

Teacher-reported quality of schooling indicators in Botswana primary schools: an exploratory study

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This study examined teacher self-reported views on quality indicators in Botswana primary schools. A purposively selected sample of primary school teachers in the city of Gaborone, Botswana (N = 72, females = 56; males = 16; mean age = 39 years, SD = 7.17 years; mean years of service = 15.6; SD= 8 years; public schools = 65%; private schools = 35%), completed a survey on their perceptions of quality of education indicators relevant to their school setting. Data were analyzed by type of school contrasting private and public schools. Findings suggest teachers in public schools to associate the use of teacher-led student supports as important quality indicators whereas those in private school consider access to learning materials significantly more important than other learning context variables. Type of school influenced perceptions of quality of schooling indicators in Botswana primary schools.

Keywords: teaching and learning resources, quality of schooling, quality of education indicators, Botswana primary schools, student supports

Introduction

Teachers are translators and enactors of education policy at the classroom floor level (Guardino & Fullerton, 2010), and their perception of the indicators of quality in their education practices influence learning outcomes for students or indeed school systems and economies (Heck, 2007; Rivkin, Hanushek, & Kain, 2005). The extent to which schools attain indicators of quality in their instructional practices relates to their effectiveness as education institutions (de Vries, 2010; Haines III, Saba, & Choquette, 2008; Korilaki, 2006). School effectiveness is in part defined by how well an education institution provides for learning (Lupton, 2005), which also depends on their use of learning and teaching strategies to optimize learner success. Perillo (2006) reported that teaching methods to support students to focus on their work

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are a quality of schooling indicator. However, quality of schooling has both objective and subjective aspects. Objective aspects of quality of schooling are those with verifiable indicators regardless of the persons reporting. The subjective indicators are more nuanced and school community members may have unique perspectives regarding the ways or extent to which these are present in an education setting. This study investigated both objective and subjective quality of education indicators that Botswana school teachers identified to characterize their schools.

Objective Quality of Schooling Indicators

Teaching is more effective when facilities and infrastructure such as attractive school buildings, electrification of buildings, furniture, libraries and books are available (Ministry of Education Botswana, 2004). School infrastructure motivates and provides a comfortable learning and teaching environment (Babitseng & Buaduo, 2009; Leung & Fung, 2005; Tibúrcio & Finch, 2005). In particular, the availability of learning and teaching resources is an important quality of schooling indicator because those resources are associated with superior learner attainment (Ngware, Oketch, & Ezeh, 2010; Odhiambo, 2008; Riddell, 2003; World Bank's Primary Education Policy Paper on Southern Africa, 1990). Riddell (2008) reported on the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) data (2000 to 2005) that quality education was at variance between rural and urban schools, the latter having more resources and better qualified teachers. Monyatsi and Monyatsi (2007), in their study reported on imbalances in the distribution of facilities and infrastructure in Botswana public primary schools in favor of the urban schools; - which made for qualitatively different learning environments.

Student attainment is a widely regarded objective quality of schooling indicator. The indicator is highly valued by teachers, students and their parents/guardians alike. Parents or guardians often pay high school fees for their children to attend selective and high performance schools (Hofmeyr & Lee, 2002). In some settings, private schools lead the pack in student scholastic attainment, although some parochial private school may value character development (a subjective quality of schooling indicator) more than they would scholastic attainment *per se*.

Subjective Quality of Schooling Indicators.

The subjective aspects of schooling quality consider primarily the learners' experience of and sense of membership of the school community. Factors such as learners' attitudes, values, cleanliness of the school grounds, school morale, and school leavers' attitudes may also be considered as quality of schooling indicators. They are about the overall quality of the learning experience for students, the school community and wider society (Ngware, Oketch, & Ezeh, 2010). At the classroom floor level, subjective quality of schooling indicators involve the extent to which learner-centered teaching strategies are used or those which involve learners making

discoveries on their own while the teacher facilitates learning (Rowe, 2006; Tabulawa, 1998). Teachers who use inquiry oriented approaches have motivated learners (Haines III, Saba & Choquette, 2008; Jones & Lloyd, 2005; Marcoulides, Gottfried, Oliver, & Guerrin, 2007; Ryan & Deci, 2000). The subjective qualities of schooling also encompass the students' perception of the receptiveness of the school environment as communicated by concerns of the teachers for their welfare. It is also explained by how students perceived the general school climate inclusive of its infrastructure and cleanliness

