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## Understanding teacher concerns in the Uganda lower secondary curriculum review through the lens of the Concerns-Based Adoption Model

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### Abstract

Teachers have been recognized as a fundamental condition for successful educational change. However, teacher engagement in educational change is still wanting locally and globally. This is evident in the recent implementation of the Uganda competence-based lower secondary curriculum. This study explored the concerns of secondary school teachers tasked with the implementation of this curriculum in Uganda and thus aimed to examine: the trends in teacher concerns, and the relationships between teacher concerns and their demographic characteristics. Teacher concerns were analyzed through the lens of the Concerns Based Adoption Model. The study took a positivist approach, employing quantitative methods to collect and analyze data. 387 secondary school teachers were selected using cluster random sampling from forty secondary schools within the central sub-region of Uganda. A structured questionnaire, comprising a demographic section and the Stages of Concerns Questionnaire which is one of the diagnostic tools of the Concerns Based Adoption Model, was administered to research participants. Analysis of data was both descriptive and inferential. The group profile of the participants was found to be a non-user concerns profile with intense concerns at personal, unconcerned, and informational stages respectively. A tailing up of refocusing concerns indicated a degree of resistance to the reviewed curriculum. Linear regression revealed that demographic characteristics predicted 2% of teacher concerns. Qualification and subject group taught were found to impact teacher concerns significantly while gender and experience were found to have

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no significant impact on teacher concerns. The study therefore concluded that a significant proportion of Ugandan secondary school teachers are yet to fully embrace the new curriculum at a personal and professional level. Based on this, the study recommended that policy makers at the Ministry of Education and Sports together with its statutory bodies like the NCDC and school leaders consistently track teacher concerns. In-service teacher refresher training also ought to be tailored to the specific concerns voiced by the teachers regarding their implementation of the curriculum.

**Key words:** *Teachers, Concerns, Concerns Based Adoption Model, Uganda lower secondary curriculum, Curriculum implementation*

## 1.0 Introduction

Teachers are central to the success of educational endeavors the world over. The Education 2030 Incheon declaration recognized teachers and educators as a “fundamental condition for guaranteeing quality education” (UNESCO, 2016: 54). As such, the declaration pledged to work towards providing teachers with a platform through which their technical expertise within the classroom and school could be leveraged during educational policy formulation, planning, implementation, and monitoring. The Organisation for Economic Cooperation and Development lent weight to this assertion by underscoring the fundamental role of teachers as enactors and mediators of educational policy (Gouëdard et al., 2020).

Whereas a cognizance of the centrality of the teacher in achievement of quality education is not in question, the practical realities of engaging teachers in educational policy-making and implementation present a formidable challenge to national policy-makers globally. To begin with, the corpus of teachers within any given country often comprises hundreds of thousands of individuals with diverse competences, personal dispositions, and experience. This challenge is greatly magnified during seasons of educational change exemplified by curriculum reform.

Curriculum reform entails all efforts made to review the what, how, and why of teaching and learning with a view to improving and updating the outcomes of the educational system (Fleisch et al., 2019; Gouëdard et al., 2020; Mondal et al., 2021). Scholarship has variously argued for the involvement of teachers at all stages of curriculum reform given their technical expertise within the school and classroom (Alsubaie, 2016; Cunningham, 2018; Fleisch et al., 2019; Mondal et al., 2021). Indeed, Verger et al. (2013) made the assertion that when it comes to educational reform, teachers are the only input that matters. Mondal et al (2021) delineated the teacher’s role in curriculum reform as that of: social reform, moulding the curriculum to student needs, implementation of the reform, and evaluation of the curriculum. Unfortunately, in many cases globally, as in Uganda, curriculum reform is a top-down process and teacher involvement is relegated to that of implementation. Nonetheless, teacher commitment to the reform process must be engendered (Fullan, 2015; Hall & Hord, 2015). Fullan (2015) asserted that educational change can only be considered successful when it reflects at the classroom level which is primarily the teacher’s domain. Thus, it is worthwhile for educational leaders and policy makers to monitor

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teachers' individual progress through a curriculum reform process. Barring this, it may be difficult to monitor and facilitate the process of educational change.

The Concerns-Based Adoption Model (CBAM) presents a useful tool for measuring the progression of teacher concerns as they implement an educational change. Developed by the Research and Development Center for Teacher Education (R&DCTE) at the University of Texas, Austin, this model postulates that the concerns of teachers follow a developmental pattern as they implement an educational innovation. This paper presents findings from a study that analysed the concerns of Ugandan secondary school teachers regarding the recently-implemented competence-based lower secondary curriculum using the CBAM. The study was conducted between November 2022 and March 2023, which was within the third year of implementation of this curriculum. Answers to the following research questions were sought:

- i. What is the trend in Ugandan secondary school teachers' concerns about the implementation of the LSC?
- ii. To what extent do the four demographic groups of gender, qualification levels, experience levels, and subject groups predict teacher concerns about the LSC?
- iii. What are the relationships between teacher concerns and their demographic characteristics?

