Constructing a Framework for the Use of

Tests Within a Developing Nation's School

System

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Abstract

Interpretive participatory action research methods were utilized to assist the education community in Botswana, a developing nation, to identify a framework for the use of tests in the nation's schools. User preferences for understanding important learner-related qualities through the use of tests were emphasized. Participant informants were educators (n = 1221), learners (n = 355), parents or guardians (n = 162) from a nationally representative sample of 328 schools (primary/elementary schools = 32%; private schools = 18%). Data on the components and content of a prospective framework were gathered using concept mapping and preference methods. The data were analyzed to construct a locally grounded test use framework appropriate to the Botswana school system. Findings suggest a test use framework spanning the following domains of assessment: learning readiness, aptitude, personal development, community norms, socialization, and guidance and counseling. Educators, learners, and parents nominated the school guidance and counseling program as ideally suited to provide in-school test services. The use of a consensus framework for identifying the needs for tests through the use of a multilayered PAR consultative process with the education community has potential for replication in education settings in other developing countries.

Key words and phrases: psychometric testing, frameworks, testing internationally, test consumer oriented, participatory action research, developing countries, Botswana

All successful countries strive to develop their human resources. A country's commitment to public education, including establishing and maintaining its complex infrastructure, reflects this desire, one that may constitute its largest single financial expenditure. Many advanced countries have well developed public education systems and recognize the value of test use within them. This includes assessment methods that help describe current behaviors and other qualities, estimate future behaviors, assist guidance and counseling services, inform intervention methods, monitor and evaluate progress, screen for special educational needs, identify barriers to learning, and profile vocational interests and talents. Tests also are used widely in educational research and evaluation as well as for various administrative and planning purposes (Oakland, 2009). The use of tests[1] to profile learner qualities constitutes important learner support resources.

Despite this universal need, many countries have not developed frameworks to guide the use of tests to support learners in their educational needs (Maree & Van der Westhuizen, 2011). This article describes the processes used in Botswana to assist its national leadership in education to develop a framework for test use in the country's schools. The importance of this framework lies in its providing guidelines or procedure by which testing service can and should be delivered in light of quality assurance (Hergenhahn, 2005; Ntinda, 2012). . A framework for test use in schools should be sensitive to the needs of the users or consumers—broadly conceived to include teachers,

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[1] The term *tests* is used throughout this article to include a broad range of standardized and norm-referenced measures designed to provide information that assists educators, learners, their parents, and others to describe and understand a learner's personal qualities, including but not limited to their educational, social, psychological, and vocational development.

learners, and parents or guardians. An inclusive approach to the development of a framework for test use maximizes the acceptability of the processes, goals, and results.

The Context for this Work: The Republic of Botswana. Botswana is located in southern Africa, bordered by the countries of South Africa to the south and southeast, Namibia to the west and north, and Zimbabwe to the northeast. English and Setswana constitute its official languages. Botswana has a relatively stable and forward-looking federal government, a market-driven economy, and a relatively high economic growth rate. Revenues associated with the mining of diamonds and other raw materials have been used to develop a national system of public education that guarantees 10 years of education. Among Botswana's population of two- million, 47% are under age 15. Over 50% of its students complete secondary education.

Botswana has an admirable school enrolment and retention record of up to seven years of schooling for 71% of its citizens (Human Development Report, 2009). The country's education budget comprises of 27% of the total government expenditure (Ministry of Finance and Development Planning, 2012). The provision of education is tied to national development goals. The country's education system is evolving to embrace use of tests to support student learning (Ministry of Education, 1996; Revised National Policy on Education [RNPE], 1994). Historically, private schools in Botswana use tests more than do public the schools (Mpofu, Peltzer, Serpell, & Mogaji, 2005). The learner support system through which private schools provide testing is unclear.

The Botswana government introduced the school guidance and counseling services (SGC) some years ago and believes the use of tests would complement these

services (Ministry of Education, 1996). Test services were intended to add to evidence needed to counsel learners and help promote important habits, attitudes, and behaviors in school and other settings as well as to be useful for career counseling. The SGC program is better institutionalized the Botswana public school than in its private school systems (ASDE, 2009).

School personnel with the dual roles of school counselor and teacher or school (aka educational) psychologists are responsible for the use of tests that enhance learner support services. Such personnel are few in number (Mpofu, Peltzer, Serpell, & Mogaji, 2005; Republic of Botswana, 2004). Each Botswana primary and secondary school has guidance and counseling team comprised of one or more school counselors and other guidance and counseling committee members (i.e., assistant teacher counselors). In the Botswana school system, school counselors typically are regular classroom teachers with a special assignment to provide guidance and counselling services to learners. They work with a team of other teachers also assigned to counsel students. Some school counselors have received in-service training for their role while few obtained professional counsellor qualifications (ASDE, 2009).

