

# An Evaluation of Head Teacher Leadership in Lusaka District of Zambia: Preliminary Findings

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**Abstract:** *The purpose of this paper is to evaluate head teacher leadership in Lusaka district of Zambia. In the process, the paper determines the alignment and applicability of the learning-centred leadership framework and its assessment model with Zambia school leadership. The paper also seeks to deduce any evidence that demonstrates the presence and effectiveness of school leadership behaviours and processes known to influence school performance and student achievement there by showing construct validity and reliability of the framework. The paper applies both qualitative and quantitative methods through specialist panel evaluation, pre-testing and field-testing of the framework and its assessment instrument. The findings indicate a discrepancy between the theoretical framework of the VAL-ED and Zambian standards, despite demonstrating reliability, construct and criterion validity.*

**Keywords:** Head teacher leadership, Assessment, Validity and Reliability study, Cross-cultural comparison

## 1. Introduction

Research informs us that a review of school leadership found that the quality of the principal leadership alone accounts for 25% of a school's impact on student learning [18]. Some studies have demonstrated a statistically significant relationship between principal leadership behaviour and effective schools [3], [10], while others have shown the effect to be negligible [31]. The pool of research in this area does not seem to be broad, particularly studies outside the western countries. In conducting their meta-analysis, [18] were only able to identify 69 studies in the last 35 years. Robinson [29] discovered in search of the international literature only 24 studies published between 1985 and 2006.

### 1.1. Statement of the Problem

The overall research problem to be addressed in this study is that despite the presence of studies with empirical evidence on effects of school principal leadership behaviours and processes on school performance and student achievement in the western countries, little has been done to analyse what influence if any in the Zambian context.

### 1.2. Purpose

The paper explores effective school leadership through the learning-centred leadership framework, and its assessment model whose conception is research-based. The goal of this article is therefore to determine the alignment and applicability of the learning-centred leadership framework and its assessment model with Zambia school leadership. The paper also seeks to deduce any evidence that demonstrates the presence and effectiveness of school leadership behaviours and processes known to influence school performance and student achievement in Lusaka District of Zambia. In the process, the paper will gain insight into perceptions of effective head teacher leadership behaviours as well as understand these perceptions from the head teacher, head teacher supervisor, and teacher's perspectives.

Also, this paper addresses the understanding, use and application of theories and explores possible solutions to their adaptation. It is against the background that there are common elements in contemporary international educational policy that has growing interest in sharing leadership theories and successful models. The paper aims to contribute to knowledge production on school leadership in Zambia.

### 1.3. Objectives

In this study, the specific objectives were to: (a) examine how well the learning-centred leadership framework and its assessment model aligns with Zambian school leadership, (b) determine the presence and effectiveness of school leadership behaviours and processes known to influence school performance and pupil achievement.

## 2. Literature Review

### 2.1 Conceptual Framework

The Learning-Centred Leadership Framework establishes a leadership assessment system model that attempts to capture in broad strokes how education leadership has and might be assessed [23], [25]. The model has the following important features:

The focus of this assessment model is on leadership behaviours. The model shows leadership knowledge and skills, personal characteristics, values and beliefs as precursors of the actual leadership behaviours exhibited by individuals or teams in performing their leadership responsibilities. The model emphasises that assessment of education leadership should focus on leadership behaviours found in the literature on effective schools and school districts.

The theory of action underlying the leadership assessment instrument focuses on two key dimensions of leadership behaviours: core components and key processes. The framework states that school leadership assessment should

include measures of the intersection of these dimensions. The instrument, therefore, has to measure effective school leadership indicators as they relate to school performance. Effective learning-centred leadership is at the intersection of the two dimensions: core components created through key processes.

The Vanderbilt Assessment of Leadership in Education (the VAL-ED) assesses the intersection of what principals must accomplish to improve academic and social learning for all students (core components), and how they create those core components (the key processes). A substantial research base supports the constructs of the core components and key processes [14], [16], [23], [8], [9]. The core components of learning-centred leadership represent the extent to which the principal ensures the school has: high standards of student learning, rigorous curriculum, quality instruction, a culture of learning and professional behaviour, connections to external communities, and performance accountability [17], [25], [30].

Key processes are leadership behaviours, which refer to the ways in which leadership, individually, and collectively, influence organizations and their constituencies to move toward achieving the core components [1], [2], [23], [25]. The processes are planning, implementing, supporting, advocating, communicating, and monitoring.

## 2.2 The Instrument

The VAL-ED [26] is a paper and online assessment that utilises a multi-rater, evidence-based approach to measure the effectiveness of leadership behaviour known to influence teacher performance and student learning. The VAL-ED is a “360-degree” assessment; that is, key people surrounding the principal (i.e., teachers, the principal, and the principal’s supervisor) respond to the behaviour inventory. The VAL-ED measures core components and key processes in the leadership conception. The outcomes of the assessment include a behaviour inventory or profile, interpretable from both norm-referenced and standards-referenced perspectives [25]. The VAL-ED requires respondents to make judgments about a principal’s leadership behaviours that influence teachers’ performance and students’ learning.

Respondents were specifically asked how effective the principal is at specific actions that affect core components of learning-focused leadership. The effectiveness ratings range from 1 = Ineffective to 5 = Outstandingly Effective for each of 72 behaviours. These behaviours sample all 36 cells of the conceptual model of leadership equally and thus serve as indicators of the construct of leadership the framework desires to measure [6].

The respondents are asked to rate the extent to which the principal ensures behaviours and actions are taken in the school, thus acknowledging that principals do not necessarily perform the behaviour themselves, but often designate and distribute these leadership practices and behaviours throughout the school. Respondents’ ratings of effectiveness should be based on evidence they have collected or reviewed during the current school year. If a respondent does not have

any evidence upon which to make an effectiveness rating, he/she must rate the principal as Ineffective [7].

The significance of the use of the Learning-Centred Leadership Framework and its assessment instrument the VAL-ED is that it measures leadership behaviours and practices. This tool can be used for head teacher evaluation, coaching, and professional development. This kind of measurement instrument currently lacks in the Zambian educational leadership assessment system.

