



The mediating role of lecturer biographic factors on curriculum implementation in universities

Norman Rudhumbu¹ · Elize du Plessis¹

© UNESCO Institute for Lifelong Learning and Springer Nature B.V. 2022

Abstract

The study presented in this article investigated the influence of *lecturer biographic factors* on curriculum implementation in universities in Botswana. Over the last two decades, Botswana has been transforming its education system to improve curriculum implementation in universities, particularly in terms of who should be allowed to teach and the qualification level of students they should instruct. A mixed-methods research approach that employed a structured questionnaire and semi-structured interviews was used to collect data from 306 lecturers and 25 academic middle managers (AMMs) respectively. *Confirmatory factor analysis* (CFA) was used to validate the questionnaire and expert opinion validated the interview guide. To analyse the resulting quantitative data, *multiple regression analysis* and *descriptive statistics* were used, while *thematic analysis* was employed for the qualitative data. Findings showed that lecturers' educational level, age and teaching experience have a significant influence on effective implementation of curricula in universities, while gender has no significant influence. These results have implications for both policy and practice with regard to lecturer recruitment and curriculum implementation in universities.

Keywords Lecturer biographic factors · Curriculum implementation · Educational level · Gender · Curriculum · Universities

Résumé

Le rôle intermédiaire des facteurs biographiques des maîtres de conférences dans la mise en œuvre des curriculums à l'université – L'étude présentée dans cet article examine l'influence des facteurs biographiques des maîtres de conférences sur la

✉ Norman Rudhumbu
nrudhumbu@buse.ac.zw

Elize du Plessis
dplesec@unisa.ac.za

¹ Department of Curriculum and Instruction, University of South Africa, Pretoria, South Africa

mise en œuvre des curriculums dans les universités au Botswana. Au cours des deux dernières décennies, le Botswana a transformé son système de l'éducation en vue d'améliorer la mise en œuvre des curriculums dans les universités, notamment en définissant qui devrait être autorisé à enseigner et à quel niveau d'études. L'étude présentée ici a été réalisée en s'appuyant sur une méthode de recherche mixte recourant à un questionnaire structuré et à des interviews semi-structurées pour collecter des données respectivement auprès de 306 maîtres de conférences et 25 cadres universitaires moyens. Elle a utilisé une analyse factorielle de confirmation pour valider le questionnaire et des experts ont fourni leur avis pour valider le guide des interviews. Pour analyser les données quantitatives recueillies, on a recouru à l'analyse de régression multiple et aux statistiques descriptives, tandis que l'analyse thématique a servi pour les données qualitatives. Les résultats ont révélé que le niveau de formation des maîtres de conférences, leur âge et leur expérience en matière d'enseignement influent considérablement sur l'efficacité de la mise en œuvre des curriculums au sein des universités, tandis que le genre ne joue pas un rôle important à ce propos. Ces résultats ont des conséquences tant politiques que pratiques quant au recrutement des maîtres de conférences et à la mise en œuvre des curriculums dans les universités.

Introduction

Lecturer biographic factors (also referred to as *lecturer factors*) can significantly influence effective curriculum implementation in universities (Luo 2016; Vold 2017; Lawyer 2019). A large body of research confirms that lecturers play a more crucial role than textbooks in curriculum implementation, because they ultimately decide *what* content is and is not taught, as well as *how* it is taught. Effective implementation requires teachers to apply their “in-depth knowledge of the subject content and appropriate teaching methodologies and approaches to the teaching of content in a subject area” (Rowe 2005). Therefore, lecturer quality – as defined by biographic factors which include educational level, years of teaching experience, gender, age and beliefs about teaching and learning – may define and shape the effectiveness of curriculum implementation in universities. As a result, the study presented in this article aimed to investigate how lecturer biographic factors influence the effective implementation of curricula in universities in Botswana.¹

Study context and objectives

The rapid – and in some cases uncontrolled – growth in the number of higher education institutions (HEIs) in Botswana in the early 1990s caught the government by surprise and left it exposed and unprepared to regulate these institutions (Mbuya 2017a, b; Obasi 2007; TEC 2013; Arikewuyo 2013). To quickly deal with this emer-

¹ This article is an original paper extracted from the first author's Doctor of Education (DEd) thesis (Rudhumbu 2018) as part of examinations requirements that demand that a student publishes at least one paper from the thesis.

gency, the government implemented strict regulatory mechanisms (standards) which every HEI in Botswana was to strictly abide by (BQA 2016; TEC 2015). One of the critical standards used as a regulatory tool was the “staffing standard”. Universities were required to recruit lecturers with a minimum of a master’s degree to teach undergraduate students and a doctoral degree to teach postgraduate students, as well as ensuring gender balance (BQA 2016; TEC 2015). Retirement age was also strictly abided by to ensure that all lecturers (whether citizens of Botswana or expatriates) did not continue teaching after this age was reached.

It was against this background that the current study sought to investigate whether lecturer biographic factors (including educational level, years of teaching experience, gender and age), as stipulated in the Botswana Government staffing standard, have an influence on the effective implementation of curricula in universities.

As a result, this study aimed to:

- identify lecturer biographic factors that influence the effective implementation of curricula in universities in Botswana; and
- establish how significantly these lecturer biographic factors influence the effective implementation of curricula in universities in Botswana.

Literature review

The concept of curriculum implementation

Implementation is one of the most critical elements of the curriculum process; however, it is also the most neglected and, in many cases, it is ill-defined and poorly understood (Yang 2013). The major challenge in giving a precise definition of curriculum implementation lies in the historical meaning of the word *implementation* (Carson 2009). According to Terrance Carson (2009), the term comes from the Latin word *implere* which means to fill up. This has resulted in an erroneous impression that curriculum implementation is therefore a process of simply filling up a knowledge or skills void that exists in the worlds of teachers and students. As a theoretical concept, however, implementation is viewed as the carrying out of something or the practical application of a method, procedure or desired purpose (Claxton and Lucas 2016; Ornstein and Hunkins 2018). Curriculum implementation is therefore defined as the process of putting into practice a new curriculum and checking whether it makes a difference or brings about change (Ornstein and Hunkins 2014). It has also been defined as the process of translating an intended curriculum into operation (Fullan 2001). It is considered the most crucial, and, sometimes, the most difficult phase of the curriculum process (Ornstein and Hunkins 2014). Curriculum implementation, therefore, is not finite but rather an iterative, ongoing, adaptive and interactive process in which changes in one aspect lead to changes in other related aspects (Ornstein and Hunkins 2018; Yang 2013).

