ERNEST NGENDAHAYO AND HELEN ASKELL-WILLIAMS

16. RWANDA'S NEW COMPETENCE-BASED SCHOOL CURRICULUM

New Approaches to Assessing Student Learning Needed

> My ideas and beliefs in my abilities to publish were far from optimal. However, encouragement from my lecturers made me revisit my self-beliefs and realise that publication was not only a possibility for me but also an obligation to give back to the knowledge community. (Ngendahayo)

Rwanda has embarked on curriculum reform to improve the quality of education. This is a crucial step in the direction of Rwanda's ambition to "develop a knowledge-based society and the growth of regional and global competition in the jobs market" (REB, 2015). An important shift has been to move away from a "knowledge-based curriculum" to a competence-based curriculum[i], and from knowledge and skills acquisition to knowledge creation and application. The aim is to develop students' independent, lifelong learning habits; appropriate skills and knowledge; and applications to real-life situations. There is growing recognition of the potential of competence-based education, unlike traditional subject/content-based education, to develop the capabilities/competences that are deemed essential for success in both academia and today's knowledge-based economy (Darling-Hammond, 2012; Scardamalia et al., 2012).

Rwanda's proposed competence-based curriculum is similar to programs that seek to develop generic capabilities, such as those discussed by Yeung et al. (2007) and McNeil et al. (2012). The competences proposed for Rwanda's educational system include critical and problem solving skills; creativity and innovation; research; communication in official languages; cooperation, interpersonal management and life skills; and lifelong learning. Rwanda has adopted the term "competence-based curriculum", therefore the terms "generic skills", "generic capabilities-based" and "competence-based education" will be used interchangeably in this chapter, using the acronym CBE.

ASSESSMENT AND COMPETENCE-BASED CURRICULUM

Testing Culture vs Assessment Culture

The value that students and teachers place upon various components of the new curriculum will be influenced strongly by the components that are targeted for

evaluation. Two different evaluation cultures influence the curriculum; testing culture and assessment culture (Birenbaum et al., 2006). In the testing culture, the main focus is on the end results. The means that lead to the ends may be given little or no consideration (Hamade, 2009). This culture is summative assessment and its variants, such as assessment *of* learning or high-stakes assessment (e.g. Stiggins, 2002). Scardamalia et al. (2012) argue that summative assessment is the common function that most people associate with assessment. Summative assessments are usually administered after major events, such as standardised tests at the end of a unit of study or final exams at the end of a course, or before important events like university entry tests (Shute & Becker, 2010). The tasks and items in summative assessments come in different forms, such as multiple choice tests and other short answer questions, open-ended essays and student presentations.

Summative assessments play an essential role as an accountability mechanism for schools, teachers and students, but the information they generate is less timely and useful for informing the day-to-day processes of teaching and learning (Scardamalia et al., 2012). Grades or marks, perceived as "golden stars", and related decisions such as students' ranking, serve as the primary incentive for students (Black & Wiliam, 1998). Summative assessments pressure teachers to teach to the test, which in turn results in a "narrowed curriculum" (Popham, 2004). Teachers may turn to transmission teaching styles with well-structured learning activities (Harlen & Deakin, 2002) around what is tested or likely to be tested to maximise their students' test scores (Popham 2001).

In contrast to a testing culture, a formative assessment culture focuses upon assessment *for* learning and assessment *as* learning (e.g. Stiggins, 2002) with a view to improving teaching and learning. According to Shute and Becker (2010), formative assessments are embedded in the curriculum that is delivered in the classroom, and generate real time information that can be used to revise instruction to promote learning in a timely way. Teaching and learning in a formative assessment culture emphasise what students can do (students' performances), not simply what they know (content) (Lachat, 1999).

Systems need summative types of assessments to monitor growth and identify areas needing attention at meso and macro levels, while students and teachers need formative assessment information to monitor individual students' growth and identify areas needing attention at micro levels (Atkin et al., 2001).

THE CURRENT CONTEXT OF EDUCATIONAL ASSESSMENT IN RWANDA

Curriculum and assessment in Rwanda have been fundamentally summative in nature, using end of term/year examinations; national examinations at the end of primary, lower secondary and upper secondary school; and school-based continuous assessments (e.g. homework, quizzes). The assessment system is so centralised that teachers' involvement is limited. Selected teachers mark and moderate the national examinations in marking centres. Although some moderation exists in some schools, there is no school-wide or system-wide moderation. Thus,

teachers' local contextual expertise and knowledge of individual students barely influence assessment designs.