The evaluation functions in Zambia are performed through school inspections using monitoring tools at teacher, head of a department/section, head teacher, and institutional levels. The head teacher monitoring tool evaluates the head in all areas of the school, i.e. staffing and establishment, school routine, school committees/functions, board sub-committees, meetings, records management, pupils security, infrastructure/facilities, school projects, user fees, and guiding principles. The head has to provide evidence as to whether the particular aspect has been done to the satisfaction of the inspector.

## 2.3 Challenges in Validating Cross-Culture Conceptual Construct

Care, however, must be taken in the use conceptual constructs such as leadership across cultures. It is because not only may the particular leadership framework being emphasised vary culturally, but also the same framework may have different meaning in different cultures [12]. While a majority of previous research on cross-cultural validation has been in the clinical psychology and medical field, numerous attempts have also been made to examine the construct equivalence in management and leadership concepts [5], [11], [12].

## 3. Methodology

### 3.1 Research Questions

Specifically, the study seeks to answer the following research questions:

- 1) How well do the learning-centred leadership framework and its assessment model aligns with Zambian school leadership?
- 2) What evidence is there that demonstrates the presence and effectiveness of school leadership behaviours and processes known to influence school performance and student achievement?

### 3.2 Research Design

To answer the research questions, some studies were designed that were specifically related to the cross-cultural use of the VAL-ED and to collect information on school leadership behaviours and processes known to influence school performance and student achievement. Each study embodied sub-studies that contributed to one or more research questions (see Table I below).

**Table I: Study Design and Analytic Strategies**

Research Questions	Analytic Strategies	Validity Evidence	Sampling & Data Collection
Framework & Assessment Instrument Alignment	Alignment analysis (qualitative)	Detailed survey results and descriptive feedback from specialist panel on the importance and relevance of the assessment items – Face and Content Validity	Purposive sampling based on area of expertise Panel: -Teacher training institutions -Ministry of General Education
	Pilot Test (qualitative)	Responses from intended users on their performance of the assessment items – Content Validity	Purposive sampling reflective of assessment target group: -Head teachers -Teachers -Supervisors of head teachers
Effectiveness & Presence of Behaviours & Processes (Reliability & Validity of the Instrument)	Factor Analysis (quantitative)	Empirical cluster pattern of the assessment items as compared with the conceptual structure – Construct Validity	Purposive sampling representative of key characteristics of intended assessment target group
	Internal Consistency Check (quantitative)	Consistency of the assessment item scores across subscales, users, and overall - Reliability	Schools: -Head teachers -Teachers -Supervisors of head teachers
	Criterion Validity Analysis (quantitative)	Relationship with other measures used concurrently in the intended setting – Criterion Validity	
	Comparison with ECZ Results	Relationship of VAL-ED and Zambian criteria with other school/pupils performance indicators	Scores of VAL-ED, Zambian criteria, & ECZ-Grades 7 & 9

Research Question 1, alignment of the framework and its assessment model, will be answered mainly with the specialist-panel alignment analysis and a pilot study results producing qualitative and quantitative evidence and in the process validating the instrument. This question also relies on the composite results from all studies to determine to what extent the framework and the tool align with the standards of the Zambian education system or indeed be modified, and if so, where and how. Research Questions 2, the presence and effectiveness of school leadership behaviours, will be answered mainly by factor analysis, internal consistency check, criterion validity analysis, and summary comparison using the VAL-ED scores which focus on the two key dimensions of leadership behaviours: core components and key processes. Also, information to be collected from research question 1 regarding the theoretical framework and instrument saves as an important aspect of the validity check for the VAL-ED scores because the tool was designed to conceptualise the Framework.

### 3.3 Target Population and Sampling Procedure

The target population for this study was the government grades 1-9 primary schools' head teachers, teachers and supervisors of head teachers in Lusaka district. Lusaka district has a total of 92 primary schools with a total of 4334 teachers and a student population of 179,488. The total number of government primary schools (grades 7-9) in the district was 79 with a total 4003 teachers and 162,046 students. The supervisors (who are standards officers) numbering two (2) are based at the district offices. Purposive sampling was used [15]. Schools in the target area had to meet minimum sampling requirements of the head teachers should at least have been at a particular school for not less than one year. Also, the teachers and the supervisor should have worked with the head teacher for at least a year before the assessment instrument being administered. Out of 79 schools, 53 had head teachers who had been at the school for at least one year before the study. The 53 schools were

evenly spread across the nine (9) administrative zones in the district. Under the District Board Secretary Office (DBSO) primary schools in Lusaka district are divided into nine (9) zones for ease of management. The zones being Chibolya, Chilenje, Chipata, Emmasdale, Kaunda Square, Lilanda, Lusaka Central, Matero and Mumuni. The 18 schools represent a fair distribution of the district since two schools were randomly selected from the each of the nine administrative zones. The schools all offered grades 1-9 with the smallest pupil population of 931 and the largest at 4,433. The location of the schools was varied from those in low-density areas to those in high density. The pupils' family background also ranged from those with merger sources of income to the affluent.

### 3.4 Sample and Profile

Table 2 below shows the distribution of the final sample that consisted of 16 head teachers, 308 teachers and two supervisors (Education Standards Officers – ESO) who assessed the head teachers. The gender distribution of the head teachers and supervisors was even while for the teachers it was skewed towards the female teachers by a ration of 1:4.

**Table 2: Survey Participants**

Participants	Frequency	%	Gender			
			F	%	M	%
Supervisor	18*	5.3	1		1	
Head Teacher	16	4.7	8	50%	8	50%
Teacher	308	90.1	250	81%	57	19%
Total	342	100.0				

\*Two supervisors assessed 18 head teachers.

Table 3 below shows participants' academic/professional qualifications and experience respectively. The two supervisors are masters' holders while nine head teachers are diploma and six-degree holders, with one not specifying. The majority of the teachers (58.4%) were diploma holders, with 14.3% degree, 20.5% certificate holders while 6.2% did not

specify. The supervisors had experience of between 6-10 years, while 13 head teachers had over 20 years. The teacher's experience was evenly spread over the categories (Table 4).