Other in-school learner support services include circle of support (CS), a peer-support program, and the pastoral care (PACT) program, one that focuses on personal and social adjustment issues. The function overlaps among these learner support systems could have implications for the use of tests in the schools. In adopting the use of tests in schools, a learner support program to maximize access needs to be identified.

Significance of a Framework for Test Use

The quality of decisions derived from assessment data depends, in part, on the appropriateness of the ways in which tests are used, and the goals and processes of assessment (Leach & Oakland, 2007; Mpofu et al., 2008; Mpofu & Ortiz, 2009; Oakland, 2009). A clearly articulated framework for the delivery of test services to test consumers could reflect decisions by relevant stakeholders, including what data to acquire and how they should be used. For example, the framework can enable educators responsible for providing testing services (e.g., educational psychologists, school counselors) to prioritize needed information on learner-related qualities accessible through tests. Learners and their parents/guardians also can provide similar information. A clearly articulated framework also enables consumers of testing services (e.g., educators, learners, parents/guardians) to understand and use test results.

Consumer-oriented human services prioritize preferences and needs of users (Mpofu & Ortiz, 2009). Such services acknowledge and respect users for being knowledgeable of supports they need along with preferred ways to access the resources to address their needs. Effective consumer-oriented services develop from shared knowledge and understanding among those who provide and use test information. This framework also acknowledges that the needs and preferences of the various consumer groups may differ. For example, teachers are both providers and consumers of testing services. They may prioritize test use that helps support academic achievement. Learners, as consumers of assessment services, may prioritize the use of tests that inform them of their school adjustment, and peer relationships. Parents/guardians, another important consumer group, may prioritize the need for test-related information that assists them in promoting life outcomes for their children (Eloff, Maree, & Ebersöhn, 2006).

Despite differences in their priorities, educators, learners, and their parents/guardians are likely to share a common interest in obtaining test results that are pertinent to learners across age and developmental levels and needs. Although the importance of consumer-oriented in-school learner support assessment services seemingly is apparent, existing literature that discusses the development of a national framework for test use in school in which educators, learners, and their parents/guardians participate could not be located.

Goals of the Study

The broad goal of this study was to develop a framework for test use in Botswana that was inclusive, holistic, and context based. More specific goals were to construct and use a consensus driven framework to guide test use in Botswana schools and to map preferences by educators, learners, and parents/guardians for accessing such a service framework. The following research questions were addressed: What is the structure of a consumer oriented, consensus driven framework for the use of tests in Botswana schools? What tests use service framework accesses features prioritized by Botswana educators, learners, and parents/guardians?

In addressing these questions, we analyzed for likely differences between the Botswana public and private schools in their experience with tests use and the learner support systems which provide such services. Context may influence the implementation of a human service program (Maree, Ntinda, Seeco, & Mpofu, in press).

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Method

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Research Approach

Participatory action research (PAR) methods were used to construct a consensus driven framework for the use of tests in Botswana schools. PAR methods acknowledge

and respect consumers as informed and comparable in importance to professionals in charting the nature and quality of assessment services needed by the consumers (Dick, 2006; Reason & Bradbury, 2008; Strauss & Corbin, 1998; Torre & Fine, 2006). PAR approaches are consistent with the notion of schools as learning communities (Jansen, 2009) in which members share ideas to improve the overall learning experience for all involved. Constructing a framework for use in school with consumer input (i.e., educators, learners, and parents/guardians) empowers consumers in prioritizing their needs for which test data may help address important school-related issues.

Participants and Setting

This study was national in scope. Participant informants were recruited from all regions (n = 10). Cluster random selection methods were used to recruit schools from across the nation. Public and private schools were sampled in proportion to their representation in the national school establishment. The number of participant schools recruited from each region subgroup was equal to their proportion in the national population of schools. Contiguous schools within a school district were clustered and then were selected randomly. Once schools were selected, educational personnel were selected randomly and consistent with the staff's demographic profiles. Classrooms were sampled randomly within schools and learners sampled randomly within classrooms. Parents were sampled with the assistance of the school administration and with the requirement that they were literate in either the local Setswana language or EnglishParticipants included males (35%) and females (65%), 355 learners (55% females; M age =14.7 years; SD = 6.1 years), 162 parents/guardians (M age = 40 years; SD = 12.6 years), 1,221 educators (51% primary school specialists; M age = 37 years; SD

