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Promoting leadership for learning in Nigeria: The interplay of leadership mastery experience and leader self-efficacy

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Abstract

Leadership for learning has emerged as a holistic leadership behaviour that combines aspects of instructional leadership, transformational leadership and shared leadership. Little is known about how this type of leadership develops and what antecedents are important. Following the rationales of Social Cognitive (Career) Theory and applying Chan and Drasgow's leader development model, we examine how leadership mastery experience and leader self-efficacy affect leadership for learning in Nigerian schools. We divide leaders' self-efficacy into the belief that they have the necessary skills and abilities to be successful as leaders (leader self-regulatory self-efficacy) and the belief that the actions they take as leaders will have the desired effect (leader action self-efficacy). Using structural equation modelling, our results show that both leadership mastery experience and leader self-efficacy are relevant antecedents of leadership for learning, with self-efficacy mediating the effects of experience on leadership. Our results suggest efficiency–performance spirals and illustrate how important it is for the enactment of leadership for learning to believe in one's ability to competently perform various critical leadership actions.

Keywords

Leader development, leader self-efficacy, leadership for learning, mastery experience, school leader, Nigeria

To achieve school effectiveness and improvement as well as educational transformation and change, school leadership is imperative (Gümüş and Bellibaş, 2020; Hallinger and Kovačević, 2021; Leithwood et al., 2020). In this regard, leadership for learning (*LfL*), a blend of different leadership practices that complement and reinforce each other, is seen as particularly relevant to both effective schools and educational innovation and change (Boyce and Bowers, 2018; Daniëls

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et al., 2019; Hallinger, 2011). Since the decisive role of leadership in school reform has been widely documented in the literature, interest among policymakers and scholars worldwide in developing successful leaders and their leadership behaviour has increased (Daniëls et al., 2019).

LfL, essentially derived from the concept of instructional leadership (IL) (MacBeath and Townsend, 2011), is understood as a combination of leadership practices that together aim to create optimal conditions for learning at all levels of a given school (Day, 2011): organisational learning, teacher professional learning and student learning. The focus is therefore on the school-wide alignment of leadership with learning and the empowerment and involvement of a school's staff in creating optimal conditions for such learning. Consequently, the concept of LfL goes beyond the idea of IL to encompass a broader range of leadership activities that support learning and learning outcomes (Bush and Glover, 2014) and is based on an integrated and shared leadership (SL) perspective (Ahn et al., 2021).

As noted by Bush and Glover (2016), little is known about LfL in West African states and regions, despite international recognition of the importance of these aspects of schooling. This also applies to IL, which is rarely exercised by school leaders in countries from the Global South (Bush, 2008; Bush and Glover, 2016; Oplatka, 2004). Correspondingly, it is largely unclear and unknown to what extent the underlying rationales can be adapted to conditions in countries from the African continent (Lumby and Moorosi, 2022). However, despite an increasing discussion about the colonial legacy of political interventions for leadership development in schools (Eacott and Asuga, 2014) and an extensive critique of (selective) policy borrowing (Harber, 2017; Silova et al., 2020), there are currently programmes in West Africa that train aspiring school leaders based on such an understanding of leadership (Swaffield, 2017).

This is interesting because few models have yet systematically addressed or described the development of effective leadership and more fundamentally, a coherent theory of leadership development is still lacking (Day et al., 2021). Further, existing studies in the field are biased towards cognitive theories and lack emotion- and affect-related theories and processes (Vogel et al., 2021). In addition, when it comes to educational research, reliable empirical evidence on school leader development is scarce (Grissom et al., 2019). And finally, especially studies in educational research often focus on formal training, mainly aimed at training aspiring or new school leaders (Versland, 2016), and focus on specific leadership techniques (Gümüş et al., 2021), while neglecting the specific context (Brauckmann et al., 2023). Consequently, Daniëls et al. (2019: 119) state 'Research on how effective leadership development takes place is still in its infancy'.

Notwithstanding, two relevant leadership development models have recently been created that seem appropriate. Both Judge et al.'s (2009) leader trait emergence effectiveness model (LTEE) and Chan and Drasgow's (2001) leader development model (LDM) make a strong case that effective leadership is based on individual characteristics and develops as different attributes are identified and addressed. In particular, the LDM makes clear that leader development is based on a set of demanding antecedents (Badura et al., 2020; Chan and Drasgow, 2001). According to this model, effective leadership, that is, outcomes, depends on leadership behaviour, which in turn is influenced by the motivation to lead based on self-efficacy, which then depends on various (more or less stable) individual antecedents and leadership experiences (see Figure 1).

We are not aware of any studies that use this approach in relation to the development of school leaders and their leadership behaviours. Further, in principle, there is a lack of studies that examine the influence of individual antecedents in the development of effective school leadership (Daniëls et al., 2019). Futhermore, few empirical studies have addressed effective school leadership in African countries and regions (Asuga et al., 2016; Bush et al., 2022; Bush and Glover, 2016;