**Table 3: Participants Academic Qualifications**

Participants	Academic Qualification				
	Not Specified	Certificate	Diploma	Degree	Masters
Supervisor					2
Head Teacher	1		9	6	
Teacher	19 (6.2%)	63 (20.5%)	180 (58.4%)	44 (14.3%)	2 (0.6%)

**Table 4: Participants Years of Experience**

Participants	Experience				
	Below 5yrs	6-10yrs	11-15yrs	16-20yrs	Above 20yrs
Supervisor		2			
Head Teacher		1	1	1	13
Teacher	71 (23%)	81 (26%)	40 (13%)	64 (21%)	51 (17%)

Table 5 below provides a summary profile of participating schools in the study. The overall return rate for the assessment was 36.8%, and at school level was above 22%. Two head teachers did not return the assessment because one was transferred during the process while the other fell ill. All assessments from the supervisors were returned. Of the 16 head teachers, 12 had attended some form of leadership training. The combined experience of being the head teacher was 127 years of which 64 years was at the respective schools.

A total of 11% of the participating teachers had a position of responsibility as indicated in Table 4.13 below. The participating teachers taught different subjects and combinations. The majority of teachers taught two or more subjects (75.65%).

**Table 5: A Summary Profile of Participation Schools**

School ID. No.	School Zone	Students No.	Teachers No.	Returned Assessments	Rate (%)	Percent of Total Sample	Years as Head teacher	Years as Head teacher of this School	Leadership Training
1	Chilenje	1,474	63	16	25.4	4.7	7	3	Yes
2	Kaunda Square	1,880	63	16	25.4	4.7	14	2	Yes
3	Kaunda Square	1,776	57	17	29.8	4.9	14	12	Yes
4	Lusaka Central	1,773	71	22	30.9	6.4	4	2	Yes
5	Chibolya	3,768	63	32	50.8	9.4	9	5	Yes
6	Chilenje	931	56	18	32.1	5.3	-	-	-
7	Matero	1,982	40	16	40.0	4.7	5	1	Yes
8	Chipata	3,381	56	16	28.6	4.7	4	2	No
9	Lilanda	2,164	44	16	36.4	4.7	4	4	No
10	Mumuni	1,656	69	17	24.6	4.9	1	1	No
11	Chibolya	1,124	44	23	52.3	6.7	9	2	Yes
12	Lilanda	2,233	39	15	38.5	4.4	5	4	No
13	Mumuni	2,199	66	15	22.7	4.4	15	8	Yes
14	Matero	1,001	35	22	62.9	6.4	6	3	Yes
15	Emmasdale	4,433	53	13	24.5	3.8	-	-	-
16	Chipata	2,714	44	16	36.4	4.7	4	3	Yes
17	Emmasdale	1,847	44	30	68.2	8.8	11	10	Yes
18	Lusaka Central	2,067	66	22	33.3	6.4	15	2	Yes
	Total	38,403	973	342	36.8*	100	127	64	

\*Includes supervisors, without its 35.1% of the participating schools

## 4. Data Analysis and Findings

### 4.1. Study 1: Specialist Panel Examination of the Learning-Centred Leadership Framework and the VAL-ED Instrument. (Research Question 1)

This study aimed to examine the Learning-Centred leadership framework and the VAL-ED instrument items, responding to Research Question 1: How well do the learning-centred leadership framework and its assessment model align with Zambian school leadership in the opinion of experts? The study had two parts: alignment analysis and modification of the framework and instrument.

#### 4.1.1 Part A: Alignment Analysis

The alignment study was designed for four content validation purposes to: (a) find out how much of the substance of the VAL-ED items collectively and individually reflect the leadership practice and standards in Zambian primary schools, (b) see if there were any missing core components or key processes in the Zambian context, (c) find out if one or more core components or key processes might be considered not "core" or "key" in the Zambian context, and (d) detect any differences in the interpretation of the core components and key processes for further clarification and modification in the revised version.

The fact that the mean score for reality was consistently lower than the importance rating for all the six core components and six key processes of the VAL-ED indicated

the presence of gaps between what was considered necessary to enhance learning-centred leadership and what was believed to be practised by head teachers. Cravens (2014) in a study conducted in China arrived at a similar conclusion. The different gaps among the core components and key processes would indicate that the VAL-ED is aligned in some areas and not others. VAL-ED alignment appeared to be on the core components related to the culture of learning and professional behaviour and quality instruction, but not related to rigorous curriculum. Also, alignment appeared to be in the key processes related to communication, but not to individual VAL-ED items concerning pupils with special needs and curriculum.

The panel of specialists made some written comments and suggestions about the VAL-ED instrument. They found the tool to be clear and unambiguous. However, they thought it would pose a challenge in the following areas:

- The instrument was too long, and teachers may not be eager to participate in the survey.
- Teachers may be apprehensive because they might think the tool borders on reporting on head teachers.
- Some items in the instrument seem to be repetitive in that they convey the ideas.
- Possible concern on how impartial the teachers would be in assessing the head teacher without the fear of victimisation.
- Teachers who do not want to evaluate their head teachers may use the Likert-scale response of 'Don't Know' as an option.

The panel of specialist also offered suggestions on how the instrument could be improved as follows:

- The need to use precise and simpler terminologies familiar to the Zambian teaching community.
- A provision should be included to capture the qualification of the head teacher and especially specific training in leadership and management.

#### **4.1.2 Part B: Instrument Modification**

Based on results from the alignment analysis, modification of the instrument items was refined for clarity and improved reflection of the construct. To ensure that the existing LCL Framework and VAL-ED items could be tested for cross-cultural applicability, no core components, key processes, and items written for their inter-sections were deleted or added.

#### **4.2 Study 2: Pilot Study - Validation of Instrument. (Research Question 1)**

The purpose of the Pilot Study was to assess the construct validity of the VAL-ED instrument before the assessment items were finalised by evaluating the construction of the instrument content, including both the assessment items and the design of the instrument upon completion of the specialist' examination of the framework.

Overall return percentage was 46% of the issued instruments. A study of how the instrument was completed by the respondents shows that there was a negligible item with missing data (1.4%), which was far below the 10% set by the

researcher for a questionnaire to be excluded. The response 'don't know' was 2.83%, which was also negligible. All key processes and all core components except the culture of learning and professional behaviour had some missing data. However, since the data missing was negligible, the instrument was therefore considered ready for use in the field without any further modifications.

