.

Although the university under discussion is not a distance education university, its Faculty of Education, presents some teacher education programmes through a dedicated unit for distance education. Since its inception in 2003, the unit has graduated over 30 000 students. In this section, the assessment practices of the provider are benchmarked against NADEOSA's assessment criteria. We highlighted good practices and inherent challenges that led to the investigation discussed in this paper.

The university under discussion has a policy on distance education. The purpose is to guide and inform the institution's distance education initiatives (Anonymous, 2009). We discovered that the quality criteria of the policy were all aligned with NADEOSA's quality criteria because NADEOSA's quality criteria were present in the distance education policy of the university under discussion. The four major elements of NADEOSA's quality criteria regarding assessment practices were also inherent in the policy. These will be discussed later in the light of assessment practices at the institution.

Research methodology and data analysis

For this study, we adopted the pragmatic approach, in which both qualitative and quantitative research methods were combined. According to scholars (Onwuegbuzie, Leech & Collins, 2010), the mixed-methods approach affords us the opportunity to combine the advantages of both qualitative and quantitative methods. It also enables us to have a more complete understanding of the phenomenon and to confirm quantitative measures with qualitative experiences (Creswell, 2013). In this paper, the sequential approach has been used, with more emphasis on the qualitative method. The focus in the qualitative approach is on documents made up of policies and research reports. On the other hand, for the quantitative approach, we made use of a survey, which was analysed using quantitative data analysis software (SPSS).

Description of the research procedure

The research procedure involved five phases, which are described below.

Phase 1

The unit developed surveys for both academic and student administration services, which were given to students during contact sessions. This paper focuses on the administration

evaluation form given to students in Block 4 of the BEd (Hons) in Education Management, Law and Policy Studies during one of the long contact sessions (held in June) over a period of three years (2012 to 2014). Questions in the survey comprised a five-point Likert-scale evaluation, with space for comments on items that ranged from student administration booklets, packaging and posting, administrative short message services (SMSs), fax services, the call centre and the use of email. Other items included the contact session, examination, administration of assignments, and students' overall experience of distance education at the institution. Table 1 below shows the contact session periods with the accompanying number of returned surveys for each period.

Table 1. Student participation in the survey during contact sessions.

Period of contact session	Attendance at contact session	Return of survey	Percentage of attendance
June 2012	1 815	1 600	88%
June 2013	718	650	91%
June 2014	819	750	92%

The high return rate was probably due to the on-site distribution and collection of the survey.

Phase 2

Even though the unit made some attempts to address students' complaints regarding their assignments, it decided to conduct a full investigation into the matter in 2014. Thus, the research period was between 2014 and 2015.

Repeated feedback from distance education students indicated two major challenges regarding assessment practices at the university: delays in the delivery of assignments from students to the university and vice versa. This excluded students who submit and receive marked script via email. Students' complaints included scripts that were not signed or properly marked, the incorrect addition or non-addition of marks,

assignment covers not completed by markers, no clarity given to students on how the markers arrived at their obtained mark, and marked scripts without comments.

All these complaints were contrary to the policy requirements of both the university and NADEOSA, to which all service providers were expected to adhere.

Phase 3

The findings in Phase 2 caused the unit to start monitoring marked scripts brought in by markers for quality. The scope at this phase was limited to assignments that had just been marked by the markers, and were yet to be posted to students at the time of the investigation.

Due to the volume of the scripts, the unit, with the help of a module coordinator, developed guidelines to evaluate the quality of the marked scripts. Subsequently, some of the contact students who worked at the administration office on a part-time basis to open assignment packages were trained to identify scripts that were not in line with the guidelines.

A random sampling of 100 of the marked scripts by different markers was identified. The scripts were made up of 20 scripts each from five different modules. The sample yielded the following results:

- Only one marker (in a module) gave comments on all the students' scripts about their performance.
- One had comments on a few scripts.
- One marker did not comment at all on any of the 20 scripts sampled in his module.
- Many of the markers did not indicate their names on the cover page of the marked scripts as required.

Thus, it appeared that markers were not adhering to the contract they had signed. For instance, a student printed this on her assignment paper: "*Please feel free to comment in*

a constructive way" (student comment, 2014), yet the marker included no comments. This may suggest that there were some markers who did not look out for students' comments, or that some were not responding at all to students' comments, which should be in addition to their own comments on students' performance.

The findings of this initial study provided useful information on how markers handled marking, which suggested a hindrance to the university's view on regarding assessment as a learning facilitation strategy.