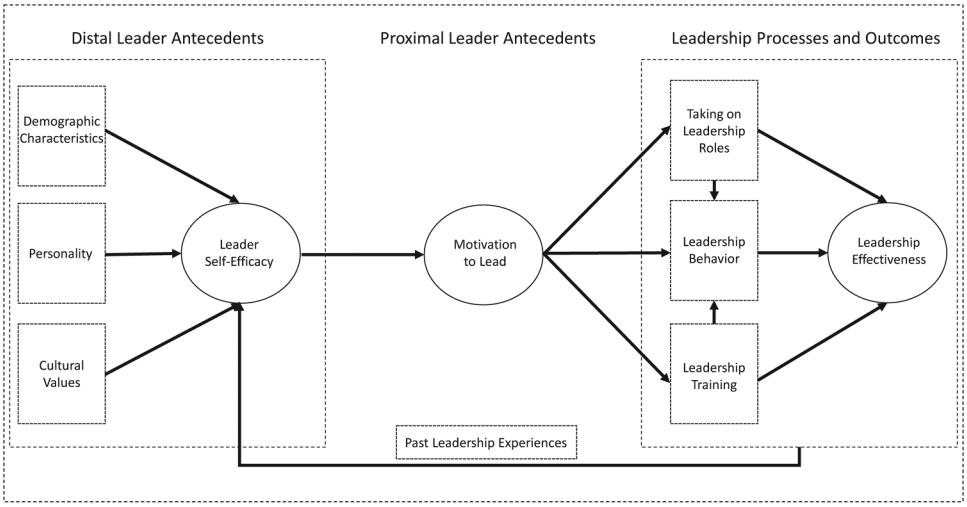

Figure 1. A distal-proximal model of leader development and leadership.

Hallinger, 2018, 2019, 2020; Ngcobo and Tikly, 2010; Olujuwon and Perumal, 2015, 2018). And even fewer studies address leadership development in African countries and regions (Bush et al., 2022; Eacott and Asuga, 2014; Imoni, 2020; Ngara, 2022; Otunga et al., 2009). Drawing on data from a school leader survey, our study, therefore, addresses these desiderata and examines the interplay between leader self-efficacy and leadership mastery experiences (MEs) and their effects on school leaders' *LfL* in Nigeria, currently the sixth most populous country in the world. Thus, this research aimed to develop a causal model for the explanation of the effects of self-efficacy and leadership MEs on school leaders' *LfL* in Nigeria.

Literature review

Leadership for learning

Instructional, transformational and SL are considered essential in educational research (Bush and Glover, 2014; Leithwood et al., 2020; Scheerens, 2012). For a long time, these leadership styles were seen as separate, distinct leadership approaches that require an either–or decision (Bellibaş et al., 2021). In recent years, however, it has become clear that reform and sustainable change in schools, in particular, require a combination of all these facets of leadership (Daniëls et al., 2019). The term *LfL* has become established for this, that is a blend of 'instructional leadership, transformational leadership and shared leadership' (Hallinger, 2011: 126) behaviours.

IL is one of the most popular leadership approaches in educational research and is considered to be particularly relevant when it comes to school effectiveness (Gümüş et al., 2018). This approach focuses heavily on those in formal leadership positions and primarily takes a top-down perspective (Bellibaş et al., 2021; Hallinger et al., 2020). Fundamentally, the goal of such leadership is to guide and shape instruction and the conditions under which it occurs so that it is as effective as possible for the learning of all students (Boyce and Bowers, 2018).

In educational research, transformational leadership (TL) has been suggested as the most relevant leadership style for school leaders considering substantial reform and change (Leithwood and Jantzi, 2006). This approach is concerned with providing followers with an inspiring mission and vision and giving meaning to their work (Bass, 1999), and it primarily takes a bottom-up perspective (Daniëls et al., 2019).

Shared and distributed leadership, as pluralistic leadership approaches (Denis et al., 2012), finally, comprise a range of strategies for involving teachers in school-wide leadership processes and decision-making and thus, act as '"social glue" that supports effective interdependent working' (Harris, 2013: 3) in schools. In some cases, shared and distributed leadership aspects are understood as part or facets of TL (Scheerens, 2012).

Empirical studies around the world prove that all leadership behaviours, as well as their interactions, are strongly correlated with (the development of) intra-school process variables and student achievement (Karadag, 2020; Leithwood and Sun, 2012; Liebowitz and Porter, 2019; Tan et al., 2022, 2024; Wu and Shen, 2022). Besides, Iqbal and Ahmad (2021) revealed that sustained school performance is substantially impacted by organisational LfL. In line with that, Prabowo et al. (2024) found that principal's leadership behaviour has a big impact on how well students learn. Similarly, according to Tuan et al. (2024), transformational and SL behaviours and IL behaviours have the greatest effects on leaders' *LfL*. Furthermore, the way that teachers teach is significantly impacted, either directly or indirectly, by school leadership behaviour (Ira and Suhariadi, 2024). Although there is little empirical evidence to date, the discussion assumes that the available models of effective leadership are broadly transferable to African countries and the Global South in general (Bush, 2013; Hallinger et al., 2020; Imoni, 2020) but need to be tailored to the specific contexts (Ngara, 2022; Ngcobo and Tikly, 2010). Thus, this research considered the Nigerian context due to lack of empirical evidence on the nexus between *LfL* and leaders' self-efficacy.

School leadership and leader development in Nigeria

As Olujuwon and Perumal (2018) state, school leadership in Nigeria is exercised primarily by principals and teachers but may be distributed to and shared with other stakeholders as well. With regard to appointments to leadership positions in Nigerian schools, the authors further emphasise that career advancement to leadership positions is formally based on personal merit and that systematic procedures for the promotion of staff exist that focus on qualifications, experience and expertise. However, there are also influences of nepotism, ethnicity and socio-cultural practices that determine how appointments and promotions are made in public schools, which can result in qualified individuals being denied promotions or appointments (Ofoegbu and Osagie, 2013; Olujuwon and Perumal, 2018).