#### **4.3 Study 3: Measure Presence and Effectiveness of Behaviours and Processes. (Research Question 2)**

The final version of the modified VAL-ED instrument was then used to examine the presence and effectiveness of behaviours and processes using the rating scale scores collected from a sample of school heads, their supervisors, and teachers in their schools. Analysis of the VAL-ED ratings included descriptive statistics, correlations, and factor analysis, including estimates of internal reliability and validity measures. A comparison was also conducted between the VAL-ED scores and the ECZ grades 7 and 9 results.

Missing Data. VAL-ED data was particularly examined to ascertain missing pattern and frequency. Construct validity of the assessment instrument could be threatened by a high frequency of missing data. Missing data occurred, however, the problem appears to be relatively small or negligible and evenly spread across all items, core components and key processes. The missing data percentages for the 72 items are an average of 3.2%, from the lowest of 0.3% (items 13, 24, 49) to the highest of 6.1% (item 65). The missing data for core components and key processes average 2.1% and 2.2% respectively. Core components connections to external communities have the highest mean average of 3.2% with the culture of learning and professional behaviour the lowest at 1.2%. Key processes advocating has the highest mean average of 2.8% with planning and monitoring the lowest at 1.8%. There were no missing items on the 6-item Zambian criteria assessment.

The percentage of 'don't know' as a response to the effectiveness rating is another important criterion for data quality for the VAL-ED scores. Appendix 4.2 shows the overall VAL-ED 'don't know' responses by item, core component and key processes. The calculated mean overall is 4.0%. Two core components connections to external communities (6.4%), rigorous curriculum (4.5%), and two key processes monitoring (5.1%), and advocating (5.0%) are above the overall mean. The response for 'don't know' was higher than the 'missing'. You will recall that specialists expressed concern over this response option as teachers may use it if they did not want to assess their head teachers. However, this is a matter that will require further examination in future studies.

#### Sources of Evidence for Effectiveness Ratings

The types of evidence used shows that slightly over half of the respondents used personal observations as a means of determining the effectiveness rating, with close to a quarter using school documents. Less than 10% of the respondent used reports from others or other sources, while just below 15% used school projects or activities. The effectiveness rating was supported by at least one 'evidence' as the missing

data was negligible. Including sources of evidence is an important feature of the VAL-ED assessment aiming at increasing the accuracy and reliability of the results. This result is an indication of how well Zambian participants responded to the requirement of checking the sources of evidence.

**Factor Analysis.** The Exploratory Factor Analysis (EFA) was conducted to examine factorial validity of the VAL-ED items in the Zambian setting. The aim was to check if the core components and key processes as postulated in the VAL-ED theoretical framework could be supported by the observable data. When conducting factor analysis, the value '0' (missing) and '6' (don't know) were treated as missing. This is because a '0' cannot be considered to be less than '1', and '6' cannot be considered to be greater than '5'. That left only 135 cases with no missing values for the 72 variables, which would not be enough to do a factor analysis. Therefore the route of 'pairwise missing' was followed which means that a correlation coefficient between variables A and B is based on all the cases for which both A and B are present. In other words, correlation coefficients for each pair of variables are based on all the cases with valid data for that pair. The factor analysis was based on these considerations. The Kaiser-Meyer-Okin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were good as indicated in Table 6 below.

**Table 6:** KMO and Bartlett's Test

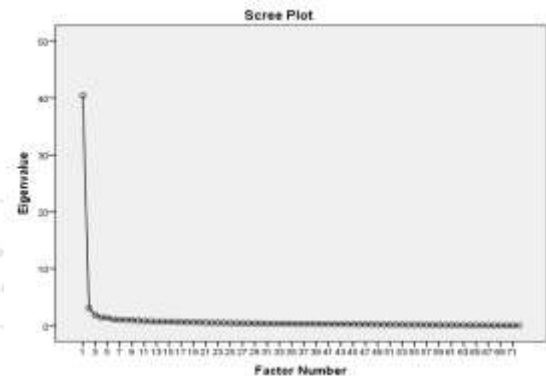
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.964
Bartlett's Test of Sphericity	Approx. Chi-Square	19586.542
	df	2556
	Sig.	0.000

Five factors were identified using principal axis factoring and varimax rotation. The Cronbach Alpha for these five factors were high as indicated in Table 7 below. Even though a cut-off of .40 was used to interpret solutions from the orthogonal rotation, none of the items was below the cut-off. All the 72 items loaded on five factors with 47 items (65.3%) having clear loading while 25 items (34.7%) had dual-factor loading. The Eigen values larger than 1.0 accounting for 64.5% of the

cumulative variance, which is also depicted in the scree plot (Figure 1). The scree plot shows that when the Eigen value gets close to 1.0 the plot levels off to a linear decreased pattern.

**Table 7:** Factors Cronbach's Alpha

Factors	Number of Items	Cronbach's Alpha
1	20	0.974
2	21	0.973
3	12	0.963
4	10	0.941
5	9	0.944



**Figure 1:** Scree Plot Eigen Values for Factor Determination

The EFA results showed a factor structure that reflected the LCL theoretical framework of core components and key processes, though not a perfect match. The items lacked the discerning power to take into account the six-components framework.

To have a clear understanding how the factor structure based on the empirical data aligns to the VAL-ED framework, factor loadings were retained and plotted into the two-dimension matrix for core components and key processes based on their factor clusters. The dual-factor loading was assigned to the factors with the higher mean score (Figure 2).

Core Components	Key Processes											
	Planning		Implementing		Supporting		Advocating		Communicating		Monitoring	
High Standards for Student Learning	4	4	4	4	4	4	4	1	4	4	4	2
Rigorous Curriculum	2	1	2	2	2	2	2	2	2	2	2	2
Quality Instruction	1	2	3	2	2	2	2	2	2	2	3	3
Culture of Learning and Professional Behaviours	3	3	3	3	3	3	3	3	1	3	1	1
Connections to External Communities	1	1	1	1	1	1	1	1	1	1	1	1
Systemic Performance Accountability	5	1	1	5	5	5	5	5	5	5	2	5

**Figure 2:** Factor Structure of the LCL Framework Plotted with Zambian Data

The core components that are more distinctively represented by the factor structure are high standards for student learning (factor 4), the culture of learning and professional behaviour (factor 3), connections to external communities (factor 1), and systemic performance accountability (factor 5). The clustering of items around the principal factors, even though impressive, will require some adjustments to make the core components clear-cut.