A study by Ayodele Asebiomo (2015) found that no matter how well a curriculum is formulated, its effective implementation depends on the resources available – and one critical resource is teachers/lecturers. This was confirmed by the research

of Mahsood Shah and Chenicheri Sid Nair (2013) and Allan Ornstein and Francis Hunkins (2014, 2018), who separately alluded to the fact that the effectiveness of the curriculum implementation process depends on the role of the teacher or lecturer. According to Emily Bouck (2008), lecturers (as defined by their biographic factors or characteristics) play a more important and direct role than textbooks in curriculum implementation, as they shape how the curriculum is enacted in classrooms.

The legal and regulatory framework of higher education in Botswana

In 1990, Botswana had only five HEIs (TEC 2013) – of these, the University of Botswana was the oldest, established in 1982. However, by 2013 there were 316 registered and unregistered tertiary institutions operating in Botswana, of which 229 were private and the rest public (TEC 2013).² This increase in HEIs was driven by a strong partnership between the Botswana Government and the private sector to provide much-needed higher education in the country (TEC 2013; Samboma 2017). Of these 316 HEIs, only eight offered degree-level qualifications (TEC 2015). In addition, of these eight degree-offering HEIs, only six had operated for a period of at least five years by 2013; by 2020, most had more than 10 years of operation, with the University of Botswana having operated for the last 38 years.

The astronomical and uncontrolled expansion of HEIs in Botswana surprised the government, and education regulatory authorities were either under- or unprepared for the influx (Setume 2013). A sizeable number of these HEIs were operating with scant human and material resources and with poorly trained and experienced academic staff and management (TEC 2015; BQA 2016). This, as mentioned above, led to questions being asked about the quality of curriculum implementation in these institutions (BOTA 2011; Siphambe 2012; Arikewuyo 2013). As a result, there was an urgent need for the Botswana Government to establish mechanisms to monitor and control the quality of education offered by these HEIs (BQA 2016; TEC 2013; Tsevi 2014). One such mechanism was to ensure that lecturers recruited to teach in these universities were fit for purpose. This meant that lecturers needed to possess an acceptable level of education, be adequately experienced to teach at higher education level and be below retirement age. Recruitment also needed to respect gender balance (BQA 2016; TEC 2015; Mbuya 2017a, b; Obasi 2007). All lecturers working in universities in Botswana are required to be accredited with the Botswana Qualifications Authority (BQA) before being allowed to teach (BQA 2016; TEC 2013). These requirements apply to both public and private universities equally, and are followed up and strictly monitored by Botswana Government Ministry of Education officials. As a result of this strict regulatory framework, lecturers in HEIs in Botswana operate under a highly regulated environment (Kaboyakgosi 2018; Makambe 2017; Samboma 2017; Baputaki 2010), making curriculum implementation an onerous task.

² In Botswana, public education is administered and funded by the government, while private education fees are paid for by students/parents.

Research model and hypotheses

This study is informed by the *ecological systems theory* developed by Urie Bronfenbrenner (1979). The theory posits that there are a number of factors within the education system that influence curriculum implementation (UK Essays 2018; Luo 2016). Further, education itself represents a complex system with multiple nested layers that directly and indirectly influence curriculum implementation (Taguma and Barrera 2019). These layers include:

- the *microsystem* – classroom-related factors that include lecturer and curriculum characteristics;
- the *mesosystem* – institutional factors that include leadership style and resource support;
- the *exosystem* – external factors that include the government and educational policies;
- the *macrosystem* – wider society that includes parents and industry; and
- the *chronosystem* – characteristics that either support or constrain effective curriculum implementation (Maani 2010; Otaala et al. 2013).

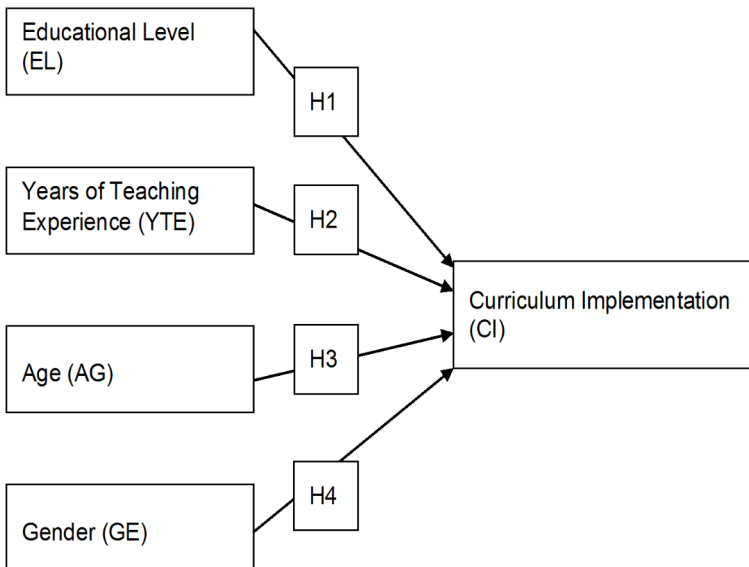


Fig. 1 Research model adapted from ecological systems theory (Bronfenbrenner 1979)

Of these, only the microsystem factors were considered relevant to this study, as demonstrated in the research model shown in Figure 1.

In the context of the current study, and in line with ecological systems theory, microsystem factors represent lecturer characteristics that either directly or indirectly influence the implementation of curricula in universities. These factors either hinder or promote effective curriculum implementation (Bediako 2019; Spreen and Knappczyk 2017). Lecturer characteristics fall under the technical dimension of curriculum implementation. This relates to the level of knowledge and skills lecturers have in their areas of specialisation (Cavanagh and McMaster 2017). Some of the lecturer biographic factors that influence curriculum implementation in HEIs include educational level, years of teaching experience, age and gender, as shown in Figure 1 and further explored in the section below.

Microsystem factors and curriculum implementation

Lecturer educational level and curriculum implementation

Research has confirmed that higher educational levels of lecturers enhance the implementation of curricula (Ofem et al. 2015; Ohide and Mbogo 2017; Lawyer 2019). According to Glenn Finger and Belinda Houguet (2009), *educational level* can be defined as having good background knowledge of the content in a subject area. In their studies, Alyaha Ohide and Rosemary Mbogo (2017) and Obono Ofem et al. (2015) found that higher educational levels enhanced lecturers' curriculum implementation capabilities. It also contributes to lecturers' positive perceptions of their own ability (self-efficacy) and involvement in the implementation of innovations such as curricula. Likewise, the level of curricular knowledge represents one's cognitive abilities and skills to participate effectively in curriculum implementation (Jess et al. 2016).

Further, Mike Jess et al. (2016) found that lecturers need capacity to be able to effectively implement curricula; hence, a higher educational level has higher predictive potential for effective curriculum implementation. Jon Wiles and Joseph Bondi (2014) also found that lecturers with higher educational levels are better at planning for learning and catering for the needs of students when compared to those with lower levels. This was confirmed in a study by Ohide and Mbogo (2017), who found that higher educational levels improved information processing and absorptive capacity and the ability to effectively implement curricula.