In addition to the experience gained in formally assigned leadership positions, people in Nigerian schools can gain informal leadership experience (Imoni, 2020; Olujuwon and Perumal, 2018). Consequently, over time, it has become clear that, especially, distributed leadership is a paradigm that must be tailored to the specific requirements of a Nigerian school setting that is unique (Bashir and Alam, 2024). However, research revealed that low teacher productivity in Nigerian public schools is caused by the inadequate leadership qualities that secondary school leaders typically possess (Asabia, 2024; Imoni, 2020). There is a need for a complete and integrated leadership model that is appropriate for decentralised schools in Nigeria because decentralised systems and distributed leadership alone are not the only solutions for addressing ineffective schools (Bashir and Alam 2024).

Further, Härmä and Adefisayo (2013) examined the disparities among Nigerian schools, and they concluded that schools operate in a wide range of geographical, socioeconomic, political and technological contexts. In line with that, it was found that school leaders were required to adopt certain leadership strategies due to the contextual realities of underprivileged school environments (Myende et al., 2021). Thus, school leaders demonstrated context-appropriate behaviours like compassionate leadership and highly committed leadership (Myende et al., 2021). This mutual interaction demonstrates how school leaders' professional identities can be shaped or reshaped by their educational environments and vice versa. It has been observed that socioeconomic contexts play a significant role in determining whether schools succeed or fail (Chikoko et al., 2015; Mkhize and Bhengu, 2018).

A number of studies have also indicated that school leaders need to be context-sensitive in order to create thriving institutions (Hallinger, 2018). To be able to perform the above context-related challenges, a leader must be able to evaluate the impact of context on the school and exert leadership that strengthens the school's ability to perform (Chikoko, 2018; Maringe et al., 2015). School leaders in many African countries face a dilemma as a result of deprivation, as many of them struggle to produce the required results due to unfavourable conditions (Chikoko et al., 2015; Mkhize and Bhengu, 2018). In spite of this, a small number of schools have consistently demonstrated excellence despite deprivation (Chikoko et al., 2015). The phenomenon of leadership for success in deprived school contexts, however, remains undertheorised, especially within the developing world (Maringe et al., 2015). According to Asabia (2024), secondary school leaders' generally deficient leadership skills are the root reason for low teacher productivity in Nigerian public schools.

Leader self-efficacy in leader development

Not much is known in educational research about relevant individual antecedents of leadership and leadership development in schools, with gender, administrative experience and general self-efficacy being the most considered variables in this regard (Berkovich and Eyal, 2015; Leithwood and Jantzi, 2005; Moorosi and Bush, 2020; Sun et al., 2017). As in general leadership research (Badura et al., 2020), research on school leadership shows that a school leader's self-efficacy is an important determinant of becoming a principal and effectively leading followers. For example, Gümüş and Bellibaş (2020) were able to demonstrate that school leaders' professional development affected their self-efficacy, which in turn affected their learning-centered leadership behaviours. And both Leithwood and Jantzi (2008) found significant relationships between self-efficacy and transformational and Hallinger et al. (2018) between self-efficacy and IL.

Self-efficacy, which comes from social cognitive theory, is the conviction that one can accomplish goals or carry out duties (Bandura, 1997). Self-efficacy influences the decisions, challenges, efforts and outcomes, especially, when faced with adversity. Individuals who possess a high level of self-efficacy typically take actions that they think they can accomplish and feel confident in their abilities in a variety of circumstances and activities (Bandura, 1997). Conversely, those with low self-efficacy frequently limit themselves to particular activities and circumstances and opt for low-difficulty jobs and tasks because they lack confidence in their talents (Bandura, 1997). According to Bandura (1977), self-efficacy is domain-sepcific, and ME, vicarious experience, verbal persuasion (that is feedback experience), as well as physiological and emotional states (that is physical experience) are factors that are essential in the development of self-efficacy.

In this regard, leader self-efficacy refers to a person's belief in their capacity to guide others (Dwyer, 2019). According to Hannah et al. (2008), such leader self-efficacy should include not

only leaders' perceived ability to perform leadership actions but also their conviction to effectively interpret the context and develop new leadership solutions while providing the necessary motivation to act. This is referred to as (a) leader self-regulatory self-efficacy and (b) leader action self-efficacy by Hannah et al. (2012). The authors (Hannah et al., 2008, 2012) state that while self-regulatory leader self-efficacy involves psychological processes within the leader to regulate his or her thinking and self-motivation, the action component represents the leader's belief that he or she has the ability to exercise leadership and create effects and thus motivate others. In this sense, leaders' self-efficacy consists of two distinct beliefs: first, the belief that they have the necessary skills and abilities to be successful as leaders and, second, the belief that the actions they take as leaders will have the desired effect (Dwyer, 2019).

From the perspective of social cognitive career theory, self-efficacy beliefs derived from career experiences strongly predict career choices and ultimately observable outcomes (Lent et al., 1994), as past experiences influence the perceptions that stimulate current individual behaviour (Ajzen, 1985). Consequently, in research on the role of self-efficacy in leadership development, previous experiences at work or during a career are considered highly relevant to the development of high leader self-efficacy and, consequently, effective leadership and leadership outcomes (Badura et al., 2020; Kwok et al., 2021). Further, with regard to leader development, empirical research suggests that leaders' identity or personality traits are far less malleable during training than their self-efficacy (Kwok et al., 2021). This means that development programmes that focus on increasing self-efficacy through positive MEs can help leaders learn more effective leadership behaviours and work more effectively as a result (Kwok et al., 2021).