The items clustering around factor 2 are concentrated on two core components of rigorous curriculum and quality instruction. This will require a lot of adjustment to establish a discerning power in the items, agreeing with the perception of the panel of specialist.

The key processes that more distinctively represented by the factor structure are supporting, implementing, advocating, and communicating even though they may also require some

adjustments. The clustering around monitoring and planning require more adjustment to have a clear-cut, tallying with perception of the panel of specialist.

In a study of instructional leadership in the Central Province of Zambia, Kabeta et al., [13] established that head teachers felt that they were not involved with issues of curriculum and goals, which were dealt at the national level. Head teachers also revealed that the majority did not supervise most processes and components including monitoring student progress and protecting instructional time to teach because they were busy with administrative work.

The findings indicate the need for modifications and refinement to the items and even possibly to the framework for better alignment of actual factor structure and theoretical framework. This is because the factor structure is not clear. The items clustering patterns appear to be scattered across core components and key processes, with one factor accounting for two components. Importantly, this indicates discrepancy between the theoretical framework of the VAL-ED and the findings do exist. Even though fewer factors underlying the data were identified than the framework hypothesises, encouragingly the clustering of five factors against six components gives some hope. Factor 2 items, which accounted for two components will require more work and adjustment to align.

Noteworthy is that, without being confined to a priori factor structure, the empirical results found preliminary evidence of four VAL-ED core components to stand as unique factors that are distinct from one another hence represented logical constructs both individually and combined for learning-centred leadership. The EFA data has provided a map of the construct domain based on the effectiveness rating of the assessment from the 18 schools and 308 teachers in Lusaka district.

**Reliability Analysis.** Reliability is an essential part of any assessment and concerns the internal consistency of the scores. The Cronbach's alpha values of each scale for core components and key processes were calculated, and their inter-rater reliability for teacher-teacher, teacher-head teacher, teacher-supervisor, and head teacher-supervisor. All subscales exhibited excellent internal consistency with Cronbach's alpha larger than 0.94. The alpha value for the 72 items overall scale was 0.95.

Standard errors of measurement (SEM) were calculated for the mean scores of core components and key processes and found to be very low. Also, the ranges of the mean scores were relatively small, providing further evidence for strong internal reliability and the accuracy of the assessment results. The SEM is the standard deviation of a hypothetically infinite number of obtained scores around the person's true score. SEM allows us to estimate the degree to which a test provides inaccurate readings. The smaller the SEM, the more certain we can be about the accuracy with which an attribute is measured [6].

The internal consistency of the assessment instrument between subscales correlations was obtained to establish

whether the mean scores of the subscales are consistent. This was to examine how each participant, i.e. teachers, supervisors and head teacher's co vary in rating themselves with regards to core components and key processes. The results show higher correlations for most of the core components and key processes by all participants. The only assessment scores, which were not significant, were core component for the supervisor concerning rigorous curriculum with connections to external communities (.406) and with systemic performance accountability (.236), which was very low.

Tables 8 below, shows the summary inter-rater school-level mean score correlations among the rating participants, i.e. teachers, head teachers, and supervisors. The unit of analysis is the school-level mean score on the head teacher. The four sets of data include the summary table and a full scale mean score table. Inter-rater reliability measures show how consistently various groups rate the same person using the assessment instrument. School-level correlations among three sets of VAL-ED scale rating results – average teacher rating for the head teacher, the head teacher self-rating, and the rating of the supervisor on the head teacher were obtained from the primary sample used for the factor analysis. Correlations ranging between 0-0.29 were considered low, 0.30-0.59 were considered moderate, and 0.60 and above were considered high.

The correlation of core components and key processes were negative between teacher and head teacher, and negative between head teacher and supervisor except for planning (.201) which was low. Correlations for core component high standard for student learning (high), rigorous curriculum (moderate), and culture of learning and professional behaviour (moderate) were significant while the rest were moderate and not significant for the teacher – supervisor.

**Table 8:** Summary VAL-ED Inter-Rater School-Level Mean Score Correlations

	Teacher – Head teacher	Teacher – Supervisor	Head Teacher – Supervisor
<b>Core Components</b>			
High Standards for Student Learning	-0.196	0.667**	-0.031
Rigorous Curriculum	-0.007	0.575*	-0.267
Quality Instruction	-0.108	0.425	-0.103
Culture of Learning and Professional Behaviour	-0.318	0.587**	-0.103
Connections to External Communities	-0.406	0.365	-0.097
Systemic Performance Accountability	-0.163	0.415	-0.012
<b>Key Processes</b>			
Planning	-0.182	0.495	0.201
Implementing	-0.254	0.519*	-0.117
Supporting	-0.199	0.527*	-0.384
Advocating	-0.216	0.610*	-0.127
Communicating	-0.159	0.662**	-0.326
Monitoring	-0.077	0.555*	-0.360
Full Scale	-0.028	0.548*	-0.187

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).

Correlations for the key processes were all significant except for planning (moderate) which was not significant for the teacher – supervisor. The full-scale (Table 9) shows a negative correlation for teacher – head teacher and head teacher – supervisor. The teacher – supervisor, is moderate (.548) and significant.

**Table 9:** Full Scale VAL-ED Inter-Rater School-Level Mean Score Correlations

		Supervisor	Head Teacher	Teacher
Supervisor	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	16		
Head Teacher	Pearson Correlation	-0.187	1	
	Sig. (2-tailed)	0.581		
	N	11	11	
Teacher	Pearson Correlation	.548*	-0.028	1
	Sig. (2-tailed)	0.028	0.935	
	N	16	11	16

\*Correlation is significant at the 0.05 level (2-tailed).