Rwandan school-based examinations are competitive and are high stakes for schools, teachers and students because they inform selection, orientation to different types of schools and sections/courses, certification and promotion/retention. To some extent, schools and teachers are held accountable for their students' performances in the national/external examinations. It appears that teaching and learning are largely oriented towards increasing students' scores on the external assessments, with the possibilities of "teaching to the test" or even "teaching the test" emerging as preferred practices. This may lead to unhealthy levels of competition between, and within, schools and students (Sahlberg, 2010).

The high-stakes testing approach is also typical of day-to-day classroom-based assessment. Most classroom assessments are norm-referenced. At the end of every term and year, students of every class are ranked from first to last in their class according to their average score across all subjects. In most cases, high performers are celebrated during proclamation of marks ceremonies at schools, at home or in the larger community. Implicitly, and in some cases explicitly, lower performers are personally blamed for their poor school results. Such judgements may have very serious consequences due to their potential negative effect on students' affect and emotions, as well as their academic achievements (Bandura, 2001).

A STUDY OF RWANDAN TEACHERS' CONCEPTIONS OF ASSESSMENT

Teachers' beliefs exert considerable influence on their practices (Patrick & Pintrich, 2001). If educational reforms are to be achieved, one area that must be addressed is teachers' beliefs and conceptions about assessment. Assessment conceptions are "systematic frameworks for understanding assessment and they include people's attitudes towards it" (Brown et al., 2008, p. 1). Teachers' assessment related beliefs matter for how, and why, assessment is implemented (Brown & Remesal, 2012). Such belief systems are context-specific. Therefore, it is crucial to understand them when making inferences about behaviour and practice (Gebril & Brown, 2014).

The introduction of CBE will require better understanding about Rwandan teachers' conceptions of assessment. Thus, the remainder of this chapter reports results from a study, guided by two research questions, that investigated Rwandan secondary and primary school teachers' practices and conceptions of assessment:

1. What practices do Rwandan teachers most associate with assessment?
2. What conceptions of assessment do Rwandan teachers have?

Ethics Approvals

Permissions were obtained from the Principal of Rwanda Teachers College and Head Teachers of schools to conduct the research. Participants were provided with Information Sheets and assured that their participation was voluntary and their responses anonymous and confidential.

Participants

Participants included primary and secondary school teachers, identified through convenience sampling. Participants came from a range of schools and districts. Some of the participants were also enrolled in a two year Diploma in Education program at Rwanda Teachers College.

Instrumentation

Brown's (2004) *Conceptions of Assessment* (CoA-III) questionnaire, consisting of 27 items measuring four factors (school accountability, student accountability, improvement and irrelevance), was used for this study, with each question written in English and Kinyarwanda. CoA-III uses a 6-point, positively-packed rating scale (i.e., from 1=strongly disagree to 6=strongly agree). CoA-III also proposes a list of 12 common practices and asks teachers to indicate each practice that comes to their mind when they think about assessment.

RESULTS

Five Hundred questionnaires were distributed, from which 417 were returned (response rate 83%). Poorly completed questionnaires were discarded. A final set of 385 questionnaires was suitable for analysis (215 male; 156 female; 14 no gender recorded). Participants taught across the range of primary and secondary school subjects. Apart from one item which had 20% of missing data, the missing data per item ranged from 1% to 5% and was not replaced.

Perceived Assessment Practices

Participants were asked to select from 12 options to indicate the practices they have in mind when they think of assessment. As shown in Table 16.1, respondents mostly associated assessment with practices that primarily serve summative purposes. The majority of teachers (78.3%) perceived assessment as teacher made tests, while 80.1% and 72.6% perceived assessment as student written work and marked homework respectively.

Table 16.1. Frequencies and percentages of the practices perceived as assessment

Assessment practices	Yes: N (%)	No: N (%)
Unplanned observation	25 (8.4)	273 (91.6)
Oral questions & answers	248 (83.5)	49 (16.5)
Planned observation	154 (50.8)	149 (49.2)
Student written work	241 (80.6)	58 (19.4)
Marked homework	220 (72.6)	83 (27.4)
Student self- or peer-assessment	228 (71.5)	91 (28.5)
Conferencing	46 (15.5)	251 (84.5)
Portfolio/scrapbook	30 (10.1)	268 (89.9)
Teacher made test	242 (78.3)	67 (21.7)
Standardised test	208 (68.0)	98 (32.0)
Essay test	217 (72.6)	82 (27.4)
1-3 hour examination	184 (62.0)	113 (38.0)

Conceptions of Assessment

Principal Components Analysis of the CoA-III failed to replicate Brown's (2006) 4-factor structure. Three items did not achieve criteria for inclusion and were removed from the analysis. A 6-factor structure, with four items in each factor, accounted for 52.52% of the variance in the model (KMO .814; alpha .73). The frequencies, percentages, means and standard deviations for the 24 items are presented in Table 16.2. Participants "mostly & strongly" agreed that assessment "indicates quality" and "gives feedback" to students. They also largely agreed that assessment is a "tool for accountability". Similarly, a large majority of participants "mostly & strongly agreed" with the items related to the need for cautious use of assessment information. Worth noting too is that a substantial number of the teachers agreed that assessment measures "students' higher-order thinking skills".