Consequently, both the LTEE by Judge et al. (2009) and the LDM by Chan and Drasgow (2001) suggest that leadership development and the effects of leadership behaviour are based on the leader's self-efficacy, with the LDM including a recursive developmental or change component: the more positive (qualitative and quantitative) leadership experiences one has, the higher the self-efficacy beliefs of being able to lead others effectively. This is consistent with the concept of efficacy–performance spirals (Lindsley et al., 1995), which refers to the idea of a positive and cyclical relationship between performance and self-efficacy based on MEs (Salanova et al., 2011), with experiences of past successes and failures serving as sources of information about abilities (Bandura, 1977). As noted by Salanova et al. (2011) such spirals should meet two conditions: (1) the presence of normal and reversed causation, that is, a reciprocal relationship, and (2) an increase in levels of self-efficacy and performance over time. Thus, a self-reinforcing cycle of past leader experience and leader self-efficacy is assumed and seen as particularly important for the development of leaders (Machida and Schaubroeck, 2011).

According to Kelleher (2016), school leaders' self-efficacy is correlated with a number of factors, including leadership effectiveness, teaching and learning quality and school effectiveness. With regard to the development of school leaders, studies have shown that leadership trainees' self-efficacy can be enhanced by preparatory programmes that provide them with opportunities to master leading others in school development processes (Fisher, 2014; Versland, 2016). Internships are necessary for these experiences, in addition to demanding curriculum and demanding support systems. School may benefit from genuine work-specific experiences that boost their leadership self-efficacy and enable them to take on related duties in the future by practising case studies and completing reflection exercises in a secure setting (Versland, 2016). Competent leaders serving as trainers and other programme participants may share experiences of successful leadership for vicarious learning (Gümüş and Bellibaş, 2020). Bellemans and Devos (2023) revealed that MEs – which are primarily modest triumphs and do

not pertain to remarkable accomplishments or exceptional outcomes – prove to be the most potent source of principal self-efficacy.

Due to the lack of research on school leadership in Nigeria, it is largely unclear to what extent these assumptions apply there. However, the few studies that do exist suggest that these models and assumptions may be applicable. For example, Adewale and Ghavifekr (2019) show that higher education leaders' leadership self-efficacy is positively associated with their behaviour, specifically their organisational citizenship behaviour. And Igu et al. (2023) show for school leaders in Nigeria that coaching experiences can positively influence their leader self-efficacy. Accordingly, the available evidence suggests that leader self-efficacy of educational leaders in Nigeria influence their behaviour and can be changed by experience. The extent to which a relationship between leadership experience, leader self-efficacy and school leadership behaviour can be demonstrated, however, remains unclear.

Hypotheses and conceptual model

Our conceptual model, shown in Figure 2, is based on these theories and the empirical findings described above, and we make the following hypotheses:

H1: School leaders' ME relates to their LfL behavior.

H2a: School leaders' ME relates to their action self-efficacy.

H2b: School leaders' ME relates to their self-regulatory self-efficacy.

H3a: School leaders' leader action self-efficacy relates to their LfL behavior.

H3b: School leaders' leader self-regulatory self-efficacy relates to their LfL behavior.

H4a: School leaders' ME relates to their LfL behavior mediated by their action self-efficacy.

H4b: School leaders' ME relates to their LfL behavior mediated by their self-regulatory self-efficacy.

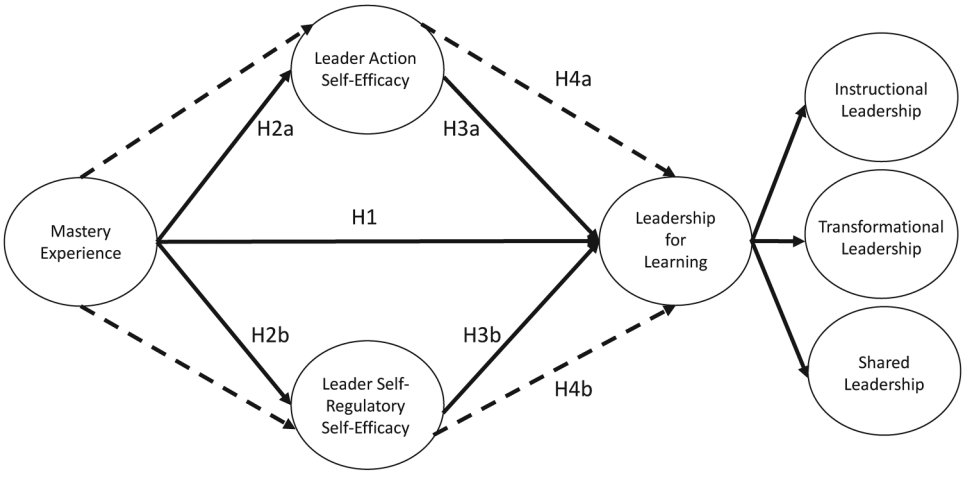

Figure 2. Conceptual model for hypotheses testing.

Methods

Research paradigm

This research adopted positivism research paradigm. The positivist research paradigm is predicated on the notion that reason and observation are the best ways to comprehend human behaviour. This paradigm enabled us to test the available hypotheses for this research. It should be noted that we use data from only one source, so called same-source data, that is, information provided by school leaders.