Table 1 : Study Sample Characteristics

	Frequency (%)	Demographics	Frequency (%)
	Educators	Learners	Parents/Guardian
Sex			
Female	792(65.0)	102 (29.0)	125 (77.2)
Male	429 (35.0)	253 (71.0)	37 (22.9)
School level			
Primary	668(54.7)	174 (49.0)	146 (90.7)
Secondary	553(45.3)	181 (51.0)	15 (9.3)
Sector			
Private	126 (13.9)	33 (9.3)	50 (14.7)
Public	1051 (86.1)	223(90.7)	303 (85.3)
Role function			
Teachers and counsellors	1151(94.0)	-	-
Education officers	70(6.0)	-	-

= 8.7; 12) (Table 1). They were from 328 schools (32% = primary/elementary, 18% = private). The modal education level was Standard Six (or Grade 8) for parents and an undergraduate diploma in education for educators.

Data Collection

Three key methods were used to collect data on both the structure of and preferences for forming a test use framework for use in Botswana schools: concept mapping, framework access preference measures, and key informant interviews. Each of these approaches contributed data that lead to a more complete understanding of the prospective framework for the use of tests.

Framework concept mapping. Forty-nine educators and school counselors from five of the 10 educational regions were engaged in a concept mapping process (Kane & Trochim, 2007), a goal of which was to construct the components and content of a prospective test use framework for Botswana schools. Concept mapping enabled workshop participants to describe social phenomenon from their views point. Participant data were collected in 2 to 4 workshops. The initial use of open-ended probes encouraged participants to brainstorm the features of the phenomenon of interest. Then a response structuring process is used to sort statements provided by the participant informants, resulting in forming meaningful clusters together with ratings of their importance.

Brainstorming. Botswana educators were asked respond to the following statement probe to brainstorm the qualities of a prospective framework to provide test services in Botswana schools:

Think about a psychometric tests use framework for learner support that would be useful for learners in Botswana schools to address their learning needs. As you think about this framework, please list 10 phrases or statements which you think this framework should address and write them in the numbered blank spaces on this form. Use this statement probe to guide your responses: An indigenous psychometric tests use for learner support should include_____.

These statements were edited for clarity and duplication, resulting in a final list of 100 different statements. Each statement was printed on 3" x 5" cards. Participants were given all 100 cards to sort for similarity in meaning and to rate for importance.

Sorting and rating. During the sorting phase, each participant was asked to group the 100 cards into piles in ways that made sense to them. During the importance rating phase, each participant was asked to rate each statement using a 5 point Likert-type scale on the its relative importance to mapping a framework for tests use in the schools (relatively unimportant = 1 to extremely important = 5). Information from these participant ratings was used to identify the components of a contextually relevant learner oriented framework.

Framework access preference methods. Framework preference methods were used by educators, learners, and parents/guardians to identify desired test qualities for use in Botswana schools. Surveys were available to participants in both English and Setswana. Educators identified their preferences for the structure, administration,

monitoring, and evaluation of the prospective framework for test use (0 = No, 1 = Yes).

The reliability of these preference data was .73. Learners and parents/guardians also

identified their preferences. The learners' framework access preference measure

included questions on their preference for in-school learner support service to provide

tests (i.e., whether SGC, CS or PACT programs should be responsible for promoting the

proposed testing services) and whether their school personnel should have access to test

results that address their educational, social/emotional, and vocational/career counseling

needs (scored 1 = Yes, 0 = No). The reliability of their preference data was .81. The

parents/guardian framework access preference measure included nomination of the

school educator they were most likely to consult to access test services for their child

(scored 1 = Yes, 0 = No). The reliability of their preference data was .80.

Procedure

The Botswana Ministry of Education and Skills Development granted permission for the

study. School principals acting in *loco-parentis* consented for the learners to participate.

Learners individually assented to the study. Education personnel and parents granted

individual written consent to participate. Participants were informed of the purposes of

the study, that their involvement the study was voluntary, that they could choose to not

answer any questions, that there were no monetary benefits for participating in the study,

that there were no anticipated risks involved, and that data collected would only be used

for the purpose of the study. Participants also were informed that their participation

could be important in promoting the quality of education among learners in Botswana

schools and that their participation was highly valued. School and individual were not

identified by name and instead by numeric affix de-identifier codes.

Data Analysis

Data were analyzed using concept systems software (Concept Systems, 2012) and the Statistical Package for the Social Sciences Version 19.0. The specific data analysis procedures are summarized below.