DISCUSSION AND IMPLICATIONS

The findings indicate that Rwandan teachers hold mixed conceptions about assessment. They seem appreciative of the relevance of assessment with regard to instruction and learning, including higher-order learning. They largely agreed that assessment improves learning and teaching, and that assessment can be used to hold schools and students accountable. While such conceptions are adequate for the 21st century competences envisaged in the Rwanda CBE, such results are to be interpreted with caution because research has shown that positive attitudes and beliefs about CBE do not necessarily translate into relevant assessment practices (e.g. Kafyulilo et al., 2013). In particular, the results show a mismatch between the conceptions listed in Table 16.2 and the perceived assessment practices listed in Table 16.1. The current examination-dominated, high-stakes assessment system in Rwanda may partially account for this mismatch, as similarly reported by Gebril and Brown (2014) in research in Egypt. The Rwandan approaches to assessment will need to undergo fundamental changes if assessment practices are to respond to the new goals and demands of CBE (Ogan-Bekiroglu, 2009).

Table 16.2. Frequencies, mean scores and standard deviations for CoA III items

Item No.	Factors and items	Disagree N (%)	Agree N (%)	Strongly agree N (%)	Mean (sd)
Factor 1					
1	Assessment feeds back to students their learning needs	23 (6)	44 (12)	314 (82)	5.2 (1.3)
2	Assessment establishes what students have learned	27 (7)	65 (17)	288 (76)	5.0 (1.3)
3	Assessment is a way to determine how much students have learned from teaching	38 (10)	94 (25)	245 (65)	4.7 (1.5)
4	Assessment is assigning a mark or category (e.g. A, B+)	52 (14)	68 (18)	261 (61)	4.7 (1.6)
Factor 2					
5	Assessment interferes with teaching	312 (83)	34 (9)	32 (8)	1.7 (1.4)
6	Assessment is an imprecise process	325 (87)	25 (7)	22 (6)	1.6 (1.2)
7	Assessment results are consistent	305 (82)	33 (9)	33 (9)	1.8 (1.4)
8	Assessment results are filed & ignored	305 (81)	32 (8)	40 (11)	1.9 (1.4)
Factor 3					
9	Assessment results should be treated cautiously because of measurement error	44 (11)	110 (29)	228 (60)	4.5 (1.5)
10	Teachers should take into account the error and imprecision in all assessment	76 (20)	114 (30)	188 (50)	4.2 (1.6)
11	Teachers conduct assessments but make little use of the results	226 (60)	96 (26)	52 (14)	2.5 (1.6)
12	Assessment information modifies ongoing teaching of students	9 (3)	46 (15)	254 (82)	5.2 (1.0)

Table 16.2. Frequencies, mean scores and standard deviations for CoA III items (cont.)

Item No.	Factors and items	Disagree N (%)	Agree N (%)	Strongly agree N (%)	Mean (sd)
Factor 4					
13	Assessment results can be depended on	56 (15)	111 (30)	207 (55)	4.3 (1.5)
14	Assessment helps students improve their learning	5 (1)	47 (12)	327 (86)	5.4 (0.9)
15	Assessment allows different students to be taught in different ways	33 (9)	99 (26)	254 (68)	4.8 (1.3)
16	Assessment results are trustworthy	45 (12)	178 (49)	144 (39)	4.0 (1.4)
Factor 5					
17	Assessment is integrated with teaching practice	13 (3)	37 (10)	322 (87)	5.4 (1.1)
18	Assessment places students into categories	25 (7)	49 (13)	305 (80)	5.2 (1.3)
19	Assessment provides feedback to students about their performance	18 (5)	33 (9)	320 (84)	5.3 (1.2)
20	Assessment provides information on how well schools are doing	35 (9)	84 (22)	258 (68)	4.8 (1.4)
Factor 6					
21	Assessment measures students' higher order thinking skills	23 (6)	99 (11)	254 (68)	4.5 (1.5)
22	Assessment is a good way to evaluate a school	37 (10)	87 (30)	257 (67)	4.8 (1.4)
23	Assessment is an accurate indicator of a school's quality	20 (5)	78 (20)	283 (74)	5.0 (1.3)
24	Assessment determines if students meet qualifications standards	29 (8)	43 (23)	297 (78)	5.1 (1.3)