Study participants

In the spring 2023, $N = 156$ Nigerian school leaders participated in this cross-sectional study. The participants were selected from schools in Enugu, Anambra, Ebonyi, Kogi, Benue, Delta, Akwa-Ibom, Ogun states and Federal Capital Territory, Nigeria, using a purposive sampling technique. The justification for the choice of purposive sampling was to allow the researchers to sample only principals of schools without serious security problems, as Nigeria is currently facing a number of security threats that could jeopardise the country's status as an independent republic. These include kidnapping, human trafficking, armed robberies, urban violence, weapon smuggling and conflicts between communities and religions. Moreover, it has been noted that the ongoing attacks by terrorists, herders and ethnic-religious conflicts are taking the government, security and intelligence services by surprise (Awotayo et al., 2023). To ensure adequate representation of the subsets of the sample, a sample effect size of 0.86 was obtained using G-Power version 3.1, which showed that the sample size for this study was very adequate. G-Power is a statistical software that can be used to determine sampling adequacy for research work (Faul et al., 2007).

Demographics of the participants

In our sample, 50.4% of the participants are female principals, while 49.6% are male principals. Sixteen point seven percent of the participants are from a village, hamlet or rural area (fewer than 3000 people), 34.6% of the participants are from a small town (3000 to approximately 15,000 people), 37.2% of the participants are from a town (15,000 to approximately 100,000 people) and 9.6% of the participants are from a city (100,000 to approximately 1,000,000 people). The remaining 9.6% of participants are from cities with populations between 100,000 and 1,000,000, while 1.9% of participants are from large cities with populations exceeding 1,000,000. The distribution was informed by the proportion of school principals in the study area. Regarding the states, 9.6% of the participants were sampled from schools in Benue state, 10.3% of the participants were sampled from schools in Ebonyi state, 9.0% of the participants were sampled from schools in Kogi state, 12.2% of the participants were sampled from schools in Akwa-Ibom state and 20.5% of the participants were sampled from schools in Cross River state. The participants were sampled from schools in Enugu state, 13.5% of whom were sampled from schools in Anambra state, 13.5% of whom were sampled from schools in FCT Abuja state, 5.7% of whom were sampled from schools in Delta state and 5.7% of whom were sampled from schools in Ogun state.

Measures

LfL, our dependent variable, was assessed following Hallinger (2011) and thus intends to capture 'a blend of instructional leadership, transformational leadership, and shared leadership' (Hallinger, 2011: 126). All leadership items were measured on a 4-point scale ranging from 'very rarely or never' to 'very often'.

1. *Instructional leadership* ($\omega = 0.776$) was measured with three items from the Programme for International Student Assessment (OECD, 2014). An example item is: 'I ensure that teachers work according to the school's educational goals'.
2. *Transformational leadership* (TL, $\omega = 0.849$) was measured with four items from the Multifactor Leadership Questionnaire (Bass, 1999), indicating idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. An example item is: 'I seek different perspectives when solving problems'.
3. *Shared leadership* (SL, $\omega = .824$) was captured with three items from the Teaching and Learning International Survey (OECD, 2019). Following the OECD, we understand SL as the participation of teachers in leadership practices and decisions (i.e. see Zhan & Cao, 2023). An example item is: 'I provide staff with opportunities to participate in school decision-making'.

Leader self-efficacy was conceptualised according to Hannah et al. (2008, 2012), thus comprising two separate dimensions of leader self-efficacy, with a focus on leading schools in dynamic and rapidly changing environments:

1. *Leader action self-efficacy* (SEa, $\omega = 0.863$): To measure school leaders' believes that they possess the ability to exercise leadership, motivate others and, consequently, create effects we adapted four items developed by Schmitz and Schwarzer (2002) that focus on self-efficacy with regard to innovation and change. This scale has been proven to be related to real-world changes in schools (Röhl et al., 2022). An example item is: 'I know that I can motivate teachers at my school to participate in innovative projects'. All items were measured on a 4-point Likert scale ranging from 1 (do not agree at all) to 4 (totally agree).
2. *Leader self-regulatory self-efficacy* (SEs, $\omega = 0.880$): To measure school leaders' self-perceived ability to engage in relevant leadership behaviours that regulate their thinking and self-motivation, we used a short version of Hadley et al.'s (2011) C-Lead scale. We used this scale because it has been shown to correlate significantly with general leader self-efficacy, while also assessing whether a leader believes he or she is capable of making decisions under extreme time pressure and uncertainty (i.e. without having all the necessary information) – two things are being immanent in the process of change (Yurkofsky and Peurach, 2023). An example item is: 'I can make decisions and recommendations even when I don't have as much information as I would like'. All items were measured on a 4-point Likert scale ranging from 1 (do not agree at all) to 4 (totally agree).

Mastery experience (ME, $\omega = 0.883$) was assessed with four items structured on a 4-point scale ranging from 1 (very lowly competent) to 4 (very highly competent). The items were developed by the researchers following Leithwood and Riehl's (2005) framework of effective school leadership practices and allow school leaders to self-assess the quality of their MEs in the following areas: (a) setting directions, (b) developing people, (c) (re-)designing the organisation and (d) managing

the instructional programme. For item formulation, we followed Bandura (1977: 191), who defines ME as follows: 'If one has performed well at a task previously, he or she is more likely to feel competent and perform well at a similarly associated task'. Accordingly, an example item is: 'Indicate your level of competency in each of the following statements by circling the appropriate number: (Re-) Designing the organization'.