## **2.0 Literature review**

### ***2.1 The Uganda lower secondary curriculum reform***

The Uganda Government White Paper on Education of 1992, which is the foundational policy document that guides the education sector to date, emphasised the need for periodic reviews of the curriculum at all levels of education in Uganda (Ministry of Education and Sports, 1992; Museveni, 2020). Consequently, the Ministry of Education and Sports (MoES) in partnership with a team from the World Bank undertook to conduct a review of the lower secondary curriculum which had remained largely unchanged since early post-colonial times. The Curriculum, Assessment, and Examinations (CURASSE) report found that the lower secondary curriculum, among others, was greatly overloaded, utilised obsolete teaching methods, and catered to a minority elite group of students (Clegg et al., 2007). This prompted a review of the lower secondary curriculum spearheaded by the National Curriculum Development Centre (NCDC), one of the statutory organs of the MoES.

This secondary school curriculum review was preceded by a 2007 review of the primary school curriculum. Scholars who have evaluated the latter are largely of the view that it has been of limited success (Altinyelken, 2010; Cunningham, 2018; Fleisch et al., 2019). Key challenges that were pointed out included: inadequate and low-quality teacher training, insufficient financial and instructional resources, irregular and ineffective school inspections (Altinyelken, 2010;

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Cunningham, 2018); and a mismatch between realities on the ground and political ambitions (Fleisch et al., 2019). Notably, Altinyelken documented numerous teacher concerns regarding the thematic curriculum including: doubts about how beneficial it was going to be, large classes, low morale among teachers, and the introduction of the classroom teacher system.

Over a decade later, only 33% of primary school leavers have been found to attain grade two literacy levels (Cunningham, 2018; Uwezo Uganda, 2019). A number of remedies have been floated, including improving teacher training and recruitment, and increasing allotment of resources (Tumushabe & Makaaru, 2013; Uwezo Uganda, 2019). However, there is little scholarship on the concerns of teachers regarding curriculum implementation yet they are at the heart of the entire process. While causality may not be claimed between teacher concerns and poor curriculum implementation, scholarship has demonstrated that addressing teacher concerns can lead to significant gains in curriculum reform efforts (Fullan, 2015; Hall & Hord, 2015). This study therefore sought to investigate the concerns of Ugandan secondary school teachers regarding this most recent curriculum review attempt.

## **2.2 Teacher concerns**

A concern is a state of preoccupation with a particular issue due to a direct connection with it. Hall, George and Rutherford (1979 as cited in Hall & Hord, 2015, p. 85) elaborated that concerns comprise “the mental activity composed of questioning, analysing, and re-analysing, considering alternative actions and reactions, and anticipating consequences”. Concerns often arise from the confluence of a new stimulus, personal knowledge and experience, and individual temperament or disposition. They affect one’s responses and behaviour towards the situation that triggered it and are shaped by one’s perceptions (George et al., 2006; Hall & Hord, 2015).

The concerns of teachers tasked with the implementation of an educational change such as a curriculum reform are a critical aspect of the change process. This is because concerns may either advance a reform effort or hinder it due to their very nature (Hall & Hord, 2015). The influence of teacher concerns on behaviour was first demonstrated by Frances Fuller, resulting in the development of Fuller’s concerns theory. Working with teacher trainees, Fuller showed that teacher training courses could only be effective if the concerns of the student teachers at the time when they had them, were integrated into the program (Fuller et al., 1974). Consequently, Fuller advanced four stages of personalised development: unrelated, self, task, and impact upon which the seven stages of concern elaborated by the CBAM were developed.

## **2.3 The Concerns Based Adoption Model**

The Concerns Based Adoption Model (CBAM) was developed by Hall, Wallace, and Dossett in 1973 (George et al., 2013). The model, shown in Figure 1, provides an understanding of the

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behavioural and affective forces undergirding the implementation of an educational change. It demonstrates that the success of an educational change does not merely rely on the availability of resources and presence of implementers. Instead, change facilitators must acknowledge the myriad factors that determine how well the change implementors utilise the resources to bring an educational change, in this case the Uganda lower secondary curriculum (LSC), to fruition.