The availability of adequately and technically qualified and experienced lecturers, therefore, is critical to the effective implementation of curricula (Cavanagh and McMaster 2017). The Organisation for Economic Co-operation and Development (OECD 2018) found that lecturer quality is a critical component in the successful implementation of curricula in any HEI. Adequately qualified and experienced lecturers have extensive and deeper knowledge of both curricula and strategies for implementation (Claxton and Lucas 2016). Thus, providing lecturers with sufficient training to improve their content knowledge helps them to effectively and successfully implement curricula in educational institutions. These findings and insights lead to my first hypothesis:

H1: *There is a statistically significant relationship between the educational level of university lecturers and effective implementation of curricula.*

Years of teaching experience and curriculum implementation

Teaching experience, commonly referred to as years of experience or organisational tenure, is viewed as an organisation's tacit knowledge, which is critical for improved employee performance (Ng and Feldman 2009; Jacobs 2015). Habil Otanga and Daniel Mange (2014) found that years of experience affect how individuals interpret and participate in curriculum implementation, as well as whether they view it as a process that needs to be effectively managed and implemented. Thomas Ng and David Feldman (2010) assert that a highly experienced person operates from a more sophisticated knowledge base than someone less experienced; hence, they are better able to plan and implement a curriculum innovation. Caroline Tillou and Sébastien Liarte (2008) also found that people who have stayed in the same job for a period of time are less likely to make errors of judgement, and perform better in their roles when compared to new employees. These considerations lead to my second hypothesis:

H2: *There is a statistically significant relationship between the years of teaching experience of university lecturers and effective implementation of curricula.*

Lecturer age and curriculum implementation

Olusola Ibukun et al. (2011) found that *lecturer age* plays a catalytic role in shaping an individual's perceptions and involvement in the implementation of an innovation. What a person learns over the years is critical in shaping how they deal with challenges of curriculum implementation, as well as how they apply different strategies to ensure effective implementation. Charles Buabeng-Andoh (2012) discovered that age had a moderating influence on an individual's decision-making perspectives and choices during the process of implementing an innovation. This means that as a person grows in age, they mature and become wiser, with more focused decision-making based on what they have learned over the years. An earlier study by Diane Miller and Leonard Karakowsky (2005) found that older employees possess a relatively superior knowledge of work and life that helps them to perform better than younger employees in a number of situations. This is supported by Sara Jacobs et al. (2015), who found that age had a direct impact on how an innovation was implemented, with older people being more perceptive and able to perform their tasks with greater confidence. These findings and insights lead to my third hypothesis:

H3: *There is a statistically significant relationship between the age of university lecturers and effective implementation of curricula.*

Lecturer gender and curriculum implementation

Gender has become a topical issue in education in general and in curricula in particular. In her discussion on gender issues in education, Gouri Srivastava (2017) argues that gender is a social construct that affects attitudes, roles, responsibilities and behaviour patterns in all societies, and hence is an issue shaped by power relations in multicultural communities. Gender, therefore, plays a critical role in how people perform their assigned tasks, as it.

encompasses socially constructed and culturally based roles of men and women with a view to understanding how unequal power relations between them are shaped and operate in organizations or institutions (Allana et al. 2010, p. 3).

In their study, Anita Allana et al. (2010) found that these gendered power relations are functions of the different ways in which institutions are organised or constituted. They are, in many cases, used to unfairly and incorrectly define how men and women carry out their roles in society in general. In the context of curriculum implementation, there has been much debate about whether men and women implement curricula the same way, with some studies attributing differences to physiological aspects and others pointing to cultural connotations. However, other studies, such as by Shan Simmonds (2017), have found that gender differences have no influence on how curricula are implemented in universities. These considerations lead to my final hypothesis:

H4: *There is a statistically significant relationship between the gender of lecturers and effective implementation of curricula.*

Methodology

Research design

The research team comprised the two authors of this article (the first author as a doctoral candidate; the second author as a supervisor). For this study, we chose a mixed-methods approach which employed a concurrent triangulation design³ to ensure that:

- (1) a critical mass of lecturers was captured through the use of a structured questionnaire, to provide as many diverse views as possible on the influence of lecturer factors on effective curriculum implementation in universities; and
- (2) a critical mass of academic middle managers (AMMs) was captured through the use of semi-structured interviews, to deeply probe the influence of biographic factors on effective curriculum implementation in universities.

³ A *triangulation design* (or *parallel design*) refers to combining data (e.g. qualitative and quantitative) collected by different methods (in our case, a survey and interviews during the analysis phase).

Stratified random sampling⁴ was used to select 306 lecturers (from a population of 2,907) from six universities in Botswana which had been degree-offering institutions for at least five years at the time of conducting this study. The overall distribution of the lecturers was:

$$X_1 = 61; X_2 = 49; X_3 = 72; X_4 = 33; X_5 = 65; X_6 = 26$$

The six universities were purposively selected from among eight registered universities operating in Botswana. To determine the sample size, we used the Research Advisors (RA 2006) online sample size table (at 99% confidence level with an error margin of 3.5%). The selected six universities had been operating for at least 10 years and were chosen as rich sources of data for the study. We used purposive sampling to invite 25 AMMs (from a population of 273) across the six universities to participate in the study. These AMMs were lecturers who also held positions of leadership such as heads of department (HODs) and module leaders (MLs) and had at least five years of academic management experience; hence, they were considered to be rich sources of how curricula were being implemented in their departments. The overall distribution of the AMMs was:

$$X_1 = 2; X_2 = 5; X_3 = 2; X_4 = 3; X_5 = 7; X_6 = 5; X_7 = 1$$

Data collection instruments and procedures

Data collection was carried out through a survey and semi-structured interviews. For the survey, we designed a structured questionnaire which employed a 5-point Likert scale based on four independent factors (variables) and one dependent variable which included a total of 32 items:

- educational level (EL) – 7 items;
- years of teaching experience (YTE) – 9 items;
- age (AG) – 5 items;
- gender (GE) – 6 items; and
- curriculum implementation (CI) – 5 items.

The Likert scale options in the questionnaire ranged from Strongly Disagree (SDA)-1, Disagree (DA)-2, Neutral (N)-3, Agree (A)-4, to Strongly Agree (SA)-5. For the interviews, we used a semi-structured interview guide which was based on the above four independent variables. The questionnaire was validated using confirmatory factor analysis (CFA), while the interview guide was validated by experts in the field of curriculum studies, with suggestions incorporated into the final instrument.