Note: 'Disagree' includes the strongly and mostly disagree responses; Agree includes the slightly and moderately agree responses;
Strongly agree includes the mostly and strongly agree responses

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School-based Continuous Assessment

If Rwanda's CBE is to succeed, a stronger focus will need to be placed on classroom assessment and teachers', and especially students', involvement in development of assessment goals and criteria, and in the use of those criteria to monitor learning progress in self-assessment and peer-assessment (Darling-Hammond & Pecheone, 2009). While the teachers in our study mostly associated assessment with traditional methods requiring recall of factual knowledge, new practices should encompass assessment methods that promote higher-order learning, such as portfolios, projects, problem solving and performances to collect timely information on students' learning. In order to avoid negative effects on students' self-concept and perceived abilities to learn, assessment in CBE should be more connected to individual student progress. According to Darling-Hammond (2012), many countries are increasingly emphasising such assessments because of their potential to strengthen teaching and to support lifelong learning.

Effective Use of Assessment Information

Rwanda's education system is expected to become more information rich with the introduction of CBE. District assessments and the assessment of achievement in Rwandan schools, anticipated in Rwanda's CBE initiatives, will add to existing national examinations and other school-based assessment practices to generate more assessment information. Such information, usually used to regulate the education system as a whole, could also be used at school and classroom level to improve teaching and learning. Using summative assessment information for formative purposes should become a critical skill for teachers (Shute & Becker, 2010). It is essential that teachers develop relevant skills and competences to leverage such information to promote students' learning.

Assessment Legislation

It is important that there is an enabling environment for a new assessment culture to take root, and to ensure the sustainability of its quality and effectiveness (World Bank, 2010). The introduction of CBE provides an exciting opportunity for development of a national assessment policy and guidelines based on the curriculum content. This exercise should involve Rwanda's education managers, assessment, learning and education specialists, and other key stakeholders.

Standardisation

Experiences from countries that have adopted CBE and formative assessment indicate the need for standardisation of the regulations, curricula and procedures (e.g. South Africa, Tanzania). Development of clear, understandable assessment standards, in addition to clearly defined, expected learning outcomes at each education level and for

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each subject is at the heart of an assessment system. Involving teachers more actively in developing and monitoring standards would embed the latter more thoroughly into teachers' instructional habits (Adamson, 2011).

Pre-service and In-service Teacher Training

Effective assessment in CBE will rely heavily on teachers' professionalism. Pre-service and in-service teacher training programs should address teachers' ability to use assessment data to identify students' learning needs and teachers' ability to respond to students' needs. In fact, educators' poor assessment literacy has been described as a stumbling block to the implementation of CBE in African countries such as Tanzania and South Africa (e.g. Paulo & Tilya, 2014; Kafyulilo et al., 2013). One of the reported reasons behind this failure is the teachers' misunderstanding of the CBE concepts (Kafyulilo et al., 2013) and their failure to adopt assessment practices appropriate for the demands of CBE (Paulo, 2014). Such scenarios could be somewhat alleviated by implementing a competence-based curriculum in pre-service and in-service teacher training programs across Rwanda.

Limitations

The sample available for this study was a convenience sample. Care should be taken with any generalising statements.

CONCLUSION

Using assessment in the service of student learning becomes an imperative and crucial skill for teachers in an era in which Rwanda has embarked on a competence-based reform process to improve the quality of education. The new CBE curriculum requires competence-based assessment, described as tasks that present real-life challenging situations to students and require students to apply acquired knowledge to overcome them (REB, 2015). Developing an environment in which to realise this mission requires enabling legislation; standardisation of policies, procedures and curricula; alignment between curriculum, teaching, learning and assessment; teachers' professional development for improved school-based assessment; and effective use of formative and summative assessment information. Teachers' assessment practices are highly dependent on their conceptions of assessment. Therefore, their assessment belief systems, attitudes and competences should be given serious consideration during professional development and other training programs.

NOTE

[i]   The proposed "competence-based curriculum" is not to be confused with basic skills types of "tick the box" certificate of competency checklists (e.g. see DMP, n.d.)

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Ernest Ngendahayo MEd
College of Education, University of Rwanda, Rwanda

Helen Askell-Williams PhD
School of Education, Flinders University, Australia