The finding of negative and low inter-rater correlations is not an isolated phenomenon as other studies have reported a similar picture (Cravens, 2014; Porter et al., 2010a,b). The results cannot be attributed to simply measurement error but potentially more substantive explanations such as: (a) systematic differences in what is observed, (b) systematic differences in access to information other than observations of performance, and (c) systematic differences in expertise in interpreting what is observed, and systematic differences in evaluating what is observed [24], [4]. In this study the negative correlations may coincide with some concerns raised by specialist panel: (a) impartiality of teachers assessing head teachers for fear of victimization, (b) some of the terminologies may not be understood, (c) the use of the response ‘don’t know’ by teachers who do not want to assess their head teachers, and (d) participants not being eager to complete the assessment due to its length.

The study found a pattern among participants regarding the core components and key processes mean scores. The head teachers mean scores were highest, followed by the teacher, while the supervisors were the lowest at school-level comparisons. The head teachers also rated themselves differently from each other. Supervisor low rating was expected as they monitor head teacher’s activities on a regular basis; hence their perception assessment may be more informed by actual performance.

The one-way analysis of variance (ANOVA) to compare the mean scores of various subgroups against the five identified factors was conducted. The subgroups of gender, grades taught, academic qualifications, and between schools variations of the scores showed that the assessment instrument was able to discern possible differences concerning leadership effectiveness among the head teachers. This is an important finding of the assessment instrument.

The within the school variations among the three groups assessing the same head teacher and the various patterns exhibited in different schools points to possible association between school characteristics and leadership assessment

results. For example, male mean scores were always lower in the five factors as well as those with higher academic qualifications. On the other hand, the subgroup of grades taught mean scores varied in all the five factors. The study results demonstrated that the inter-rater correlations of the assessment scores have to be scrutinised with awareness and consideration of many other factors. Therefore low inter-rater correlation of the full-scale ratings among participants does not necessarily diminish the reliability of the instrument until an examination of how the rating consistency varies in different settings has been determined.

Criterion Validity Analysis. Criterion validity is a measure of how well a new assessment could predict an outcome measured by an existing assessment. In this study, the validity of the VAL-ED items was gauged by comparing their results to the Zambian criteria, assessed simultaneously. Head teachers, teachers, and supervisors rated the head teacher on a set of Zambian school leadership performance standards. The mean score of both sets of criteria was analysed to determine their convergence or divergence.

The dispersion of mean scores for both the VAL-ED and the Zambian criteria were examined. Overall, both mean scores distribution was highly skewed to the right with most of the scores above average (3.0) and very few below.

The ANOVA was used to compare the mean scores of the six items Zambian criteria with the mean scores of the five identified factors. The results show that all the six item Zambian criteria and the VAL-ED items means were significantly different at 5% level. All P-values were less than 0.05. The statistics for each analysis were based on cases with no missing data for any variable in the analysis. The Post Hoc (logical error) test for homogeneous subsets using harmonic mean of the group sizes (Duncan) was conducted. The results show that head teachers who received high scores based on the VAL-ED scale tended to receive comparable high scores based on the Zambian criteria and vice versa.

The convergence of the VAL-ED and the Zambian mean scores provide evidence for the criterion validity of the VAL-ED as an instrument that assessed head teachers effectiveness in Lusaka district government primary school setting.

Comparison with ECZ Results. The analysis that has preceded this section has to a large extent demonstrated the reliability and validity of the VAL-ED scores. Even though some modifications will be required for the VAL-ED framework to align with Zambian standards, it is important to test the effectiveness rating of head teachers against the ECZ grades 7 and 9 results of each school. This is intended to provide another layer of analysis to establish to what extent the VAL-ED scores can predict the performance of schools and student achievement.

The comparison involved the mean scores, percentages, and rank of each school against VAL-ED, Zambian criteria, and ECZ grades 7 and 9 scores. The top six and bottom six schools in each category were compared to each other to establish any pattern that would validate the VAL-ED



effectiveness rating with confirmed results of respective schools with regards ECZ.

The results show that of the top six ranked schools, five schools (14, 17, 13, 5, 11) for both VAL-ED and Zambian criteria matched though not in the same order. Also, three (18, 14, 13) schools of the top six for VAL-ED matched with ECZ grades 7 and 9. The Zambian criteria had two schools (13, 14) match with grade 7 and three (17, 13, 14) with grade 9 ranking. Between grades 7 and 9, only two schools (13, 14) matched in the top six. Overall comparison shows that two schools (13, 14) were in the top six across board though not in the same order. Even though no distinct pattern has emerged, the comparison indicates a healthy relationship between VAL-ED and Zambian criteria (which has already been confirmed in the correlation analysis), and a weak relationship with the ECZ grades 7 and 9 results. This in a way confirms the difference between perception (VAL-ED and Zambian criteria assessment results) and actual student achievement in grades 7 and 9 results.

Of the bottom six ranked schools, VAL-ED and Zambian criteria both have five schools (2, 3, 8, 10, 7) that match though not in the same order. Also, three schools (6, 3, 10) and two (8, 7) match with ECZ grades 9 and 7 respectively. The Zambian criteria had two schools (8, 7) and (3, 10) match with grades 7 and 9 respectively. Overall no schools at the bottom six matched across board. This comparison confirms earlier findings of factor analysis, which indicated that a lot of adjustment is required to align the framework and VAL-ED to the Zambian standards. As it stands now, we cannot use VAL-ED effectiveness rating to predict school performance and student achievement in the Zambian setting. More studies are required to examine this framework before predictions could be made.

## 5. Discussion and Conclusion

This study set out to investigate two aspects. First, was to determine the alignment and applicability of the learning-centred leadership framework and its assessment model with Zambian school leadership. Second, was to deduce any evidence that demonstrates the presence and effectiveness of school leadership behaviours and processes known to influence school performance and student achievement in Lusaka district of Zambia. Specifically, the study had to answer two questions. In the Zambian school leadership context: (a) how well do the framework and assessment model align, and (b) what evidence demonstrates effectiveness and presence of behaviours and processes?