The first author applied for and was granted ethical clearance before commencing the study. Both researchers explained to all participants issues of confidentiality and

⁴ *Stratified random sampling* is “a probability sampling procedure that is used primarily on quantitative-oriented studies in which various subgroups (strata) in a population of interest are proportionately represented in the study sample” (Rudhumbu 2018, p. 147).

also that they were free to stop participating in the study at any stage. Thereafter all participants signed consent forms before the commencement of the study. A total of 306 hard-copy questionnaires (along with information statements and consent forms) were hand-delivered to the selected respondents, through specially designed boxes in the offices of faculty administrators. Lecturers collected, completed and returned the questionnaires to these boxes. Completed questionnaires were collected after two weeks; a follow-up was undertaken one week later to gather additional completed questionnaires. Overall, 258 questionnaires were returned – a return rate of 84.3%. The 25 interviews took place in boardrooms of the respective universities and lasted between 30 and 45 minutes.

Data analysis

We used descriptive statistics⁵ to summarise the quantitative data, moving on to their analysis using *multiple regression analysis*, while employing *thematic analysis* for the qualitative data. Our choice of multiple regression analysis aimed to establish the nature of the relationship between the independent variables (EL, YTE, AG and GE) and the dependent variable (CI). Thematic analysis, on the other hand, involved coding and categorising data to establish recurring patterns, topics, ideas, similarities, inconsistencies or contradictions (Creswell 2015; Creswell and Plano Clark 2017) in how lecturers viewed the contribution of biographic factors to the effective implementation of curricula in universities.

Table 1 Lecturer biographic factors for universities in Botswana

Factor	Items	<i>n</i>	%
AG	≤ 30 years	87	33.7
	31–40 years	75	29.1
	≥ 41 years	96	37.2
EL	Master's degree	155	60.1
	Doctoral degree	50	19.4
	Other	53	20.5
YTE	≤ 10 years	113	43.8
	11–20 years	57	22.1
	≥ 21 years	98	34.1
GE	Male	141	54.7
	Female	117	45.3

Note: AG = age; EL = educational level; YTE = years of teaching experience; GE = gender

⁵ The purpose of *descriptive statistics* is “to summarise the data to allow the researcher to understand the patterns that emerge” (Rudhumbu 2018, p. 158).

Results

Summary of lecturer biographic factors

Table 1 shows that most lecturers (62.8%) employed in the six sample universities in Botswana were aged 40 years or under, which indicates good investment in human resources. It is a challenge for universities to recruit doctoral-qualified staff – most lecturers in this sample held master’s degrees (60.1%), while only 19.4% held doctoral degrees. Lecturers who also had other qualifications – such as membership of the Association of Certified Chartered Accountants (ACCA) and the Certified Institute of Management Accountants (CIMA) – account for the remaining 20.5%. There were still more male (54.7%) than female lecturers (45.3%) in these sample universities in Botswana, signifying failure to address gender imbalances.⁶

Validation of questionnaire

We conducted two tests – the Kaiser-Meyer-Olkin (KMO) and Bartlett’s – to demonstrate the suitability of the data for CFA. The KMO measure of sampling adequacy of .749 demonstrated that the data satisfied the benchmark of $KMO \geq .05$ (Hair et al. 2010); hence, a factor analysis could be conducted. The Bartlett’s Test of Sphericity result of 316.113, which was also significant ($p = .000$), satisfied the benchmark of

Table 2 Kaiser-Meyer-Olkin (KMO) and Bartlett’s tests for independent variables and confirmatory factor analysis

Test		Result
KMO Measure of Sampling Adequacy		.749
Bartlett’s Test of Sphericity	Approx. Chi-Square	316.113
	df	137
	Sig.	.000

Table 3 Convergent validity and reliability measurement of the instrument

Factor	No. of items	Factor loadings	Average variance extracted	Composite reliability
AG	3	.746	.719	.912
GE	5	.825	.743	.759
EL	5	.880	.802	.836
YTE	7	.761	.815	.739
CI	4	.823	.805	.905

Notes: Independent variables: AG = age; GE = gender; EL = educational level; YTE = years of teaching experience.

Dependent variable: CI = curriculum implementation

⁶Participants identified as male or female in the questionnaire.

$p < .05$ (Hair et al. 2010). The overall results of these two tests (shown in Table 2) demonstrated the data structure's suitability for conducting factor analysis in order to validate the data.

Table 3 shows the results of a test of reliability and convergent validity of the scale items. All items with factor loadings of less than .6 were removed to enhance data clarity (Hair et al. 2014). Internal consistency reliability was tested through the composite reliability (CR) of each of the variables. Table 3 shows that CR values range between .739 and .912, which satisfies the benchmark of $\alpha \geq .7$ for adequate internal consistency reliability (Howell et al. 2010; Hair et al. 2010). The results also confirm convergent validity through standardised factor loadings, CR and average variance extracted (AVE) (Hair et al. 2014). Standardised factor loadings (which range between .746 and .880), CR values (which range between .739 and .912) and AVE values (which range between .712 and .815) confirm convergent validity of the scale items.

Table 4 presents a test of discriminant validity of the scale items. A comparison of the values of the square roots of AVE (bold diagonal values) for each variable, and the vertical correlations of the variables, show that all the diagonal values were greater than the vertical values, thus satisfying requirements of discriminant validity (Hair et al. 2017).

Testing of hypotheses

We used the results shown in Table 4 to demonstrate multicollinearity testing,⁷ model fitness and how much the four variables contributed to effective curriculum implementation in universities. Results show that for all variables (Tolerance < 1; VIF < 10), which means that assumptions of multicollinearity were satisfied in this study. The F statistic ($F = 6.338$; $p = .000$; $p < .05$) is significant, thus confirming the fitness of the model and demonstrating that there was a significant relationship between the four variables (EL, YTE, AG and GE) and effective curriculum implementation in

Table 4 Correlation matrix and discriminant validity

Constructs	AG	GE	EL	YTE	CI
AG	.848				
GE	.151**	.862			
EL	.374**	.308**	.896		
YTE	.729**	.522	.519*	.903	
CI	.016**	.613	.720**	.201**	.897

*Sig. $p < .05$ (two-tailed) **Sig. $p < .01$ (two-tailed)

Notes: Bold diagonal values represent square roots of average variance extracted for each construct.

Independent variables: AG = age; GE = gender; EL = educational level; YTE = years of teaching experience.

Dependent variable: CI = curriculum implementation

⁷Multicollinearity refers to "the existence of a perfect or nearly perfect linear correlation between a set of variables when the regression of some dependent variable on them is being investigated" (OUP 2022).

universities. The adjusted R^2 of .3069 demonstrated that 30.7% of the variation in the effective implementation of curricula in universities could be explained by the four biographic factors, while the remaining 69.3% could be explained by extraneous factors outside the scope of this study.