Data collection procedure

Prior to data collection, ethical approval for the conduct of this research as well as permission to access the sampled schools were obtained. Thereafter, the data collection was done through several research visits to the Nigerian school leaders in their respective school locations with the aid of graduate research assistants. In this case we employed the services of the nine graduate students (research assistants) who assisted in the data collection process. Each of the nine research assistants was posted to a particular state. To achieve an effective data collection process, we ensured that each of the research assistants was posted to the state where he/she resides. Moreover, each of the research assistants was issued an introductory letter to school leaders in the state where the data collection took place. The data collection process was properly supervised by the core research team. Before the data collection, the researchers issued informed consent forms to the principals to fill and sign. Such exercise was done before the visits of the graduate research assistants to the various schools to ensure that the participants consented to the completion of the questionnaire items. Paper and pencil surveys were used for data collection, that is, research assistants visited the principals on site, handed out the questionnaires to the principals and then took them back. The data collection lasted for nine weeks.

Data analysis

To test the hypotheses for this research, structural equation modelling (SEM) approach was adopted using analysis of moment structure and statistical package for the social sciences. Prior to estimating the factorial structure of the measurement models, average variance extracted (AVE) and composite reliability (CR) were calculated to estimate the reliability and discriminant and convergent validity of the scales (Hair et al., 2019). To assess the fit of the constructs and the whole model, root mean square error of approximation (RMSEA < 0.08), standardised root mean square residual (SRMR < 0.08) and comparative fit index (CFI > 0.90) were estimated (Hu and Bentler, 1999). Mediation effects are assessed following Hayes (2018) using 95% bias-corrected bootstrap confidence intervals (CIs), with estimates of indirect effects considered statistically significant if the 95% CIs do not contain zero. As the amount of missing data was below two percent, missing data were handled using full information maximum likelihood estimator (Graham and Coffman, 2012).

Results

Descriptives

Table 1 displays the descriptive statistics (mean, standard deviation and correlations among the variables) and fit indices (CFI, RMSEA, SRMR) for the measurement models, AVE and CR to measure the convergent validity of the measures. It was found that the school leaders scored high on ME ($M = 11.48$, SD $= 3.37$; possible scale range: 4–16). Similarly, both the mean score

Table 1. Descriptives and correlations of the measures and model fit indices for each of the latent constructs.

	Mean	SD	ME	SEs	Sea	TL	IL	AVE	CR	RMSEA	SRMR	CFI
ME	11.48	3.37						0.654	0.883	0.041	0.061	0.951
SEs	14.44	3.38	0.380					0.596	0.880	0.037	0.043	0.945
Sea	11.85	3.24	0.569	0.518				0.615	0.863	0.040	0.051	0.908
TL	12.29	2.77	0.210	0.420	0.567			0.585	0.849	0.034	0.055	0.933
IL[a]	9.44	1.89	0.316	0.507	0.632	0.703		0.542	0.776	0.000	0.000	1.000
SL[a]	8.93	2.28	0.399	0.678	0.595	0.505	0.631	0.617	0.824	0.000	0.000	1.000

Note: ME: mastery experience; SEs: leader self-regulatory self-efficacy; Sea: leader action self-efficacy; TL: transformational leadership; IL: instructional leadership; SL: shared leadership; all correlations are $P < 0.05$.
[a]Just identified model (three items, zero df), therefore perfect fit.

of self-regulatory self-efficacy ($M = 14.44$, SD = 3.38; possible scale range: 4–16) and their action self-efficacy ($M = 11.85$, SD = 3.24; possible scale range: 4–16) were high. Especially, TL was highly rated ($M = 12.29$, SD = 2.77; possible scale range: 4–16) followed by IL ($M = 9.44$, SD = 1.89; possible scale range: 3–12) and then SL ($M = 8.93$, SD = 2.28; possible scale range: 3–12). All variables correlated significantly with each other ($P < 0.05$). Finally, each of the latent constructs (ME, RMSEA = 0.041, SRMR = 0.061, CFI = 0.951; self-regulatory self-efficacy, RMSEA = 0.037, SRMR = 0.043, CFI = 0.945; action self-efficacy, RMSEA = 0.040, SRMR = 0.051, CFI = 0.908; TL, RMSEA = 0.034, SRMR = 0.055, CFI = 0.933; instructional leadership, RMSEA = 0.000, SRMR = 0.000, CFI = 1.000; SL, RMSEA = 0.000, SRMR = 0.000, CFI = 1.000) exhibited acceptable to good model fit.

Discriminant and convergent validity

Measuring the convergent validity of the measures, the following were obtained: ME (AVE = 0.654, CR = 0.883), SEs (AVE = 0.596, CR = 0.880), SEa (AVE = 0.615, CR = 0.863), TL (AVE = 0.585, CR = 0.849), IL (AVE = 0.542, CR = 0.776) and SL (AVE = 0.617, CR = 0.824). Thus, the values of all constructs exceeded the thresholds recommended by Hair et al. (2019), indicating convergent validity. The degree to which items in one construct differ from those in another is measured by construct discriminant validity. The Pearson correlation coefficients of each concept were compared to the matching square root of the AVE estimates to calculate this measure. Table 1 shows that each construct's discriminative validity was deemed acceptable since all of the AVE square roots were greater than the correlation coefficient's absolute values (Hair et al., 2019).