A series of analytic strategies were designed to answer the research questions. The alignment of the framework and its assessment model was answered mainly by (a) detailed survey results and narrative feedback from specialist panel on the importance and relevance of the framework and assessment items, (b) responses from intended users on their performance of the assessment items. The presence and effectiveness of school leadership behaviours and processes was answered mainly by (a) empirical cluster pattern of the assessment items as compared with the conceptual structure,

(b) consistency of the assessment item scores across subscales, users, and overall, (c) relationship with other measures used concurrently in the intended setting, and (d) relationship of the VAL-ED and Zambian criteria with other school/pupils performance indicators.

### 5.1. Research Question 1 - Study 1: Alignment with Zambian Standards

The alignment analysis on the importance and relevance of the LCL framework and the VAL-ED with the current practice in Zambia indicates that leadership behaviours and processes are critical to the success of primary school head teachers' leadership known to influence school performance and student achievement. The panel of specialist agrees that the core components and key processes, in the main, represent school leadership that might influence school effectiveness, despite concerns over some few aspects. For instance, education administrators 'reality gap' was greater than the academics, an indication that they felt head teachers were too far off the mark regarding what they should be doing.

The perception by the panel of specialist was that some leadership behaviours were being practised at levels comparable to their importance. Zambian head teacher's leadership behaviours on culture of learning and professional behaviour, quality instruction, and communication were comparable between reality and importance. On the other hand, rigorous curriculum, planning, and monitoring were in reality below their importance. This is a significant finding, which will require future studies to focus in these areas to gain a deeper understanding as to what the cause could be. The core component of rigorous curriculum is a field in which researchers will need to explore even further as to what role head teachers actual play given the current centralised curriculum development system in Zambia.

The panel of specialist also examined the alignment at VAL-ED item level and revealed reality gaps. Of importance was the items concerning pupils with special needs, which had the largest gap between reality and importance. This finding was an indication that head teacher's leadership would find it challenging given the mixed nature of policy implementation at different schools. Currently, some schools mainstream special needs pupils while other schools have specific classes.

### 5.2. Research Question 1 - Study 2: Validation of the Instrument

The panel of specialist made some comments and suggestions on how the instrument could be improved upon before being used in the Zambian setting. The main changes had to do with terminologies, which had to be altered to ones commonly used in Zambia. Changes were made as the result of the feedback without compromising the integrity of the instrument. Evidence from the pilot test conducted showed that the return rate of instrument issued was close to 50%. Also, there were negligible items with missing data and 'don't know' responses, giving an impression that respondents managed to deal with the assessment without

much difficulty. The assessment instrument was therefore considered valid to use in the field.

### 5.3. Question 2 Study 3: Presence and Effectiveness of VAL-ED

Missing Data and Sources of Evidence. The finding that missing data occurred in relatively small, negligible and evenly spread across all items of core components and key processes increased construct validity of the assessment instrument. Equally the response of 'don't know' for the effectiveness rating was negligible was an important criterion for data quality for the VAL-ED scores. The reliability and accuracy of the results were also increased by the response to the effectiveness ratings being supported by at least one source of evidence.

Empirical Clustering. The EFA results showed a factor structure that reflected the LCL theoretical framework of core components and key processes. The factor structure was not a perfect match; hence it lacked the discerning power to take into account the six-components framework. The clustering of four of the six components around the principal factors was impressive. However, the one factor accounting for two components indicates discrepancy between the theoretical framework of the VAL-ED and the Zambian standards do exist. Importantly, without being confined to a priori factor structure, the empirical results found preliminary evidence of four VAL-ED core components to stand as unique factors that are distinct from one another. This represents valid constructs both individually and combined for LCL.

Reliability and Internal Consistency. The study exhibited excellent internal consistency of the assessment instrument between subscales as well as reliability and accuracy of the results. Most core components and key processes showed higher correlations between subscales. Core components for the supervisor in regards to rigorous curriculum with connections to external communities and with systemic performance accountability were not significant.

The findings of negative and low inter-rater correlations for core components and key processes between teacher-head teacher, head teacher-supervisor are not an isolated phenomena as other studies have reported similar results [4], [27], [28]. This could partially be explained by the concerns raised by the panel of specialist on the teacher's impartiality, terminologies used, and instrument length.

A pattern that emerged where head teachers rated themselves high, followed by teaching staff, while the supervisors rated the head teachers lowest was significant. Supervisor's low rating was expected as they spend most of their day-to-day activities monitoring head teachers performance. They were perhaps more close to reality than perception in the assessment of the leadership behaviours and processes.

Another significant finding was that subgroups such as gender, grades taught, academic qualifications, and between schools variations were able to discern possible differences regarding leadership effectiveness among head teachers. Also, the three groups assessing the head teacher produced

different patterns pointing to possible association between school characteristics and leadership effectiveness. All these findings demonstrate the need to carefully examine the inter-rater correlations of the assessments scores before the reliability could either be accepted or discarded.

VAL-ED Relationship with Zambian Criteria. The significant finding was the convergence of the VAL-ED and the Zambian criteria mean scores, which provided evidence for criterion validity of the VAL-ED as an instrument that assessed head teacher's leadership effectiveness in Lusaka district government primary school setting. The results showed that head teachers who received high scores based on the VAL-ED scale tended to receive comparable high scores based on the Zambian criteria or vice versa.

Comparison with ECZ Results. You will recall that the VAL-ED framework and the Zambian standards did not align completely. However, since four of six components clustered around the principal factors, it was felt prudent to subject the VAL-ED scores to a comparison against student achievement. The study wanted to establish whether, with limited alignment of the framework, the assessment scores could predict school performance and student achievement. This is against the background that Research informs us that a review of school leadership found that the quality of the principal leadership alone accounts for 25% of a school's impact on student learning [18].

The overall comparison with ECZ grades 7 and 9 results did not yield any distinct pattern. The relationship between VAL-ED and the Zambian criteria with the ECZ results was weak. Therefore, as it stands, it will not be prudent to use VAL-ED effectiveness rating to predict or project school performance and student achievement in the Zambian setting. The earlier finding that the LCL framework will require adjustment to align with Zambian standards before use stands firm.

### 5.4. Limitations

The limitations of this study can be attributed to three factors: (a) the exploratory nature of the work, (b) time and resource constraints, (c) some insights being gained after the fact.