Based on the above results, we came up with the following regression model for the effective implementation of curricula in universities:

$$ATI = \alpha + b_1EL + b_2YTE + b_3AG + b_4GE = 18.402 + .312 EL + .229 YTE + .233 AG + .116 GE$$

Table 5 demonstrates a significant relationship between EL and CI ($t=3.927$; $\beta=.062$; $p=.000$; $p < .05$). This suggests that lecturers with higher levels of educational qualifications possess greater content knowledge in their areas of specialisation, and hence should be able to implement a curriculum better than those with lower levels of educational qualifications. These results were confirmed in our interviews with AMMs. During the interviews, the following four thematic factors were captured on the influence of educational level on effective curriculum implementation: (1) effective planning and teaching methods; (2) high confidence levels; (3) being qualified

Table 5 Multiple regression analysis on variables

Model summary for regression analysis

Multiple R	.561									
R ²	.3147									
Adjusted R ²	.3069									
Standard Error	.497									
F Statistic	6.338									
Sig.	.0000									
	Independent variables in the equation					95% confidence interval for b			Collinearity statistics	
Model-dependent variable: CI	Unstandardised coefficients	Standardised coefficients				Lower bound	Upper bound	Zero order	Tolerance	Variance inflation factor
Variables	b	SEb	Beta (β)	t	pvalue					
Constant	18.402	3.008		1.772	.069	17.05	22.50			
EL	.312	.715	.062	3.927	.000	.305	.425	.318	.217	1.35
YTE	.229	.337	.034	1.013	.004	.215	.233	.240	.348	3.01
AG	.233	.429	.021	4.407	.002	.225	.249	.261	.191	2.44
GE	.116	.471	.032	7.016	.147	.110	.122	.219	.308	1.98

Notes: Dependent variable: CI=curriculum implementation.

Independent variables: EL=educational level; YTE=years of teaching experience; AG=age; GE=gender

and competent; and (4) high levels of content knowledge. This is illustrated by the following responses from AMMs:

Yes, educational level has an influence because it instils confidence in the student when they know that they are being taught by a highly educated lecturer. Also, as a lecturer, high education levels give you confidence to be able to effectively implement curricula since you will be an expert. (AMM 7)

If your level of education is high, for example, a master's or doctoral qualification, the way you approach your teaching, your teaching methods, and your knowledge levels will be of high standard leading to effective implementation of curricula. All being equal, the more you are highly educated, the more you are able to apply yourself, the more you are able to comprehend or come up with new and better strategies in terms of how you implement curricula. (AMM 8)

Results in Table 5 show that there is a significant relationship between YTE and CI ($t = 1.013$; $\beta = .034$; $p = .004$; $p < .05$). This suggests that the number of years of a lecturer's teaching experience can be used to predict whether they will implement a curriculum effectively or not. This was confirmed in interviews with AMMs where five thematic factors were captured on the influence of years of teaching experience. These factors included: (1) increased knowledge of pedagogy; (2) good knowledge of students and classroom management; (3) higher confidence levels; (4) higher levels of background knowledge; and (5) a wealth of teaching knowledge. Responses from the AMMs included the following statements:

Yes, years of experience is very important because you begin to have higher levels of confidence and background knowledge of teaching that you acquire over the years that enable you to effectively plan and implement curricula. So, yes, experience is very important and is key to effective curricula implementation. (AMM 7)

The way a lecturer delivers his/her lectures, his/her knowledge of pedagogy in terms of lecturing, and knowledge of students and classroom management, are all functions of years of experience and help to ensure effective curricula implementation. (AMM 23)

Table 5 also shows that there is a significant relationship between AG and CI ($t = 4.407$; $\beta = .021$; $p = .002$; $p < .05$). This suggests that a lecturer's age has significant implications on how they implement a curriculum. It also confirms results from the qualitative phase of the study. Four thematic factors emerged from the responses of AMMs on the influence of age on effective curriculum implementation: (1) age and level of motivation; (2) age and competence; (3) age and knowledge; and (4) age and teaching approaches. Among the responses from AMMs were the following statements:

Age also matters in the way curricula are implemented in universities. While younger lecturers may be more energetic and tech-savvy in their teaching, and hence may implement curricula more effectively than older lecturers, older lecturers also may possess experience on how to manage classes as well as on the most appropriate teaching approaches to use when implementing curricula. (AMM 19)

I think it works both ways. Younger lecturers have motivation and perhaps are more competent due to the currency of the knowledge they possess. At the same time older lecturers may be better in teaching approaches and curriculum implementation due to accumulated years of teaching experience. (AMM 25)

Finally, results in Table 5 show that there is no significant relationship between GE and CI ($t = 7.016$; $\beta = .019$; $p = .147$; $p > .05$). This suggests that being either a male or female lecturer does not affect how a lecturer implements a curriculum. This was confirmed by interviews with AMMs. Two thematic factors emerged from AMM responses on the influence of gender on effective curriculum implementation: (1) the role of culture, personality and drive; and (2) stereotyping. The responses included the following statements:

Ah, stereotyping aside, gender is not a factor in curriculum implementation as human beings are born equal with [the] same abilities. (AMM 10)

My view is that gender is not an issue, as effective curricula depend on the personality and drive one has got. (AMM 16)

Culture plays a role in the way women participate in daily activities, but all being equal, I feel there is no significant difference in the way male and female lecturers implement curricula. (AMM 3)

Discussion

The purpose of our study was to identify lecturer biographic factors that have an influence on effective curriculum implementation in universities, as well as to establish how significant this influence is. Guided by a framework of ecological systems theory, we found four major lecturer biographic factors at the microsystem level which can potentially influence effective curriculum implementation: (1) educational level; (2) years of teaching experience; (3) age; and (4) gender.

Results of our study reveal that the educational level of lecturers had a significant influence on the effective implementation of curricula in the sample universities. Lecturers with higher educational levels were shown to be more confident because of their greater content knowledge in their areas of specialisation. Such lecturers were viewed as being more confident and effective in planning their work and, ultimately, in effectively implementing curricula in universities. These results confirm the find-

ings of earlier studies. For example, Ohide and Mbogo (2017) and Ofem et al. (2015) found that lecturers with higher levels of education were more able to interpret curricula and come up with new and better implementation strategies than those with lower levels of education. Thus, content knowledge and the ability to process that content are critical elements that mediate effective curriculum implementation.

In another study which argues that effective curriculum implementation amalgamates both cognitive and non-cognitive attributes, Ng and Feldman (2009) undertook a meta-analysis on the influence of educational levels on lecturer performance during curriculum implementation. They found that higher levels of education developed creative and positive work behaviour which led to more confidence, a feeling of personal satisfaction and effective implementation of the curriculum. Further, Dan Battey et al. (2016) and Abbey MacDonald et al. (2016) found that the most effective implementation occurs when there is an adequate working knowledge of curricula, hence the need for higher educational levels.