Concept mapping the framework. Concept-mapping software (Concept Systems, 2012) was used to help construct the components and content of the framework for test use in Botswana schools. The previously described free list statements from educators provided the content. The Concept Systems program utilizes multidimensional scaling (MDS) and hierarchical cluster analysis (HCA) to form concept maps. Its output includes cluster rating maps (see Figure 1 below) and other descriptive statistics usable for program development and evaluation. The cluster map provides a summary visual representation of the ways in which participants grouped or sorted the statements for similarity in meaning. Items are mapped with line boundaries, constructed through applying MDS to map their conceptual proximity from statement cluster sorting by the participants. The number and location of the items within the cluster determine the specific shape of the cluster boundary, and a sten statistic then applied to the most parsimonious map configuration. The cluster-rating map reflects the degree of importance, as rated by the respondents, of the item clusters after applying HCA. Thus, the higher stacked clusters signify greater importance than the lower stacked clusters.

Concept Systems generate a sten statistic to measure variance for cluster solutions. It is interpreted similarly to the Wilk's Lambda (λ) in that lower indicator values denote higher accounted for variance from the specified cluster solution. Descriptive statistics from the cluster rating map were used to perform pair-wise t-test comparison analyses

(with the Welch-Aspin index) of the tests use framework components for their relative importance in the Botswana schools setting as perceived by the educators.

Framework access preference analysis. The Wilcoxon Rank Sums test was used to examine the order of preference for the framework access qualities. The rank order analysis was performed to evaluate possible preference differences in how test services should be accessed by learners and parents/guardians, contrasting those from both public and private schools.

Results

Structure of the Framework for Test Use in Botswana Schools

Our goal was to construct a consensus test use framework for use in Botswana schools in light of the preferences of Botswana educators, learning, and parents/guardians. The cluster rating map, derived from the concept mapping analysis (Figure 1), displays six broad components or areas of learner support for which tests are desired. The ratings of their importance, reflected in their means (and standard deviation) were as follows: aptitude assessment (M = 4.05 SD = 0.31); learning readiness (M = 3.96 SD = 0.25); guidance and counseling (M = 3.93 SD = 0.34); personal development (M = 3.78, SD= 0.24); community norms (M = 3.71, SD = 0.29); and socialization (M = 3.62 SD = 0.26).

Meaning of the framework clusters. Content analysis of the statement from Botswana educators revealed their understanding of important aspects of a test use framework relevant to their schools. That is, they understood the aptitude assessment cluster refers to procedures to determine the probability of success in a school subject
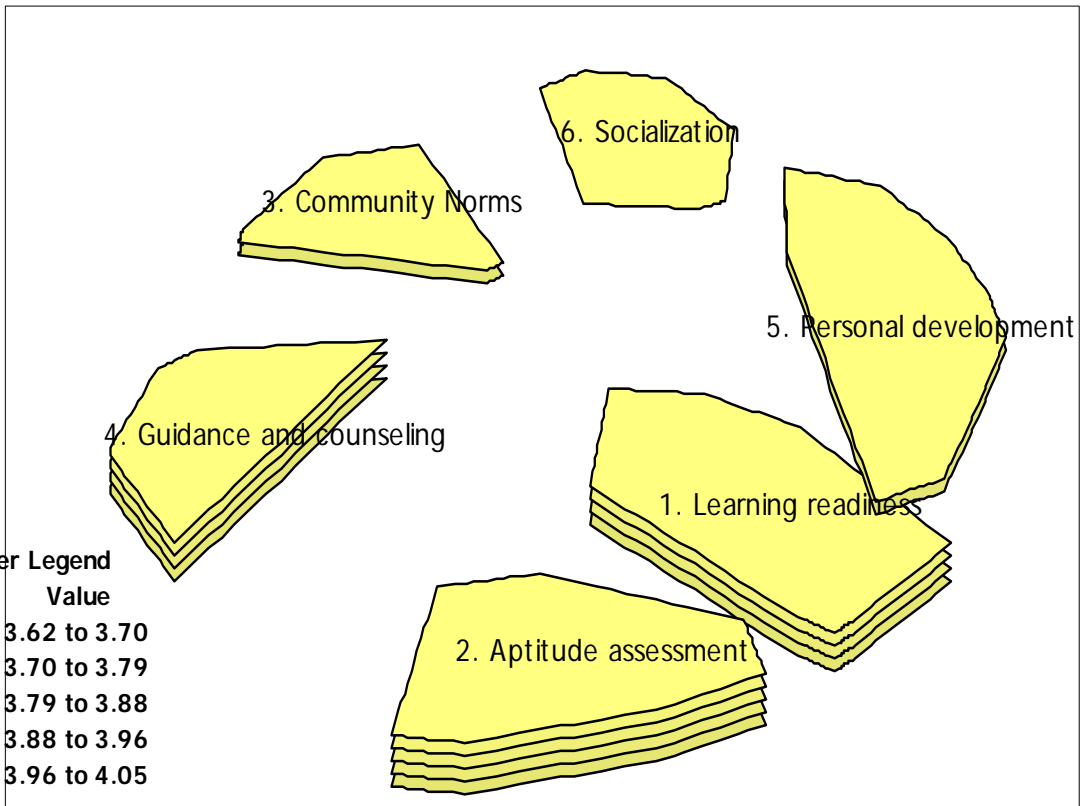
Cluster Legend