Teacher Perceptions of the Objective and Subjective Quality of Schooling Indicators

Understanding the objective quality of school indicators from the point of view of the teachers would enhance school development initiatives aimed at creating better schools for all. At the school community level, quality of schooling is defined in part by the extent to which teachers work as teams to support each other in their professional development, growth and application (James, Connolly, Dunning, & Elliot 2007). For instance, in Wales (United Kingdom) (UK), James, Connolly and Elliot (2007) reported that teachers who work together in sharing their knowledge and expertise are more successful educators. Garg and Rastogi (2006) and Honing (2009) considered teachers' organizational behavior, including their ability to carry out and manage classroom practices as an aspect of school climate that results in effective teaching. Quality of schooling and teaching clearly relies on teaching abilities of teachers who ought to be supported by ongoing teacher professional development.

Teacher qualifications and experience may influence their perceptions of quality of school indicators (Mpofu, 1993). For instance, teachers with higher professional qualifications and experience likely would weight pedagogy and quality of school climate more importantly to schooling than others less well prepared. This might be the case since teacher quality of professional preparation likely sensitizes them to praxis considerations than with less preparation (Perez, 2014; Tabulawa, 1998). The type of school in which a teacher serves might also influence the extent to which they regard particular quality of schooling indicators. For instance, teachers in well resourced private schools may value learner support services (subjective indicators) much more highly as they can presume the existence of basic teaching resources. Those in less well resourced public schools may prioritize infrastructure (objective indicators) more to the extent that it affects their basic competencies to teach more directly than would the extent of learner support services. Teachers as education practitioners are members of communities of practice distinguished by their professional preparation (e.g., graduate versus undergraduate) and type of schools they serve (e.g., rural versus urban; private versus public). This creates within profession social identities important for the ways teachers value specific objective and subjective indicators of quality of schooling.

These presuppositions are in need of study in a developing world education system where the differences in teaching resources are more acutely present than would be the case in the relatively advantaged developed world school settings. Botswana is one developing world with a national education vision and mission to have child friendly schools with strong objective and subjective qualities of schooling performance (Republic of Botswana, 1994; 1997).

The Botswana Education Context

Botswana has universal primary education for all children in public schools (Republic of Botswana, 1994; CDE, 2005; 2009). Private primary schooling is optional. Parents may elect private primary schools for various reasons and the perception that quality of schooling is higher in private schools could be one such reason. Pheko (2008) reported of Botswana public school classroom facilities to be insufficient generally in run-down and overcrowded so much that learners may not perceive themselves to be receiving quality of schooling.

In the Botswana setting, quality of schooling indicators include physical facilities, equipment and support staff, a skills-based curriculum, the use of English as the medium of instruction. (Monyatsi & Monyatsi, 2007). The extent to which teachers relate to this policy driven quality of schooling indicators is not known. There is need for studies on the objective and subjective quality of schooling indicators nominated by teachers who are primary education service providers in the schools.

Goals of the study

The study examined the teacher self-reported objective (quantifiable) and subjective (perceptive) evidence on quality of schooling in Botswana. We investigated the evidence on both school (learning) context and teaching delivery indicators as identified by the teachers. The study sought to answer the following questions:

- Which subjective quality of schooling indicators do teachers in Botswana public and private primary?
- What objective quality of schooling indicators do Botswana primary school teachers' perceive?
- How do teacher ratings of the observability of the objective quality of schooling indicators vary by their community of practice membership (i.e., professional preparation and the type of school they are employed).

Method

Research design

A mixed-methods design was used to examine teachers' self-reported views on quality of schooling indicators. A qualitative + quantitative (concurrent) design

(Creswell, 2003) was employed. Whereas the quantitative design was implemented to determine relationships in observed patterns of teacher self-reported views on quality of schooling indicators such as differences by school type and teacher qualifications, a qualitative design was implemented to unravel the scope and nature of teacher-reported views on quality of schooling indicators in Botswana schools.

Participants of the study

Respondents were a convenience sample of 72 primary school teachers from Gaborone District (mean age = 39 years, SD = 7.17 years; mean years of service = 15.6, SD= 8 years; public school, n = 65%). They taught the full range of the primary school grades (Grades 1 to 7). The average class size taught was 33 students (SD = 6.2 students). The sample comprised about 30 per cent of the total number of teachers at the schools.