Phase 4

The above findings led to the development of a markers' survey that was divided into two sections. Section A contained general information regarding participants' biography, the department for which they worked, the number of modules they marked, their knowledge of the marking policy and where they resided. Section B focused on the logistics of marking, including the turnaround time of marking, the training provided by the module coordinator, rubrics, memoranda and guidelines for marking, communication with the module coordinator, remuneration and other challenges markers might have experienced.

Forty-five questionnaires were sent to all the markers via email, surface mail and personal delivery when they came to collect the scripts for marking. Of these, 40 (89%) had been returned by the time of compiling this paper. In the analysis of the participants' responses, more attention was paid to the possible impact of one negative response and its implications due to the large number of students involved in distance education. Table 2 below summarises the questionnaire and the participants' response rate.

Table 2. Summary of responses to questionnaire (n = 40).

Section A: General information

Questions		Number of responses	Response rate
1.	Department for which markers work		
	Educational Psychology	7	17.5%
	Education Management, Law and Policy Studies	33	82.5%
2.	Markers involvement in electronic marking	8	20%
3.	Willingness to mark electronic assignments	30	75%
4.	Marking of both assignments and exam scripts	37	92.5%
5.	Only assignment	3	7.5%
6.	Number of modules markers are involved in		
	1 module	36	90%
	2 modules	3	7.5%
	More than 3 modules	1	2.5%
7.	Experience of marking		
	1–3 years	16	40%
	4–6 years	8	20%
	7–9 years	9	22.5%
	More than 10 years	6	15%
8.	Knowledge of institution's policy on assignment marking		
	Yes	34	85%
	No	5	12.5%
	Missing frequency	1	2.5%

For the data analysis of the questionnaire, themes were developed that were matched against the relevant responses as indicated in Table 3 below. The code (M1/2015) refers to Marker 1, followed by the year. The same principle applies in all cases.

Table 3. Markers' responses to questionnaire based on themes.

Theme	Comments by markers
Assignment questions	*Module coordinators should rephrase questions in situations where a lot of students are failing. This is because the same errors are repeated every year.* (M1/2015)
	Change assignment questions as students tend to copy from previous years. (M8/2015)
Rubrics/memoranda	*Develop rubrics for every module (some modules do not have rubrics).* (M3/2015)
	Please attach rubrics to the packs given to markers – waiting for it wastes time. (M10/2015)
	Rubrics give students sufficient feedback on how they could improve their marks. (M21/2015)
Memorandum discussion	*Markers should have a forum for meeting and discussing their challenges and sharing skills and experience (after marking Assignment 2). The expenses of such a meeting should be catered for and should be compulsory for those willing to mark.* (M15/2015)
	There is a lack of proper "marking meetings", skills and management. (M30/2015)
	Memorandum discussions should take place before marking starts and should be held without exceptions. (M18/2015)
	Module coordinators should personally address markers with problems (e.g. mark allocation), and not talk generally. (M40/2015)
Turnaround time	*Two weeks is insufficient time to mark and give full and comprehensive feedback to students (more especially in the new BEd programme and in Assignment 2).* (M19/2015)
	Increase turnaround time for Assignment 2.
Remuneration	*The institution's remuneration rate is lower in comparison to other institutions.* (M29/2015)
	Remuneration for Assignment 2 and examination is unbalanced. (M21/2015)
	Re-evaluate the amount paid for examination scripts.
Related to module coordinators	*Some markers do not have sufficient knowledge of the subject.* (M40/2015)
	Markers should know on time that they will be marking so as to plan their time. (M31/2015)
	Markers would appreciate feedback from moderation module coordinators and external examiners. (M19/2015)
	More contact with the module coordinator is needed. (M15/2015)
	Presenters should take time to explain English terminology during contact sessions. (M11/2015)
	It is good to be a marker of the module one teaches as one is able to help students more during contact sessions. (M16/2015)

Theme	Comments by markers
	Devote more time to assignments during the short contact session and academic writing during the long contact session. Many students do not attend the contact sessions, but expect to pass. (M1/2015) *It appears that some module coordinators are not skilled in control and marking. Some do not have clear direction.* (M2/2015) *Module coordinators see inputs by markers as a threat because they are ill-prepared. They should be open to change and listen to markers' suggestions.* (M17/2015)
Miscellaneous	a. *Space on bundle list should be bigger.* b. *Students sometimes display a low level of intelligence (use of language, incorrect interpretation of questions and copying directly from the learning guide). They do not edit their work. They should take time to produce neat work. The use of correction fluid should be discouraged. Plagiarism and laziness to think is also encountered.* (M4/2015) c. *I am not aware of having signed a contract.* d. *Students complain that they do not receive assignments back in time to prepare for the examination.* (M16/2015)

The participants made the following recommendations: Electronic markers should be given more training. Heads of department need to revisit the role of module coordinators in distance education as stated in the policy. There is a need to sensitise markers during memorandum discussion and meetings to their responsibilities, as stated in the policy. Although many claim to be aware of their responsibilities, feedback from students often indicated otherwise.