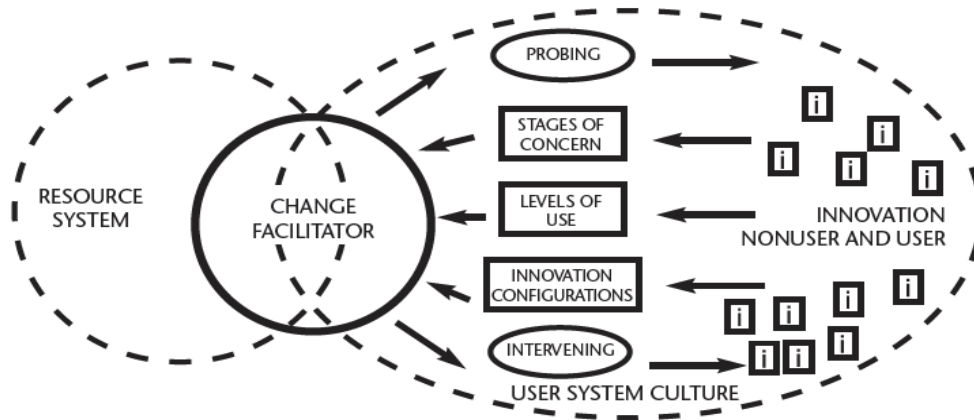


Figure 1: The Concerns-based Adoption Model (George et al, 2006, p.1)

The CBAM is based on five assumptions:

- i. Change is a process rather than an event.
- ii. Each teacher experiences change in a unique, personal way.
- iii. A genuine understanding of the process of change can only be achieved through understanding what individual change implementers go through as they experience the change.
- iv. For each teacher, change takes a developmental trend, both affectively (feelings towards the curriculum) and behaviourally (skill in using the curriculum).
- v. The management and implementation of the change process can be facilitated by continuously gathering information about it. (Hord et al., 2013)

According to the model, the factors are: their concerns about the usage of the innovation, as revealed through the Stages of Concerns profiles, their levels of fidelity to the innovation as well as their expertise in implementing it as determined through the Levels of Use tool, and the different ways in which users implement the innovation which is assessed using the Innovation Configurations tool (Hall & Hord, 2015). The model therefore allows the change facilitator to probe these different issues and devise interventions that will support the users to better implement the educational change. The CBAM utilises three diagnostic tools to provide information about

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how change implementers experience the change process: the stages of concerns questionnaire, the levels of use interview protocol, and the innovations configuration tool.

The CBAM builds upon Fuller's concerns theory of 1969 by elaborating seven stages through which, it postulates, teachers pass as they engage with an educational change: unconcerned, informational, personal, management, consequence, collaboration, and refocusing (George et al., 2006). Table 1 below shows the typical expressions of concern that teachers typically have at each stage.

**Table 1: Typical expressions of concern about an innovation** (George et al., 2013, p. 4)

Stages of Concern		Expressions of Concern
Impact	6 (Refocusing)	I have some ideas about something that would work even better.
	5 (Collaboration)	I would like to coordinate my effort with others, to maximise the innovation's effect
	4 (Consequence)	How is my use affecting my students?
Task	3 (Management)	I seem to be spending all my time getting materials ready.
Self	2 (Personal)	How will using it affect me?
	1 (Informational)	I would like to know more about it.
Unconcerned	0 (Unconcerned)	I am not concerned about it.

The CBAM has been widely used in studies of curriculum change across the world. In most cases, researchers have used the stages of concerns questionnaire (Apau, 2021; Gudyanga & Jita, 2018; Kayaduman & Delialioglu, 2016; Sarfo et al., 2020; Tafai, 2017; Yan & Deng, 2019). In fewer studies it has been paired with the levels of use interview tool (Isbell, 2013; Roofe-Bowen, 2007). Very few studies have utilized the innovations configuration tool and even fewer have used the CBAM toolkit in its entirety (Gundy & Berger, 2016). George et al (2013) documented studies that have utilised the CBAM to assess concerns of change implementers between 1987 and 2006. Notably, a vast majority of these studies were based in Europe and America with just a handful in Asia. While more studies have recently been conducted in Africa using the CBAM, these are concentrated in the Southern and Western regions of Africa (Apau, 2021; Gudyanga & Jita, 2018; Oguoma et al., 2019; Sarfo et al., 2020; Tafai, 2017; Zindi, 2018). There is a scarcity of studies on

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teacher concerns as measured using the tools of the CBAM within the East African region. This study sought to fill that gap.

### **2.4 Interaction of teacher demographics and teacher concerns**

Fuller's concerns theory linked the concerns of student teachers with their personal experiences (Fuller et al., 1974; Hall & Hord, 2015). Research has been conducted in different countries to investigate relationships between the concerns teachers express during educational change and their demographic characteristics including: age, gender, teaching experience, qualifications, training, and teaching subjects (Kayaduman & Delialioglu, 2016; Lo, 2018; Peskova et al., 2019; Sarfo et al., 2020; Yan & Deng, 2019). Findings from these studies seem to vary by context and the educational change under investigation. Table 2 below shows the variations in findings of selected studies. Despite the apparent disagreement in literature on the importance of different demographic characteristics in determining teacher concerns, it shall be enlightening for Ugandan educational policy makers and change implementers to understand the interactions between these variables as revealed in this study. The characteristics considered in this study were: gender, teaching experience (years), level of academic qualification, and subject groups taught.