Data collection procedures

Permission for the study was granted by the Botswana Ministry of Education and Skills Development and the School Boards of the participating private schools. Participants granted individual written consent for the study. Data surveys were collected from the teachers during normal school time. Participants completed a semi-structured Teacher-Quality of Schooling Measure (TQS) specifically designed for this study. A few of the participants (n= 10) completed a member-check interview for elaborating on and triangulating the findings from the semi-structured survey.

Teacher-Quality of Schooling Measure (TQS)

Participants completed a TQS instrument designed for this study by the second listed author. This instrument comprises a self-report questionnaire or survey on teachers perceptions about curriculum delivery-related qualities of schooling, inclusive of teaching-learning approaches, learner support, learning resources, teacher support and development, and scholastic attainment outcomes. In developing the instrument, a panel of teacher experts determined the appropriateness of the question on the survey. Variables on learner support were scored on a scale anchored by 1 to 5 with 1 = Not at all and 5 = Very large extent. The reliability of scores from the TQS with the study sample was .79.

Member-check interviews

Semi-structured interviews were conducted with 10 of the teachers to check on the meanings ascribed to quality of school indicators that were highlighted to be important from the quantitative survey. Specifically, the interviews sought qualitative responses on the objective and subjective quality of schooling indicators including aspects of curriculum delivery and teacher support important to quality of schooling.

Data analysis approaches

Difference in scores on curriculum delivery variables contrasted by school type and teacher qualifications were computed and tested for significance using t-tests (Statistical Package for Social Sciences: SPSS version 2.1). Group differences in proportions endorsing a quality of learning variable were tested for using the *Chi*-square test. Data from the qualitative interviews were thematically analyzed. Emerging patterns, themes and sub-themes were identified. Marginal notes were used to document interpretations, reactions, themes, and connections that emerged. Axial coding was used to make connections between categories in a systematic manner. At the same time the conditions of the categories were also classified. The technique of constant comparative analysis (Merriam, 2009) was used to identify relationships and variations in the data to conceptualize interactional processes. Data triangulation was accomplished by the simultaneous use of surveys and key informant interviews allowing for cross-validation of data from different methodological approaches.

Results

Subjective Quality of Schooling Indicators

Table 1 presents the evidence on what teachers perceived to be objective curriculum delivery indicators of quality education: use of learner oriented approaches, home work assignments, provision of remedial (learner support) education, as well as appropriate pacing of the instruction.

Table 1. Proportion of Teachers Endorsing Subjective Curriculum Delivery Quality Of Schooling Indicators

	School type		Teacher qualifications		
	Public (n = 47)	Private (n = 25)	Certificate (n = 20)	Diploma (n = 25)	Graduate (n = 26)
Quality instruction indicators					
<i>Learner-centred teaching</i>	42 (89.4)	23 (92)	16 (80)	24 (96)	24 (92.3)
<i>Use of homework</i>	46 (97.9)	18 (72)	18 (90)	23 (92)	22 (84.6)
<i>Learner support services</i>	34 (72.3)	24 (96)	14 (70)	20 (80)	23 (88.5)
<i>Student Focused curriculum</i>	35 (74.5)	17 (68)	16 (80)	17 (68)	18 (69.2)
<i>Pace of instruction</i>	39 (83)	20 (80)	17 (85)	21 (84)	20 (76.9)

Note. Numbers in brackets indicate percentages of teachers endorsing

The evidence is presented by type of school and teacher qualifications.

Curriculum delivery qualities

As can be observed from Table 1, use of learner-centered education approaches is perceived by teachers as a quality of schooling indicator and regardless of school type or teacher qualification. A significantly higher proportion of teachers in public schools (97.9%) perceived greater use of homework to be a quality of schooling indicator as compared to those in private schools (72%); $c(df = 1) = 8.60, p < .01$. More of teachers in private schools (96%) than in public schools (72.3%) perceived the provision of remedial education as a quality of schooling indicator; $c(df = 1) = 14.2, p < .01$). Teachers with certificate courses were as likely to endorse the quality of instruction indicators in comparable proportion to those with diploma and college degrees.

Table 2 presents the qualitative evidence on curriculum support as quality of schooling indicators.