Model fit analysis

We used SEM to investigate the complex links between school leaders' ME, self-efficacy and *LfL*. In our SEM, we modelled *LfL* as a second-order factor (Gignac, 2007), as (a) 'Leadership for Learning combines dimensions of multiple leadership practices to create a single composite' (Bellibaş et al., 2021: 781) and (b) theory suggests a hierarchical structure, that is, it implies that the association between *LfL* and the measured variables (manifest items surveyed) is mediated by the first-order factors, that is, instructional, transformational and SL (Daniëls et al., 2019). The three-dimensional second-order measurement model of LfL (LfL, three-dimensional

second-order factor, RMSEA = 0.023, SRMR = 0.038, CFI = 0.981) fitted the data much better than a one-dimensional scale (LfL, unidimensional factor, RMSEA = 0.029, SRMR = 0.070, CFI = 0.912). The fit indices (CFI = 0.930, RMSEA = 0.0476, SRMR = 0.073), further, showed that the proposed SEM model well explained the data.

Structural equation model

As can be seen in Table 2, school leaders' ME played a significant positive role in their leader self-regulatory self-efficacy ($\beta = 0.38$, $P < 0.000$), leader action self-efficacy ($\beta = 0.57$, $P < 0.000$) and *LfL* ($\beta = 0.32$, $P < 0.000$). Also, both school leader action self-efficacy ($\beta = 0.60$, $P < 0.000$) and leader self-regulatory self-efficacy ($\beta = 0.39$, $P < 0.000$) significantly affected their *LfL* behaviour. The above results imply that school leaders tend to exhibit stronger *LfL* when they have acquired adequate ME vis-à-vis action self-efficacy and leader self-regulatory self-efficacy.

Mediation analysis

Next, we estimated the mediating roles of leader self-regulatory self-efficacy and leader action self-efficacy on the relationship between ME and *LfL*. As reported in Table 3, we found a significant mediating effect of school leaders' leader self-regulatory self-efficacy on the relationship between ME and *LfL* ($\beta = 0.244$, $P = 0.000$, 95% CI = [0.113, 0.443]). Similarly, there is a significant mediating effect of school leaders' action self-efficacy on the relationship between ME and *LfL*

Table 2. Standardised direct effects.

	β	SE	*P*
Leader self-regulatory self-efficacy ← mastery experience	0.380	0.074	0.000
Leader action self-efficacy ← mastery experience	0.569	0.063	0.000
Leadership for learning ← mastery experience	0.316	0.100	0.040
Leadership for learning ← leader action self-efficacy	0.603	0.117	0.000
Leadership for learning ← leader self-regulatory self-efficacy	0.388	0.119	0.000
Transformational leadership ← leadership for learning	0.866	0.019	0.000
Instructional leadership ← leadership for learning	0.871	0.013	0.000
Shared leadership ← leadership for learning	0.798	0.019	0.000

Table 3. Mediation analysis summary with 95% bootstrapped confidence intervals.

			Confidence interval		
Relationship	Direct effect	Indirect effect	Lower bound	Upper bound	*P*-value
Mastery experience → leader self-regulatory self-efficacy → leadership for learning	0.316	0.244	0.113	0.443	0.000
Mastery experience → leader action self-efficacy → leadership for learning	0.316	0.568	0.359	0.840	0.000
Total mediation effect		0.812	0.526	0.988	0.001

($\beta = 0.568$, $P = 0.000$, 95% CI = [0.359, 0.840]). Consequently, we found a significant total mediating effect of school leaders' self-regulatory self-efficacy and their action self-efficacy on the relationship between ME and *LfL* ($\beta = 0.812$, $P = 0.001$, 95% CI = [0.526, 0.988]).

Discussion of the findings

Our findings revealed that both ME and self-efficacy of school leaders have significant direct positive effects on their *LfL* behaviour. This finding is consistent with the fundamental tenets of Bandura's social cognitive theory, which holds that individuals who perceive themselves as more capable of improving are more inclined to view difficult tasks as a means of getting there and are more motivated to pursue them (Bandura, 1989). Consistent with both Chan and Drasgow's (2001) LDM and the rationale of social cognitive career theory (Lent et al., 1994), we also found strong indirect effects of leadership ME on school leaders' *LfL*. Therefore, the results presented suggest possible efficacy–performance spirals (Lindsley et al., 1995): positive leadership experiences lead to stronger leader self-efficacy, which leads to improved leadership in schools.

Similar to Kwok et al. (2021), we observed that leader self-regulatory self-efficacy was higher than leader action self-efficacy. The correlation between leader action self-efficacy facet and both leadership ME and *LfL* was significantly higher. This seems to be consistent with the work of Louis et al. (2010), which shows that high self-efficacy empowers school leaders to be adaptable and welcome the demands of school reform, which enables them to identify appropriate solutions. Higher self-efficacy school leaders are therefore more likely to be driven to take action when faced with obstacles to their school's progress, which will support collective teacher efficacy and have a good impact on instruction and student learning (Yada and Savolainen, 2023). Buttressing these findings, Badura et al. (2020) indicated that a school leader's self-efficacy is a significant factor in determining whether or not they become principals and are able to lead followers effectively. In line with that, Gümüş and Bellibaş (2020) were able to show how the professional development of school leaders influenced their self-efficacy and, consequently, their learning-centered leadership behaviours. Furthermore, substantial correlations between self-efficacy and transformative leadership were discovered by Leithwood and Jantzi (2008) and Hallinger et al. (2018).