The results of the current study also show the critical role that years of teaching experience play in the effective implementation of curricula. The way lecturers deliver lessons, their knowledge of pedagogy (e.g. lecturing styles) and of students, and the classroom management strategies they use, are all functions of years of teaching experience. When a person has high levels of experience, they tend to have learned from the past and better understand their work. Hence, lecturers with more experience generally have a greater understanding both of what to do and what not to do in different teaching contexts to ensure effective curriculum implementation.

Years of teaching experience are a representation and indicator of the accumulation of knowledge and skills over time in one's field, and hence are important in enabling lecturers to effectively implement curricula. Confirming this assertion, Ohide and Mbogo (2017) found that an experienced person operates from a deeper and superior knowledge base when compared to a less experienced one, and hence possesses a superior ability and capacity to plan and effectively implement curricula. Supporting the critical role of tacit knowledge which experienced people possess, and its importance for effective curriculum implementation, Deborah Henderson (2017) found that years of experience improved a person's innovativeness when teaching, and hence positively influence the implementation of innovations such as curricula.

It also emerged from the current study that age has a significant influence on curriculum implementation. Results show that age, like experience, contributes to the accumulation of knowledge and experience critical to better judgement and decision-making, and hence for effective curriculum implementation. In an earlier study, Michael Parsons (2015) found that an individual's decision-making abilities mature with age; thus, age affects how a person participates in the process of innovation implementation.

The current study also found that gender has no influence on how curricula are implemented in universities: male and female lecturers performed the same way when implementing curricula. The only difference was in terms of how they performed their culturally assigned roles; otherwise, gender was viewed as not being an issue with regard to how curricula are implemented. This resonates well with the results of past studies. For example, Allana et al. (2010) found that gender did not have an effect on how men and women participate in curriculum implementation, and

that they performed the same if they had equivalent training. However, other studies, such as the one by Simmonds (2017), have shown that men and women perform differently in curriculum implementation due to a number of factors that include physiological, cultural and belief systems about how each gender is socialised from birth.

Conclusion

This study sought to establish whether lecturer biographic factors have an influence on the effective implementation of curricula in universities. Our results show that the educational level of lecturers is important for the effective implementation of curricula. Higher educational levels entail having high levels of content knowledge in subject areas, having confidence to teach and being able to plan effectively when implementing curricula. Years of teaching experience also play a significant role in the effective implementation of curricula. Highly experienced lecturers possess tacit knowledge – gained over a long period teaching the same subject area – about how to plan and teach different concepts from a curriculum. Results from both the qualitative and quantitative data show that the tacit knowledge that experienced lecturers possess helps them to operate from a deeper and superior knowledge base when compared to those who are less experienced, thus leading to effective curriculum implementation.

We found that age also has a significant influence on how lecturers implement curricula in universities. Age contributes to the accumulation of knowledge and experience; thus, over time people tend to become more patient, wiser and better able to make good judgements. These attributes are important for the effective implementation of curricula. Finally, we found that gender has no influence on how curricula are implemented in universities. Thus, if male and female lecturers receive the same level of training and teach under the same conditions, they will produce similar results with regard to the implementation of curricula.

Recommendations

For effective implementation of curricula in universities, we make the following recommendations based on our study's results and conclusions:

- Universities should aim to recruit highly qualified, competent and experienced lecturers. This will help to ensure that curricula are implemented by people who possess adequate levels of knowledge and skills in their areas of specialisation and who are able to accurately interpret and effectively implement curricula.
- Universities should practise gender parity when recruiting lecturers, as results of the study show that, given similar training, both male and female lecturers perform the same with regard to effective curriculum implementation.

Limitations

One major limitation of the study was that it focused on universities in an urban setting. Future research could examine universities in a rural setting to establish how lecturer biographic factors influence curriculum implementation in this context.

Acknowledgements: The authors wish to thank the managers and lecturers from the participating universities whose contributions made this study possible. Without their support, the study would not have succeeded the way it did.

References

- Allana, A., Asad, N., & Sheriah, Y. (2010). Gender in academic settings: Role of teachers. *International Journal of Innovation, Management and Technology*, 1(4), 343–348
- Arikewuyo, O. (2013). Proliferation of private universities: The Nigerian experience. *The ACPET Journal of Private Higher Education*, 2(1), 35–41
- Asebiomo, A. M. (2015). Moving with global trends in curricula innovation: Mitigating the challenges of curricula implementation for effective teaching and learning in Nigeria. *International Journal of Managerial Studies and Research*, 3(1), 26–33
- Baputaki, C. (2010). Private tertiary institutions future uncertain. *Mmegi*, 19 October [online article]. Retrieved 25 October 2018 from <https://www.mmegi.bw/news/private-tertiary-institutions-future-uncertain/news>
- Bathey, D., Neal, R. A., Leyva, L., & Adams-Wiggins, K. (2016). The interconnectedness of relational and content dimensions of quality instruction: Supportive teacher–student relationships in urban elementary mathematics classrooms. *The Journal of Mathematical Behavior*, 42, 1–19. <https://doi.org/10.1016/j.jmathb.2016.01.001>
- Bediako, S. (2019). Models and concepts of curriculum implementation, some definitions and influence of implementation. Unpublished paper. Retrieved 15 March 2020 from https://www.researchgate.net/publication/333338710_Models_and_concepts_of_curriculum_implementation_some_definitions_and_influence_of_implementation
- Bouck, E. C. (2008). Exploring the enactment of functional curricula in self-contained cross-categorical programs: A case study. *The Qualitative Report*, 13(3), 495–530. <https://doi.org/10.46743/2160-3715/2008.1590>
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press
- BOTA (Botswana Training Authority). (2011). Accredited tertiary education institutions. Gaborone: Botswana Training Authority. Retrieved 25 June 2014 from www.bota.org.bw/bota-institutions
- BQA (Botswana Qualifications Authority). (2016). *BQA happy with tertiary institutions*. Retrieved 23 July 2016 from <http://www.mmegi.bw/index.php?aid=58318&dir>
- Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development using Information and communication Technology*, 8(1), 136
- Carson, T. R. (2009). Re-thinking curriculum change from the place of the teacher: Teacher identity and the implementation of curricula in China. In A. Tero, & R. Eero (Eds.), *Reforming curricula discourses: Subjects, society and curricula* (pp. 231–234). Rotterdam: Sense Publishers,
- Cavanagh, M., & McMaster, H. (2017). A specialist professional experience learning community focused on mathematical problem solving. *Mathematics Teacher Education and Development*, 19(1), 47–65
- Claxton, G., & Lucas, B. (2016). The hole in the heart of education. *The Psychology of Education Review*, 40(1), 4–12
- Creswell, J. W. (2015). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (5th ed.). Boston, MA: Pearson
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Thousand Oaks, CA: Sage