Layer	Value
1	3.62 to 3.70
2	3.70 to 3.79
3	3.79 to 3.88
4	3.88 to 3.96
5	3.96 to 4.05

Figure 1. Cluster rating map of the consensus framework for test use for Botswana schools framework cluster map. Higher stacked clusters indicate components considered particularly important to consumers. A sten statistic of .27 was observed for the six factor cluster solution represented. Alternative cluster solutions had lower accounted-for variance (in the .30s) and lower interpretability from over-splitting the clusters.

relative to a learner's ability; the learning readiness cluster refers to improving learners' ability and willingness to receive information; the guidance and counseling cluster refers to helping learners adjust or adapt to developmental needs; the personal development cluster refers to improving self- awareness, self-identity, and life aspirations; the community norm cluster refers to practices and beliefs typical of their society; and the socialization cluster refers to the process of change in individuals that result from their interaction with other individuals, social institutions, and social customs.

Relative importance of the framework clusters. Pair wise t-test comparisons with the Welch-Aspin index were used to determine the relative importance of the framework components. Components associated with learning attainment (i.e., learning readiness, aptitude assessment) were rated more highly than those for personal and social development (i.e., community norms, guidance and counseling, personal development, socialization) See Table 2 for comparison analyses.

For example, educators and school counselors prioritized aptitude assessment ($M = 4.05$, $SD = 0.31$) higher than socialization (3.62, 0.26), t (df = 96) = 7.43, $p < .01$; community norms ($M = 3.71$, $SD = 0.29$), t (df = 96) = 5.60, $p < .01$; and personal development ($M = 3.78$, $SD = 0.24$), t (df = 96) = 4.82, $p < .01$. Educators and school counselors also prioritized the assessment of learning readiness ($M = 3.96$, $SD = 0.25$) higher than the assessment of socialization ($M = 3.62$, $SD = 0.26$), t (df = 96) = 6.59, $p < .01$; community norms ($M = 3.71$, $SD = 0.29$), t (df = 96) = 4.57, $p < .01$; and personal development ($M = 3.78$, $SD = 0.24$), t (df = 96) = 3.63, $p < .01$. However, teachers emphasized the assessment of learning readiness ($M = 4.01$, $SD = 0.12$) comparatively

Table 2 : Difference Score Pair wise Comparison among the Learner Support

Ability Domains proposed by Botswana Educators and School Counsellors (N= 49)

Cluster Means (and Standard Deviations)	1.LR	2. AA	3. CN	4. GC	5. PD	6. S
1. LR 3.96 (0.25)	0.00					
2. AA 4.05 (0.31)	- 0.09	0.00				
3. CN 3.71 (0.29)	0.25*	0.34*	0.00			
4. GC 3.93 (0.34)	0.03	0. 12	- 0.22	0.00		
5. PD 3.78 (0.24)	0.18*	0.27*	- 0.07	0.15	0.00	
6. S 3.62 (0.26)	0.34*	0.43*	0.09	0. 31	0.16	0.00