Other suggestions were that memoranda and rubrics should be developed for all modules that did not yet have any. These should be included in the tutorial letters, and should be made available to all markers. Module coordinators should create time to meet with markers as requested prior to marking, as well as after marking to discuss identified

student challenges. Lastly, it was necessary to revisit some of the logistics regarding timelines and the number of markers appointed by module coordinators per module on Assignment 2 (which was a project) in order for markers to be able to give full and comprehensive feedback. Remuneration for Assignment 2 and the examination should also be reviewed as the contents were not the same as for Assignment 1.

Phase 5

In response to the recommendations, the unit took the following steps: The programme coordinator was informed of the findings of the study. With the unit, she organised a meeting with the eight module coordinators involved in the programme. The purpose of the meeting was to inform the module coordinators of the findings in order to find solutions to the challenges faced by students. A decision was taken to organise a meeting for all markers, at which the unit would highlight the findings, and the role markers were expected to play as espoused in the distance education policy. This was followed by the retraining of markers by module coordinators.

Module coordinators were also requested to develop rubrics and memoranda for the modules where these were absent. The rubrics and memoranda that were already available were reviewed. Module coordinators looked into the workload of markers, and realigned this proportionately. The unit also took a decision to continually monitor marked scripts. The project paid off as the complaints received from students regarding assignments reduced drastically.

The transactional distance theory

The majority of the theories in distance education have been modified to reflect the continual changes within the practical application of distance education, while many require further research. One of the major reasons for this shift is the move from

"structural constraints" (geographical distance) to "transactional issues" (teaching and learning) (Garrison, 2000). The TDT of Michael Moore (Moore & Kearsley, 1996) proposes that the essential distance in distance education is transactional, and not spatial or temporal (Gorsky & Caspi, 2005). Therefore, the transactional distance is the gap between understanding and communication between the teachers and the learners caused by geographic distance that must be bridged through distinctive procedures in instructional design and the facilitation of interaction (Moore & Kearsley, 2012).

The term "transactional" has its roots in John Dewey (Dewey, 1938), who explains that an experience is always what it is because of a transaction taking place between an individual and his environment (Moore & Kearsley, 1996). The environment is whatever conditions interact with personal needs to create the experience. Therefore, in relation to interaction in an instructional programme, transactional distance is a function of dialogue, structure and the learner's autonomy (Moore, 1993). Thus, the theory suggests that there are two critical underlying variables – structure and dialogue – and that these are in relation to learner autonomy (Gokool-Ramdoo, 2008). Dialogue is developed in the course of interactions between an instructor and a student. Structure refers to the design of a teaching programme, its educational objectives, teaching strategies and its evaluation methods, which in turn determine to what extent each learner's differences are taken into consideration (Mueller, 1997). Thus, the structure reflects its rigidity or flexibility. As dialogue increases, the structure decreases, which reduces the transactional distance. This invariably determines the learner's autonomy, which is expected to increase based on the constructivist paradigm that is now advocated for learning. The concept of learner autonomy is that learners have different capacities for making decisions regarding their own learning. Although much research is still needed on the concepts of dialogue, structure and learner autonomy, scholars still find the theory

relevant, not just to distance education, but to other modes of learning as well (Anonymous, 2007; Gorsky & Caspi, 2005).

Implications of findings for student assessment in the light of TDT

TDT has been mostly applied to issues around learning materials that are made available to distance education students. However, scholars (Gokool-Ramdoo, 2008) have argued that this model should not only apply to learning materials alone, but also to all that goes into the totality of a given programme. TDT can have applications along the entire supply chain of the distance education enterprise, and can encapsulate the national concerns for policy development (Gokool-Ramdoo, 2008). We have adopted the theory to explain our findings as there are issues that are embedded in the totality of a programme that influence the transactional distance between an institution, a lecturer and a student.