- Finger, G., & Houguet, B. (2009). Insights into the intrinsic and extrinsic challenges for implementing technology education: Case studies of Queensland teachers. *International Journal of Technology and Design Education*, 19(3), 309–334. <https://doi.org/10.1007/s10798-007-9044-2>
- Fullan, M. (2001). Implementing change at the building level. Paper prepared for W. Owings and L. Kaplan (Eds), *Critical and emerging issues in educational leadership* [online paper]. Retrieved 17 May 2015 from <http://michaelfullan.ca/wp-content/uploads/2016/06/13396045300.pdf>
- Hair, J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper saddle River, NJ: Pearson Education International
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modelling (PLS-SEM)*. Thousand Oaks, CA: SAGE
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modelling (PLS-SEM)* (2nd edn). Thousand Oaks, CA: SAGE
- Henderson, D. (2017). “It’s more complex than i assumed”: Examining pre-service teacher reflections on preparing to teach history in the Australian curriculum in years.7–10. *International Journal of Historical Learning, Teaching and Research*, 15(1), 118–136
- Howell, J., Kurlaender, M., & Grodsky, E. (2010). Postsecondary preparation and remediation: Examining the effect of the Early Assessment Program at California State University. *Journal of Policy Analysis and Management*, 29(4), 726–748. <https://doi.org/10.1002/pam.20526>
- Ibukun, W. O., Oyenole, B. K., & Abe, T. O. (2011). Personality characteristics and principal leadership effectiveness in Ekiti State, Nigeria. *International Journal of Leadership Studies*, 6(2), 247–262
- Jacobs, S.R., Weiner, B.J., Reeve, B.B., Hofmann, D.A., Christian, M., & Weinberger, M. (2015). Determining the predictors of innovation implementation in healthcare: a quantitative analysis of implementation effectiveness. *Biomed Central Health Services Research*, 15, <https://doi.org/10.1186/s12913-014-0657-3>. Art. 6
- Jess, M., Carse, N., & Keay, J. (2016). The physical education curricula process: More complex than you think!. *Education*, 44(5), 502–512. <https://doi.org/10.1080/03004279.2016.1169482>
- Kaboyakgosi, G. (2018). GovernmentsubventiontoprivatecollegesthreateningBIUSTandUB-Arebuttal. *SundayStandard*, 28 January [online article]. Retrieved 17 July 2018 from <https://www.sundaystandard.info/government-subvention-to-private-colleges-threatening-biust-and-ub-a-rebuttal%E2%94%ACa/>
- Lawyer, B. N. (2019). Curricula implementation in the 21st century classroom: Dynamics and challenges for Cameroon education sector. *International Journal of Humanities Social Sciences and Education (IJHSSE)*, 6(8), 142–152. <https://doi.org/10.20431/23490381060813>
- Luo, Y. (2016). Gender and job satisfaction in urban China: The role of individual, family, and job characteristics. *Social Indicators Research*, 125(1), 289–309. <https://doi.org/10.1007/s11205-014-0837-x>
- Maani, J. S. (2010). Analysis of societies’ expectations of the 21st century universities: Kyambogo University as a case study. A paper presented at the 4th University Exhibition held at Lugogo, UMA Show Grounds, Uganda
- MacDonald, A., Barton, G., Baguley, M., & Hartwig, K. (2016). Teachers’ curriculum stories: Perceptions and preparedness to enact change. *Educational Philosophy and Theory*, 48(13), 1336–1351. <https://doi.org/10.1080/00131857.2016.1210496>
- Makambe, U. (2017). *Role of knowledge management enablers in facilitating knowledge management practices in selected private higher education institutions in Botswana*. PhD Dissertation, University of South Africa (UNISA), Pretoria. <http://hdl.handle.net/10500/23222>
- Mbuya, T. (2017a). The decline and fall of higher education in Botswana, Part I: The curse of commercialization. *Mmegi online*, 13 May [online article]. Retrieved 5 September 2018 from <https://www.mmegi.bw/features/the-decline-and-fall-of-higher-education-in-botswana-the-curse-of-commercialisation-part-i/news>
- Mbuya, T. (2017b). The decline and fall of higher education in Botswana, Part II: Quality assurance authorities complicit. *Mmegi online*, 20 May [online article]. Retrieved 5 September 2018 from <https://www.mmegi.bw/features/the-decline-and-fall-of-higher-education-in-botswana-quality-assurance-authorities-complicit-part-ii/news>
- Miller, D. L., & Karakowsky, L. (2005). Gender influence as impediment to knowledge sharing: When men and women fail to seek peer feedback. *Journal of Social Psychology*, 139(2), 101–118. <https://doi.org/10.3200/JRPL.139.2.101-118>
- Ng, T. W. H., & Feldman, D. C. (2009). How broadly does education contribute to job performance? *Personnel Psychology*, 62(1), 89–134. DOI:<https://doi.org/10.1111/j17446570200801130x>