*Note. *$p<.05$; **$p<.01$*

Note. LR= Learning Readiness; AA =Aptitude Assessment; CN=Community Norms; GC=

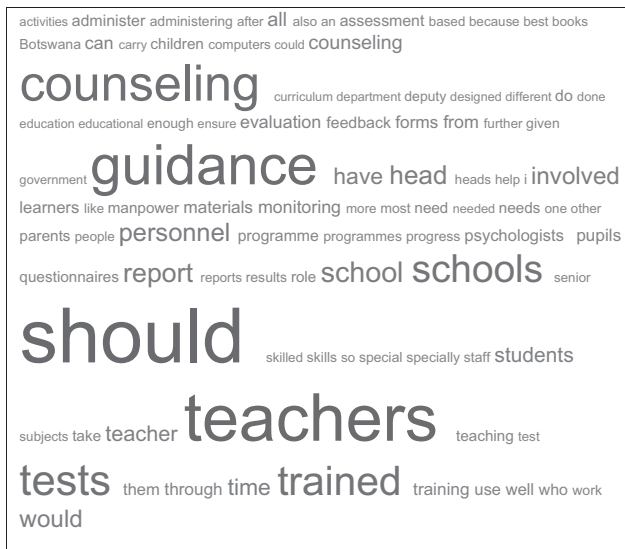*Guidance and Counseling; PD= Personal Development; S= Socialization*

Figure 2. Keywords frequency query Tag cloud showing school personnel preferences for the provision of tests in Botswana schools.

higher than did school counselors and professional counselors (M = 3.85, SD = 0.24), t

(df = 42) = 2.24, p < .05 (see Figure 2).

Preferred Tests Use Framework Implementation Platform

There is strong and generally uniform support that the school guidance and

counseling program implement test services. Moreover, the Wilcoxon Rank Sums Tests

of differences in the rank order in learner preferences for school personnel to access tests-

related information was similar across learner support need areas by type of schools:

educational needs; (Z = 0.10, p > .05), social development aspects (Z = 0.52, p > .05),

personal counseling (Z = 0.42, p > .05), and vocational/career counseling (Z = 0.26, p >

.05). Learners and parent/guardian expressed their preferences for classroom teachers

and school counselors to assist in providing test-related information to learners. This

finding was found for those who attended either public or private schools and for the

various areas of learner support needs (see Tables 3 and 4).

Discussion

Participatory action research (PAR) methods were used to construct a consensus

driven, consumer oriented framework for test use in Botswana primary and secondary

schools. This process included those that mapped preferences by educators, learners, and

parents/guardians for the delivery of test services. Various knowledge-building activities

were used to examine and illuminate the framework and needs for test use within the

guidance and counseling program, with the potential to inform strategy and policy issues

as well as to propose related financial and personnel resource recommendations. The

methodological design was multilayered, which added to the scope, trustworthiness, and

credibility of the findings.

Table 3.   Mean Rank Preference by Learners for School Personnel to Access Tests by Learner Support Area and School Type

	Public School Learners (N = 301)				Private School Learners (N = 49)			
	Mean Rank Scores by Learner Support Counseling Area							
	1. Edu- R	2. Soc-R	3. Per-R	4.Voc/Cr-R	1. Edu-R	2. Soc-R	3. Per-R	4.Voc/Cr-R
School Personnel								
Class teacher	1.92	2.30	2.26	1.82	2.30	2.71	2.33	2.35
School Counsellor	1.59	1.78	2.01	1.43	0.86	1.22	1.43	2.06
Subject teacher	1.70	0.96	0.64	1.61	1.67	0.80	0.30	1.61
School principal	1.03	0.85	0.72	1.08	0.98	0.69	0.71	1.02
Senior teacher	0.76	0.49	0.48	0.79	1.22	0.81	0.55	0.84
Pastoral care	0.17	0.48	0.55	0.35	0.10	0.28	0.48	0.47
Head of department	0.61	0.73	0.47	0.69	0.76	0.36	0.20	0.65
Deputy principal	0.76	0.67	0.53	0.63	0.42	0.55	0.61	0.55

Note. R = rank position. Higher mean rank score depicts greater preference for accessing tests services. 1 = Education/Learning readiness,

2. Soc = Socialization, 3. Per = Personal development, 4. Voc/Car = Vocational/Career.

Table 4. Mean Rank Preference by Parents/Guardians for School Personnel to Access Tests by Learner Support Area and

School Type.

	Parents of Learners Attending Public Schools (N =58)				Parent of Learners Attending Private Schools (N =15)			
	Mean Rank Scores by Learner Support Counseling Area							
	1. Edu-R	2. Soc-R	3. Per-R	4.Voc/Cr-R	1. Edu-R	2. Soc-R	3. Per-R	4.Voc/Cr-R
School Personnel								
Class teacher	1.26	1.60	2.10	1.50	1.60	2.07	2.00	1.47
School counselor	2.22	2.00	2.19	1.55	1.00	0.87	1.40	0.67

Subject teacher	1.47	0.66	0.72	1.45	2.20	1.40	0.73	1.80
School head	2.31	1.78	1.66	1.88	3.00	2.53	2.13	1.60
Senior teacher	0.79	0.29	0.36	0.97	0.80	1.20	0.87	0.53
Pastoral care	0.40	0.86	0.84	0.59	0.47	0.47	0.13	0.73
Head of department	1.14	1.01	0.59	1.40	1.67	2.27	1.20	0.67
Deputy head	1.78	1.03	1.07	1.28	1.73	1.40	1.20	0.40

Note. R = rank position. Higher mean rank score depicts greater preference for accessing tests services. 1 = Education/Learning readiness, 2. Soc = Socialization, 3. Per = Personal development, 4. Voc/Car = Vocational/Career.