With relevance to this paper, the quality that is infused into assessment by a distance education provider will go a long way to determine the transactional distance between the institution and its students. Therefore, student assessment could be considered to be part of what determines the quality of interaction between an institution and its students. The question for us is: "To what extent could the handling of students' assignments be used to increase or decrease the dialogue between students and an institution, thereby decreasing organisational structure?" This would refer to the way in which scripts are marked and what feedback is provided to students, and how the turnaround time of assignments assists them in their learning. Assignments should be regarded as a major means of communication between an institution and its students.

Moore (1993) does not focus on the frequency of interaction, but on its quality, as well as on the extent to which it enables students to resolve the learning problems they may be experiencing (Kassandrinou, Angelaki & Mavroidis, 2014). This makes

accountability for interaction of the utmost importance, and places the responsibility squarely on the shoulders of the lecturer. It also helps to benchmark the quality of an educational programme in terms of its final effectiveness (Deschênes & Maltais, 2006).

For instance, the lack of comments in students' scripts by markers, the late receipt of marked scripts by students and other inherent challenges could lead to frustration and ultimately low throughput rates. Poor throughput rates remain a major challenge in distance education. A theory of distance education that only considers the variables of teaching would be flawed (Moore, 1972). Much research has shown the importance of dialogue (Moore & Kearsley, 2012). Thus, based on their research, Larkin and Jamieson-Proctor (2015) have argued that assignment feedback is the one key element of dialogue that leaves room for improvement both in terms of the timing and amount of feedback, and in relation to students' understanding of the assessment rubric used. Jones et al. (2017), in their study on students' use of rubrics, found that when students fully comprehend the rubric criteria, the quality of work is more likely to improve.

If Moore (1993) had indicated that learner autonomy is associated with learner directedness, indicating the amount of control that the learner exerts during the learning process, then the poor handling of learners' assessment would mean that learners would largely lose their autonomy. Although in Moore's theory (Moore, 1993), learner autonomy, unlike dialogue and structure, is not under the control of the instructor. It is also harder to manipulate in the design of the instruction. We are of the opinion that learners need all the support they can get to maintain the necessary level of autonomy in a programme. This is based on the definition of Boyd (1966) that an ideal autonomous learner is a person who can approach the subject matter directly without having an adult in a set of intervening roles between the learner and the subject matter.

As indicated earlier, TDT has been applied to both contact and distance education modes, which makes the findings of this study relevant to both modes of delivery. Although the level of feedback is also an issue in many face-to-face courses, assessment at a distance can be even more problematic (Larkin & Jamieson-Proctor, 2015). This is even exacerbated in large online courses involving numerous casual markers, as students may feel that they do not have the same level of opportunity to discuss their feedback with course teachers (Larkin & Jamieson-Proctor, 2015). Thus, institutions have a role to play in ensuring that a balance is created among the concepts of dialogue, structure and learner autonomy.

Recommendations and conclusion

The following recommendations are applicable, irrespective of the context of practitioners.

Firstly, there is a need to have regular training sessions and continuous support for markers to remind them of the special role that assignments and feedback play, especially, in a distance education programme. Assignments usually motivate distance education students and prepare them for summative assessments. This is more so because most distance education students do not have the confidence to learn independently due to their traditional backgrounds. Secondly, the number of markers to be allocated to a module should be proportionate to the number of scripts in order to ensure quality. Thirdly, there is a need to sensitise markers to the role of the module coordinators in the loop (for instance, students' comments that cannot be handled by markers should be referred to module coordinators). Fourthly, academics should make detailed rubrics available for all modules to support students. In addition, it is necessary to involve students in the development of the assessment format and to train them on its use

(Hanrahan & Isaacs, 2001; Yorke, 2001). Lastly, the turnaround time of assignments should be well monitored by designated staff. For instance, where paper assignments are still applicable, marked scripts could be hand-delivered to contact session venues in order to minimise the delay in postal delivery. Marked scripts that arrive after a student might have written an examination are useless and frustrating to a student.

We have applied TDT to assess the extent to which the assessment practices of a distance education provider have created more transactional distance or have reduced the distance between itself and its students. Although it is common practice, for many institutions to give course questionnaires to students, Freeman and Dobbins (2013) have, raised questions about the level of impact that these have on the quality of teaching and learning. For student assessment to remain a major means of support, especially for distance education students, it is imperative for institutions to pay attention to and act on students' comments. As distance education institutions move away from paper-based assessment, they need to pay attention to the four major elements of assessment highlighted in the Nadeosa quality criteria (assessment design, quality of assessment, assessment management and security), irrespective of the mode of assessment. This will enable them to create the needed balance in the three variables highlighted by TDT to support student success.

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