- Ng, T. W. H., & Feldman, D. C. (2010). Organizational tenure and job performance. *Journal of Management*, 36(5), 1220–1250. <https://doi.org/10.1177/0149206309359809>
- Obasi, I. N. (2007). A policy shift in Botswana's higher education landscape. *International Higher Education*, 46, 20–21. <https://doi.org/10.6017/ihe.2007.46.7935>
- OECD (Organisation for Economic Co-operation and Development). (2018). *The future of education and skills, Education 2030: The future we want*. Working paper. Paris: OECD. Retrieved 11 April 2021 from [https://www.oecd.org/education/2030/E2030%20Position%20Paper%20\(05.04.2018\).pdf](https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf)
- OUP (Oxford University Press). (2022). Multicollinearity. In *Oxford English Dictionary* [online resource]. Oxford/: Oxford University Press/Lexico.com. Retrieved 11 January 2022 from <https://www.lexico.com/definition/multicollinearity>
- Ofem, O. M. E., Iyam, M. A., & Bassey, E. U. (2015). Teacher demographic variables and students' academic achievement in secondary schools home economics in Calabar educational zone of cross River State. *International Journal of Education Learning and Development*, 3(6), 36–47
- Ohide, A. D. F., & Mbogo, R. W. (2017). Demographic factors affecting teachers' job satisfaction and performance in Yei Town, South Sudan. *IRA-International Journal of Education & Multidisciplinary Studies*, 8(1), 142–148. <https://doi.org/10.21013/jemsv8n1p14>
- Ornstein, A. C., & Hunkins, F. P. (2014). *Curriculum: Foundations, principles and issues* (6th ed.). Boston, MA: Pearson Educational Inc
- Ornstein, A. C., & Hunkins, F. P. (2018). *Curricula: Foundations, principles and issues* (7th ed.). London: Pearson Education Ltd.
- Otaala, J., Maani, J. S., & Bakaira, G. G. (2013). Effectiveness of university teacher education curriculum on the secondary school teacher performance in Uganda: The case of Kyambogo University. *Journal of International Cooperation in Education*, 15(3), 95–112. <http://doi.org/10.15027/34867>
- Otanga, H., & Mange, D. (2014). Contribution of personal characteristics and school-context factors to job satisfaction among primary school teachers in Coast Province, Kenya. *International Journal of Education and Research*, 2(7), 24–25
- Parsons, M. (2015). Visual metaphors: Meaning, interpretation and culture. In M. Fleming, L. Bresler, & J. O'Toole (Eds.), *The Routledge international handbook of the arts and education* (pp. 68–75). London: Routledge
- RA (Research Advisors). (2006). *Sample size table* [online resource]. Plymouth, MA: Research Advisors. Retrieved 12 November 2016 from <http://research-advisors.com/index.php>
- Rowe, K. (2005). *Teaching reading: Report and recommendations*. National Inquiry into the Teaching of Literacy. Canberra, ACT: Department of Education, Science and Training/Australian Council for Educational Research. Retrieved 19 January 2022 from https://research.acer.edu.au/tll_misc/5
- Rudhumbu, N. (2018). *A model for effective curriculum implementation in accredited private higher education institutions in Botswana*. Doctoral thesis. University of South Africa, College of Education. Available at http://uir.unisa.ac.za/bitstream/handle/10500/25436/thesis_rudhumbu_n.pdf?isAllowed=y&sequence=1
- Samboma, T. A. (2017). Regulation of tertiary education institutions in Botswana: Issues and options. *Advances in Social Sciences Research Journal*, 4(6), 115–123. <https://doi.org/10.14738/assrj.46.2786>
- Setume, G. (2013). *The role of tertiary institutions in financing their operations*. Gaborone: Tertiary Education Council. Retrieved 17 July 2018 from <http://www.tec.org.bw/tec-documents>
- Shah, M., & Nair, C. S. (2013). Private for-profit higher education in Australia: Widening access, participation and opportunities for public-private collaboration. *Higher Education Research and Development*, 32(5), 820–832. <https://doi.org/10.1080/07294360.2013.777030>
- Simmonds, S. (2017). Teachers as curriculum leaders: Towards promoting gender equity as a democratic ideal. *Educational Research for Social Change*, 6(2), 16–28. <https://doi.org/10.17159/22214070/2017/v6i2a2>
- Siphambe, H. (2012). The challenges of financing tertiary education in Africa: The case of Botswana. Paper presented 18 March at the Tertiary Education Conference, held in Gaborone, Botswana
- Spreen, C. A., & Knapczyk, J. J. (2017). Measuring quality beyond test scores: The impact of regional context on curriculum implementation (in northern Uganda). *FIRE: Forum for International Research in Education*, 4(1), 1–31
- Srivastava, G., & National Council of Educational Research and Training (NCERT). (2017). Gender issues in education [online paper, 27 pp.]. New Delhi: Department of Gender Studies., Retrieved 12 December 2019 from http://www.ncert.nic.in/departments/nie/dse/activities/advisory_board/PDF/Genderconcerns.pdf

- Taguma, M., & Barrera, F. (2019). *Draft change management: Facilitating and hindering factors of curriculum implementation*. 9th Informal Working Group (IWG) Meeting 22–24 May, Vancouver, BC, Canada. DU/EDPC/RD(2019)24. Paris: OECD
- TEC (Tertiary Education Council). (2013). *Registered institutions*. Gaborone: TEC. Retrieved 13 October 2015 from www.tec.org.bw/tec-institutions
- Registered institutions*. TEC, & Gaborone (2015). : TEC. Retrieved 13 October 2015 from www.tec.org.bw/tec-institutions
- Tillou, L., & Liarte, S. (2008). *Accumulation or diversity? Bridging individual experience factors and performance*. Paper presented at the 9th International conference on Human resource development research and practice across Europe, held in Lille 21–23 May. Retrieved 25 November 2021 from https://www.ufhrd.co.uk/wordpress/wp-content/uploads/2008/06/136accumulation-or-diversity_tillou.pdf
- Tsevi, L. (2014). Private higher education's quality assurance in Ghana. *International Higher Education*, 75, 22–24. <https://doi.org/10.6017/ihe.2014.75.5437>
- UK Essays. (2018). Analysis of the ecological systems theory [online resource]. Nottingham: UK Essays. Retrieved 25 May 2021 from <https://www.ukessays.com/essays/psychology/analysis-ecological-systems-theory-2940.php>
- Vold, E. T. (2017). Qualifying foreign language teachers: Is teacher training enough? *International Journal of Educational Research*, 82, 40–43. <https://doi.org/10.1016/j.ijer.2016.12.002>
- Wiles, J. W., & Bondi, J. C. (2014). *Curriculum development: A guide to practice* (9th ed.). Boston, MA: Pearson
- Yang, X. (2013). Research on high school students' everyday life in the new curriculum reforms implementation progress in China. *Creative Education*, 4(12), 93–99. <https://doi.org/10.4236/ce.2013.412A2014>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Norman Rudhumbu has over 30 years of experience in teaching, management, research and community service in schools, colleges and universities. He has acted in the capacities of School Head, Principal Lecturer, Head of Department, Assistant Dean and Executive Dean. He holds the following academic and professional qualifications: PhD, DEd, MPhil, MSc, MBA, MEd, BEd and DipEd. Norman has published 35 papers in peer-reviewed journals and presented at seven regional and international conferences. He has authored one business management textbook and nine mathematics textbooks, a number of which have been prescribed for use in schools in Botswana. His three main research interests are: critical studies in curriculum and pedagogy; learning, schools and innovations; and teaching and teacher education.

Elize du Plessis holds a DED and has 30 years' experience in distance teaching. She is a full professor in the Department of Curriculum and Instructional studies at the University of South Africa (UNISA) and is also involved in curriculum development in its School of Teacher Education. Her field of specialisation is curriculum development, teaching and learning and distance education. Elize is currently the programme coordinator of the Post Graduate Certificate in Education programme (Senior Phase and Further Education and Training). She is an experienced developer of course material for student teachers. She has made contributions to several books and a variety of journals, and presented papers at both national and international conferences. Elize is also a national and international reviewer for several academic journals and acts as supervisor for MEd and DED students.