Educators prioritized test use that promotes learning attainment as well as guidance and counseling components (i.e., learning readiness, aptitude assessment, guidance and counseling, and socialization) over those that focus on social and personal growth (i.e., personal development, community norms). This finding is consistent with and explainable by the fact that the Botswana school curriculum emphasizes learning readiness and cognitive aptitude over other types of abilities (i.e., social, personal, vocational, and community norms) (Ministry of Education, 2000; 1994). Priority placed on learning readiness and cognitive aptitude assessment as learner supports also is reported in previous studies (Stefanakis & Meier, 2010). Local education culture informs and influences school-based psycho-educational assessment practices (Abubakar et al., 2002; Alcock, Holding, Mung'ala-Odera, & Newton, 2008; Serpell, Mumba, & Chansa-Kabali 2011; Vogt, King, & King, 2004). Data from this study are consistent with and support this belief within the Botswana education context. In it, school achievement is highly valued for enabling productive participation in the country's modernizing economy.

Botswana educators express a preference for a framework for test use that supports the learner's educational achievement rather than their personal and social development. In contrast, school counselors express a preference for test use that supports personal and social development. The difference in framework use emphasis may be explained by the professional socialization of teachers versus counselors. Educators are trained to emphasize the learning-teaching aspects of schooling (Calderhead, 1989; Guberman & Greenfield, 1991), hence their emphasis on school attainment oriented learner supports. In contrast, school counselors as social justice

advocates for learners (Cox & Lee, 2007; Erford, 2007) are trained to emphasize the social and personal aspects of development, hence their emphasis on tests that focus on interpersonal aspects of well-being. Furthermore, their prioritizing community norms seemingly is consistent with their advocacy for social justice (Bhusumane, 2007; Cox & Lee, 2007; Hatch & Lewis, 2011).

Educator counselors, learners, and their parents/guardians emphasized similar aspects of school and personal/social adjustment best served by test use. These finding suggest that learners and their parents/guardians in this developing nation share common educational aspirations for the learners and that the attitudes of school personnel are consistent with this shared aspiration. These similarities may be attributed to the fact that the parents/guardians value schooling and may be involved in the school activities of their children. Parental involvement in their children's school program activities generally increases their knowledge of important aspects that support children in their learning (Christenson, 2003; Christenson & Carlson, 2005; Ditrano & Silverstein, 2006; Dodd, Saggers, & Wildy, 2009; Epstein & Dauber, 1991; Maree, 2010).

Learners and their parents/guardians preferred that learners access test information first from their classroom teachers followed by the guidance and counseling teachers. These preferences may be due to a number of factors. Learners typically form closer relationships with classroom teachers and school counselor than with other educational personnel. Additionally, they typically access educational resources through them. Consequently, learners would prefer classroom teachers and school counselors to access learner support services. The critical roles that classroom teachers and guidance and counseling teachers play in supporting learners in psychosocial development has

been observed in other studies (Brown & Trusty, 2005; Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008;. Lapan, Gysbers, & Petroski, 2003; Skin, 2009).

Implications and Suggestions for Further Research

This study is one of the first to explore the feasibility of using methods grounded in interpretive theory (Saunders, Lewis, & Thornhill, 2007) to construct a consensus framework for test use in a developing nation. The sensitivity of interpretive theory in conjunction with a socio-constructionist conceptual framework to help understand the subjective views individuals ascribe to social phenomena was evident (Maree, 2010; Maree, in press). The participants' views lead to a viable frame for the provision of test services. Thus, applications consistent with interpretive theory appear to promote useful and robust approaches that help develop human service structures in diverse settings.

The study provides strong support for the belief that education communities in developing or low/medium resource environments are capable, when given the opportunity and resources, to construct locally grounded learner support systems, including frameworks for the delivery of test technologies. To harness and exploit these support systems, a framework for test development in Botswana should build on characteristics such as creativity, group cohesion, intuition, imagination, forthrightness, and the ability to express oneself freely.