#### 5.4.1 Panel of Specialist

Time and resources permitting it would have been better to increase the number and spread of specialist to at least 10, not only to one university and Ministry of Education Headquarters. The increase would have taken care of the geographical spread and skills and special interest groups to be part of the panel. This would include such institution as the Teaching Council of Zambia, Teaching Service Commission, and Examination Council of Zambia. Admittedly, in the original scheme of works such considerations were included, but dropped when the cost was more than the budget.

A retreat to a quiet place would have been idle for the panel to have their undivided attention than what transpired where the researcher was at their mercy. The panel, first before the pilot test, would verify any modifications that would have arisen from their feedback. Such a process would have

allowed panellist and the researcher seek clarification to concerns on the spot. For example, the proposal to include 'sustainability' as one of the key processes would have attracted further explanation to determine its relevance.

The other challenge was the consideration of the use of incentives to would be participants to increase the rate of return. Currently, in Zambia, some organisations offer incentives to solicit information from the general public. A balance would need to be struck as to how far a study of this nature can use incentives without compromising the quality of data.

#### **5.4.2 Field Survey**

Even though the pilot test responses at face value looked good, there was no way of knowing as to whether: (a) the respondents understood the core components and key processes, and (b) understood the instructions of the assessment tool. A narrative feedback would have helped to address some of these concerns, which could have affected the primary survey data.

Judging from the low rate of return, schools, especially in Lusaka, may be suffering from survey 'burnouts' as most research conducted in many colleges and universities in Lusaka target the same population. Related to this is the generalisation of results of the 18 schools would be limited. Lusaka, which is the capital city of Zambia, has better developmental indicators and easy access to educational facilities is relatively well situated than most of the other districts.

#### **5.4.3 Assessment Tool**

The study was faced with difficulties with regards to the assessment tool. The tool required of teachers to assess their head teachers honestly without bias. In the Zambian cultural setting, leadership is held in high esteem and without blemish, therefore assessing a leader or supervisor (and especially communicating it to a third party), some individuals would find it very difficult. On the other hand, teachers were suspicious that the head teachers would access their comments. This is because the process of distribution any assessment tool in a school has to go through the head teacher's office.

The assessment tool faced challenges from both the cultural beliefs and technical angle. Respondents needed to understand the items despite some terminologies and questioning style being different. This is because the researcher had to maintain strict construct equivalent for the VAL-ED to be subjected to a comparative analysis. For example, the core component of rigorous curriculum would have been dropped or altered, as it did not apply entirely to the local context. Also, the key process of monitoring with regards to systemic performance accountability would have been altered. The Zambian standards refer to evaluation and assessment and the head teachers are charged with the responsibility of 'ensuring evaluation and assessment are used systematically, while learning and pupil progress is monitored in relation to established goals'.

The respondents would have found a lot of repetition with regards to monitoring and systemic performance accountability, thereby threatening the integrity of data collection. This echoes one of the concerns raised by the panel of specialist that the instrument was repetitive in some instances. These issues and concerns point to the complex nature of trying to import a theoretical framework from another culture. It calls for a lot of work before it can align and used in a different setting. In the case of VAL-ED, the possibility is there. However, it would have to undergo significant adjustments.

### **5.5 Implications**

#### **5.5.1 Theory**

Assessing effective school leadership is in a way trying to answer questions as to why Zambian schools are failing to prepare pupils with life skills, creativity, critical thinking beyond the test-based education system that only prepares pupils to be proficient in exams. Assessing effective school leadership is, in fact, questioning the conceptual, theoretical basis of the national education system. Assessing effective school leadership is, in fact, making a statement as to why we as a nation are not globally competitive. What is it that we can learn from other countries that would help improve our education system at theoretical, practical, and policy levels? This study sought to contribute to the debate by exploring what has worked elsewhere and attempt to introduce it to the local setting.

#### **5.5.2 Practice and Policy**

In the face of the current challenges that Zambia is faced with in the education sector, we cannot over emphasise the value of knowing and having models of effective school leadership to both the practice and policy implementation. The many policy reviews and changes [19]-[21] points to a nation that is in search of striking a balance between what is offered in the educational setting and what is required for development. The role of effective school leadership will need to find its place in the context of nation building primarily producing pupils with life skills beyond academic qualifications. However, as long as the emphasis remains on the examinable educational system, much of the school leadership contribution to total nation building will be difficult at best minimal. As much as this study is about school leadership, it is also about igniting interest in education reforms and policy necessary for nation building.

#### **5.5.3 Research**

The findings of the study will provide valuable insight on the topic of across culture learning in school leadership and issues of comparison and applicability of the framework. The results of the leadership assessment have brought to the fore the need to look at context under which the studies are being conducted. For instance, the examination of characteristics should go beyond individual head teachers, school type or size, but into the socio-political sphere that influences leadership. Important issues that are at the heart of nation building will need to be explored: (a) what leadership behaviours are important for achievement of national policy objectives, (b) what leadership assessment instruments are best suited to achieve this, (c) what standards should we hold

school leadership to account for, (d) how and when should the assessment instrument be used, (e) how often should the assessment instrument be reviewed in the face of constant change of policy environment, and (f) what role does the traditional cultural values play in the leadership development and assessment of today.

#### 5.5.4 Knowledge Production

The examination whether and to what extent LCL framework represents more fundamental aspects of the educational experience instead of being idiosyncratic of one cultural setting, the finding suggests that the null hypothesis of construct equivalence is therefore rejected, and culture specific differences do exist. On the other hand, despite these differences of socio-cultural reasons, the findings also confirm that there are significant elements of leadership domain that are shared across culture, facilitating an important function of knowledge transfer. It is, therefore, possible, subject to the identification and validation, any difference of a new construct can be localised into existing application of theories.

Knowledge production in this instance requires us to examine other factors (cultural, political, socio-economy) that form the context of education in which schools and their actors operate before any conclusions or inferences are made to be valid. This study, which focused on assessing the school leadership effectiveness and alignment of the LCL framework, provides a baseline data for the Zambian across culture comparison and application of knowledge in school leadership.

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