Table 2. Illustrative Findings from Member-Check Interview on Quality of Schooling Indicators

Quality indicators	Illustrative statements
Perceived quality of the learning experience Learner-centred approaches Use of homework	Use of teaching approaches that enable students to do work in school is an important quality of schooling indicator. Children should be taught content that is appropriate for their ages for them to produce quality results. In private schools homework is very important and is given to learners at the infant level three times per week, while learners from middle and upper levels are given homework four times a week. Homework is given to learners every day in public schools.
Perceived learner support Special needs Counselling	Addressing learners' special needs is a number one priority for this private school and we have a special needs teacher for each level in primary schools so assist learners with special needs. We have special needs teachers in public schools who attend to students with learning difficulties. Provision of counselling is very important even though most private schools do not provide counselling services to students. The government of Botswana has institutionalized provision of counselling services in all public primary schools in Botswana to help address students' academic, social, personal and career needs. This is done to motivate students to excel in their academic achievement.

Regarding learner support as instructional delivery, teachers in private schools rated the provision of special needs education higher (mean = 3.63, SD =.85) than those in public schools (mean = 2.15, SD = 1.22); $t(df = 70) = 5.40, p < .01$. However, teachers in public schools endorsed learner attainment in coursework and national

examinations as quality of schooling indicators than peers in private schools. Teachers in both private and public schools considered the provision of counseling services an important quality of schooling indicator.

Objective Quality of Schooling Indicators

Table 3 shows the evidence for the availability of infrastructural resources as quality of schooling indicators. Teachers in private schools rated the availability of multi-media teaching-learning resources higher as quality of schooling indicators as compared to peers in public schools ($p < .01$). Contrasting availability of multimedia resources, a teacher from a private school observed: ‘There is a fully equipped computer laboratory in this private school and students from across all level in the school are scheduled for a computer lesson at least once a week’.

Table 3. Teacher Ratings of Availability Ratings of Objective Quality of Schooling Indicators

	School type		Teacher qualifications		
	Public (n = 47)	Private (n = 25)	Certificate (n = 20)	Diploma (n = 25)	Graduate (n = 26)
Material resources					
Library	1.92 (.99)	4.65 (.99)	3.1 (1.68)	2.37 (1.40)	3.5** (1.17)
Computers	2.17 (4.92)	4.84 (.55)	2.60 (1.87)	3.54 (6.47)	3.31 (1.86)
TV	1.64 (.82)	3.48 (1.41)	2.10(1.37)	2.08 (1.28)	2.86 (1.46)
Digital cameras	1.21 (.60)	4.20 (1.19)	2.55 (1.84)	1.67 (1.30)	2.90** (1.74)
Music equipment	1.30 (.68)	4.52 (.82)	2.50 (1.93)	2.08 (1.38)	3.05** (1.81)

Notes. Numbers in brackets indicate standard deviations

* $p. < .05$, * $p < .01$

A teacher from a public school noted: ‘Even though computers are important for enhancing learners’ education this school does not have any computers for use of learners. There is only one computer in the school head’s office and this is used for school administration purposes’.

Teacher Community of Practice Effects

Teacher-reported views on quality of schooling indicators varied by teacher qualification. Teachers with graduate qualifications rated library facility an important quality indicator compared to those with diploma qualification; $t(df = 49) = 3.13$, $p < .01$. Teachers with graduate qualifications also rated availability of digital cameras as an important quality of schooling indicator (mean = 2.90, SD = 1.74) compared to those with diploma qualifications (mean = 1.6, SD = 1.30); $t(df = 49) = 2.85$, $p < .01$. Similarly, teachers with graduate qualifications perceived availability of music

equipment as an important quality of schooling indicator (mean, 3.05, SD1.81) unlike their counterparts with diploma qualifications (mean = 2.08, SD = 1.38; $t(df = 49) = 2.14$, $p < .01$). However, availability of television and computers was rated as an important quality of schooling indicator across all teacher categories.

Teachers perceived subjective factors like teacher teamwork important indicators of quality of schooling. Teachers in public schools rated performance appraisal as a quality of schooling indicator higher than counterparts in private schools; $t(df = 70) = 2.63$, $p < .01$. A participant observed: 'Performance appraisal is a critical component of quality of schooling indicators and senior teachers ought to ensure that teachers are delivering the appropriate content to the learners.'

Staff development opportunities were perceived an important quality of schooling indicator (mean > 2.50) by teachers in public and private schools and also across qualifications. Teachers in public schools perceived the availability of teaching assistants a quality of schooling indicator more than peers in private schools, $t(df = 70) = 3.64$, $p < .01$.