From a cross-cultural perspective, our findings also point to similarities and differences. On the one hand, similarly, in a research from Turkey, it has been discovered that when it comes to how TL affects teacher agency, self-efficacy acts as a mediator (Polatcan et al., 2023). Other findings indicate a weak but statistically significant correlation between school leaders' professional experience and their learning-centered leadership, with self-efficacy serving as a major mediating factor (Gümüş and Bellibaş, 2020). Further, Liu and Hallinger (2018) discovered a significant correlation between Chinese school leaders' leadership styles and their sense of self-efficacy. However, on the other hand, the magnitude of such a relationship in the Nigerian context was stronger than that of the Chinese and Turkish school leaders. This is a cause of concern to establish the cause of the disparity in the magnitude of the relationship between school leaders' leadership practices and their self-efficacy in Chinese, Turkish and Nigerian contexts.

As a result, we conclude that leader self-efficacy may have a remarkable effect in promoting LfL in Nigerian schools and can be fostered through leadership ME. Contrary to previous assumptions based on subjective reports from principals (Imoni, 2020), it appears that school leaders in Nigeria are less in need of training to achieve goals effectively than they are in need of acquiring leadership

skills. That is, because their belief that they can motivate others and change schools has a much stronger impact on their behaviour than their belief that they have the necessary skills and abilities to do so. However, as Kwok et al. (2021) show, both facets of leader self-efficacy are equally relevant for effective leadership, as they reinforce each other over time.

Because leadership MEs have both direct and indirect effects mediated through both facets of leader self-efficacy, we conclude that it is important to experience repeated and ongoing modest leadership triumphs as teachers and both in preparation for school leadership and in professional development. In our view, these experiences should focus on three aspects to create positive efficacy–performance spirals and empower school leaders to provide the best possible LfL: (1) leadership effectiveness experiences (to foster leader action self-efficacy), (2) leadership learning experiences (to foster leader self-regulatory self-efficacy) and (3) leadership congruence experiences, that is, are my leader actions consistent with my ideas of effective leadership (to directly foster LfL).

Limitations and further research

The findings of this research are not without some limiting factors. Most importantly, we limited the respondents to this research to only the school leaders who responded to the quantitative instruments cross-sectionally. However, to better investigate the *LfL* of school leaders, it could be helpful to consider the perspectives of other actors both inside and outside the school, such as partners of the principal, teachers, school board members and members of the school network. Such diverse views can confirm whether principals' leadership behaviours were also perceived by teachers or other colleagues by hearing from others who have worked with them over time, that is, using a self-other approach (Fleenor et al., 2010).

Our findings indicate that past MEs of leadership have led to the development of current leader self-efficacy beliefs, which in turn are related to current leadership practices. These practices may, in turn, lead to the acquisition of new MEs, which in turn may lead to a change in leader self-efficacy. Nonetheless, this conclusion is primarily based on Badura's assumption that an individual who has already demonstrated proficiency in a task is more likely to perceive themselves as competent, which in turn leads to the effects empirically investigated in our study. Consequently, to investigate and prove the existence of such efficiency–performance spirals in more detail, it would be beneficial to collect longitudinal data, particularly given that studies (Hardy III, 2014; Lindsley et al., 1995) have demonstrated that failure may result in a decline in self-efficacy, indicating that not only gain spirals but also loose spirals are possible. Thus, we suggest that future research replicates our study by surveying the views of others instead of only the school leaders and collecting data longitudinally.

Conclusion and implications

Our research was targeted at establishing how *LfL* can be promoted through leaders' ME and leader self-efficacy in a populous West African country. Results show that principals who report exhibiting mastery and self-efficacy also report that they have high degrees of LfL. Accordingly, the findings are the first evidence of efficiency–performance spirals that have an impact on the development of school leaders in Nigerian schools. Based on this and the available literature (Machida and Schaubroeck, 2011; Salanova et al., 2011), for practice, we conclude that effective school leadership can and should be promoted by enhancing the leadership MEs of all those involved in a school,

as leadership (especially in Nigeria) is not only enacted by those in formal leadership positions (Imoni, 2020; Olujuwon and Perumal, 2015, 2018).

In terms of research, our study shows that it can be useful to examine school leader development using Chan and Drasgow's (2001) LDM. However, we have only examined a small part of this complex model. Therefore, it would be important to further examine the role of personal values, traits and demographic characteristics, such as gender. It would also be important to examine the role of motivation to lead as a mediator between self-efficacy and leadership emergence and effectiveness. Badura et al.'s (2022) review shows that this is the critical factor when it comes to actually taking on leadership roles. Researching this would be particularly important because affective and emotional states play an important role in building a leader identity (Guillén et al., 2015), which, in turn, is essential for effective, meaningful and just school leader development (Moorosi, 2014, 2020), but have been understudied in leadership development research (Vogel et al., 2021). Since cultural values also play an important role in this regard (Badura et al., 2022; Chan & Drasgow, 2001), it would be desirable to collect data on these in the future and to conduct comparative cultural studies on school leadership and leader development based on comparable standards and survey instruments.

Author Contributions

Christian S Ugwuanyi: conceptualisation, data curation, formal analysis and investigation, project administration, writing – original draft, writing – review and editing; Marcus Pietsch: conceptualisation, methodology, project administration, resources, visualisation, writing – original draft preparation, writing – review and editing, funding acquisition.

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