The documented consensus framework suggests local education communities in these environments display a strong capacity for and desire to engage in problem solving—in this case, identifying a locally relevant process to support student learning. The findings contradict the practice of habitually transporting frameworks for test use

from developed to developing nation settings without a thorough consumer focused audit of the needs for which the tests may be used.

The productive involvement of diverse members of a community lends support to the PAR-related concept of *community-in action* (Wenger, 1998). Interventions designed and implemented with consumer involvement often are more successful than those that lack community consensus (Alam, 2006; White, 2005). Thus, the use of PAR methods as a consultative tool can be important by involving participants as partners in the development of assessment services.

Educational personnel, learners, and parents/guardians, support the introduction of tests in Botswana to strengthen the existing guidance and counseling program. They include tests that assess for both school and community participation to promote understanding of self-regulation (e.g., communication skills, learner's decision-making skills, sense of personal responsibility), educational advancement/progression (e.g., learner's academic performance, learning difficulties, special needs education), social-vocational/career (e.g., career counseling, career interests, student's self-concept), and ability/aptitude (e.g., thinking styles, approaches to learning, quality of the learning environment). Considerable emphasis is placed on promoting self-regulation and responsibility in Botswana children—qualities often desired in children raised in other developing countries (Maree & Van der Westhuizen, 2011). Children from these countries often are expected to mature more quickly and to assume higher levels of adult responsibility earlier than their age peers in many Western nations (Marfo, 2011; Serpell, 2011). Additionally, educational achievement and advancement constitute the core of

education—an institution second in importance only to one's family in promoting child growth and development.

Learners' initial vocational decisions are critical in Botswana. They impact whether and how long they remain in school, what courses they take, and their vocational options. Additionally, federal policy (e.g., Botswana Millennium Development Goals, 2004; Revised National Policy on Education from the Ministry of Education, 2004) highlights the importance of preparing students for viable vocations. Additionally, methods that assess learners' abilities and aptitudes are used commonly in other countries to identify talent and guide student development. The introduction of tests to assist in making vocational decisions would likely benefit individuals, their families, and the nation. This would include use of narrative inquiry approaches to check on the trustworthiness of data from quantititave tests (Maree, in press, Savickas, 2002; 2011; Winsdale, 2011). .

The implementation and continued provision of desired testing services would require the commitment of additional financial and personnel resources. Such services, if assumed by the Botswana school guidance and counseling programs, would add future value to their services yet would require additional resources. The successful introduction also requires support and participation by teachers, especially classroom teachers. For example, teachers who believe in the importance and effectiveness of an innovation are more likely to implement it and to apply quality methods to achieve the goals of the innovation (Gottfredson & Gottfredson, 2002; Ozer, Wenis, & Bazell, 2010). Additional training needs to implement the proposed program were expected and apparent.

Support for test use also relies heavily on public support. Thus, efforts are needed to educate the public, including learners and parents, about the advantages and limitations of test use and how to access and best use such services. Thus, the professional preparation and employment of school personnel who would serve both as a specialist in test use and regular education teacher would provide needed professional services at the school level while minimizing expenses.

Additional studies are needed to identify the specific tests that that would be needed for use in the Botswana primary and secondary education levels; the manner in which tests may be used; structures required for monitoring and evaluating the assessment program together with the training needs involved in the use of tests; and the human, material, and financial resources needed to meet the test support services. Additionally, the introduction and continued support for test use in Botswana and other developing countries would be furthered by the receipt of support and assistance from regional (e.g., European Union, United States Department of State) and international (e.g., United Nations) agencies. The International Test Commission and its members as well as national and international psychological associations may be in a position to assist in promoting professional development. However, the capacity and willingness of these multi-lateral bodies to assist test use initiatives in Botswana is unknown.

Conclusion

A consensus framework for the use of tests in Botswana comprises the following elements: learning readiness, aptitude, guidance and counseling, community norms, socialization, personal development. School personnel, learners, and parents/guardians

displayed a high degree of consensus regarding the qualities of a framework for test use relevant to Botswana's school system.

PAR methods areuseful for developing locally grounded consumer oriented learner support systems in developing contexts. Learners and their parents/guardians are important constituencies in the development of school service systems and should be partners in such efforts. The study constructed a consensus demonstrated credible processes to develop a consumer oriented framework for use of tests in a developing nation and with a cross-section of informants invested in the country's education services: educators, counselors, learners, and parents/guardians,. The processes used for this study are ones that could be adopted for similar work in other locations.

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