Discussion

The results revealed that regardless of community of practice as defined by school type or teacher qualifications, subjective quality of schooling indicators of learner-centred education were perceived as a priority quality of schooling indicator. Closely aligned to learner oriented teaching as a quality indicator was the prioritization by the participants of curriculum delivery support as an important quality of schooling indicator. For instance, regarding curriculum delivery support using homework, Davies-Kean, (2005) and Yu and Thomas (2007) found that homework underpins the development and achievement of learners in mathematics and reading and comprehension. Similarly, Yu and Thomas (2007) affirmed that learners who were assigned homework attainment more satisfactory in mathematics, reading, and comprehension than comparison peers.

Although the availability of counselling services was regarded as a quality of schooling indicator, the teachers in the private schools reported making less of this resource compared to those in the public schools. This result may be in line with the Ministry of Education and Skills Development (MOESD) initiative of introducing comprehensive guidance and counselling in all public schools in Botswana. It might also be explained by the fact that children attending private schools have access to out of school counseling services than peers in public schools (see also Thompson & Kleiner,2005).

The teachers rated teamwork an important quality of schooling indicator. According to James, Connolly, Dunning, and Elliot (2007), collaborative practices of teaching enable teachers to work together in sharing ideas, techniques and information needed by the teachers to enhance learners' learning outcomes. Content

analysis, too, revealed that team work was valued by teachers in private schools. One key informant reported that "fortnightly [common] tests allowed... teachers to [work] as a team consulting one another".

Performance appraisal was rated more highly as a quality of schooling indicator by teachers in the public than the private schools. Performance appraisal is more ubiquitous in Botswana public than private schools; - which in part explains this finding (see Pheko, 2010). The reasons for the greater use of performance appraisal in Botswana public schools compared to public schools are not clear. It might be that performance appraisal in the public schools is tied to annual pay increases [merit raises] than may be the case in the private schools. However, a performance appraisal system is an objective quality of performance indicator only to the extent that it is implemented to purpose (Rabiee, 2009). It is unclear from this study what performance appraisal system was utilized.

Teachers in private schools rated the availability of objective quality of schooling indicator of infrastructure supports highly more than those in public schools. For instance, availability of multi-media teaching-learning resources were rated higher as a quality of schooling indicator than their peers in public schools. This result is consistent with the finding of Pansiri (2008), who reported availability of teaching resources a critical quality of schooling indicator in Botswana. Public primary schools in Botswana lacked in basic teaching resources such as books, stationery, paper, and photocopiers (Pansiri, 2008; Ministry of Education, 2000). Botswana private schools are relatively more privileged in having access to information and communication technology (ICT) resources for their teaching. Private schools in Botswana are likely to be better resourced than public schools due to the fact that private schools charge high school fees.

Implications of teacher self-reports for quality of schooling improvement efforts

Objective and subjective quality of education indicators identified by teachers are important to education quality improvement. Knowledge of teacher endorsed indicators of quality of schooling would be important to efforts to engage them in providing quality education. As an example, teacher learning cycles in which groups of teachers share perceptions and experiences aimed at improving the quality of school learning would be feasible forum for teachers to translate their priority quality of schooling indicators into actual benefits for their learners and schools. School management support would be important for teacher learning cycles to flourish. On-going consultation, communication, and collaboration between teachers and other stakeholders in education such as parents, and social and health professional would make for inclusive quality of schooling experiences for the learners and more effective school systems.

Limitations of the study and suggestions for further research

Only the views of the teachers are considered in this study. A more complete understanding of their perceptions of quality of education indicators relevant to their school setting is likely when the views of the learners and their parents are considered as well. Future studies should survey all three of these groups, as well as other stakeholders who might be able to shed more light on the quality of education indicators relevant to Botswana primary school settings. The current study relied on self-report by the teachers, which may be contradicted by observational data. Future studies should include observational data to determine quality of education indicators relevant to their school setting.

Conclusion

Teachers in Botswana perceived quality of schooling indicators consistent with those reported in the international literature, suggesting the feasibility of universal indicators of quality schooling to guide education policy makers in their institutionalization. As an instance of a likely universal quality indicator, learner-centered curriculum delivery approaches were endorsed as a quality of schooling indicator, regardless of school type or teacher qualification. School context or type influences the perceived importance of some indicators with those resource based aspirational for the relatively under-funded public schools.

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