**Table 2: Findings of the statistical significance of differences in teacher concerns among different demographic groups as reported in a selection of studies**

Demographic characteristic	Finding	
	Significant differences	No Significant differences
Gender	Centikaya (2012); Sarfo et al. (2020)	Apau (2021); Ancheta & Lasaten (2017)
Age	Apau (2021); Ancheta & Lasaten (2017); Yan & Deng (2019); Lo (2018)	
Experience	Apau (2021); Ancheta & Lasaten (2017); Yan & Deng (2019)	Centikaya (2012); Lo (2018); Sarfo et al. (2020)
Qualifications	Centikaya (2012); Apau (2021); Lo (2018)	

*Note:* All studies used the SoCQ to produce data on teacher concerns.

## **3.0 Materials and methods**

### **3.1 Study population and sample**

The target population for this study was the secondary school teachers in Uganda. According to the Uganda Bureau of Standards, there were 114,859 secondary school teachers (Ministry of

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Education and Sports, 2020). The accessible population were teachers in selected secondary schools in the Central sub-region of Uganda. This study focused on government secondary schools since these received direct support from the Government of Uganda as stipulated by the Education Act of 2008 (Education Act Uganda, 2008). Thus, it was assumed that they were relatively prioritised in facilitation to implement this curriculum in terms of human resource, training, and instructional materials. The sampling frame thus comprised all 267 government secondary schools in the Central sub-region.

Cluster sampling was used in which schools were randomly selected from the sampling frame then all the teachers present at the school on the day of the study visit were invited to participate in the survey. Krejcie and Morgan (1960) as cited in Cohen et al. (2018, p. 205) guided that as the population increases, the sample size often stabilises at around 384 cases. Therefore, providing for a confidence level of 95% and a 5% margin of error, a sample size of 387 was utilised. Given that at a single visit, every sample school had an average of 10 teachers present, this led to a sampling of 40 schools. Table 3 shows the distribution of the sample by demographic characteristics of gender, teaching experience, qualification, and subject group taught.

**Table 3: Demographic characteristics of respondents (Field data, 2023)**

Demographic variable		Count (N= 387)	%
Gender	Male	232	59.9%
	Female	155	40.1%
Qualification	Certificate	3	0.8%
	Diploma	43	11.1%
	Bachelor's degree	281	72.6%
	Masters	60	15.5%
Experience	0-5 years	76	19.6%
	6-10 years	93	24.0%
	11-15 years	112	28.9%
	Over 15 years	106	27.4%
Subject Group	Humanities, Business and Languages	157	40.6%
	Math and Sciences	141	36.4%
	Vocational and Arts	89	23.0%

### 3.2 Instrumentation

The study utilised the Stages of Concerns Questionnaire which was developed by the Research and Development Center for Teacher Education at the University of Texas in 1973 and revised and modified under the Southwest Educational Development Laboratory (SEDL) (George et al.,

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2013). This 35-item questionnaire assesses the concerns of individuals who are involved with a new innovation. It contains five statements for each stage of concern. The respondents are provided with a seven-point Likert scale on which they mark how true they felt the statement resonated with them at the time as they implemented the competence-based curriculum. A score of 0 indicated that the respondent felt the statement “irrelevant” at the time, a score of 1 or 2 indicated that the respondent felt the statement is “not true of me now”, while 3, 4, or 5 indicated that the statement was “somewhat true of me now”, and a score of 6 or 7 indicated that the respondent felt the statement to be “very true of me now” (George et al., 2013).

The SoCQ was tested for reliability, internal consistency, and validity and was found to have strong test/retest reliability ranging from .65 to .86, and a high internal consistency with alpha ranging from .66 to .83 (Hall & Hord, 2015, p. 93). In order to maintain this validity and reliability, the SoCQ was used as is and only the word innovation was replaced with “competence-based curriculum” in order to contextualize it to the Ugandan LSC (George et al., 2013). A demographic section was also added at the beginning of the questionnaire.

### **3.3 Data collection**

After piloting, the questionnaire was physically administered to and collected from participants in all the sample schools by the researchers. This was done in order to increase the response rate and also to provide guidance to respondents in order to minimise errors due to miscomprehension of scale items including: instructional, sentinel, and lexical errors (Saunders et al., 2019). Each sample school was visited only once.

### **3.4 Data analysis**

The data from 387 respondents was analysed descriptively and inferentially using IBM Statistical Packages for Social Sciences (SPSS) version 27. First every questionnaire was scored by summing up the raw scores for each stage using the SoC quick scoring device provided by the SEDL (George et al., 2013). Wherever an item was not scored by the respondent, a score of 0 was given to that item. The total score for each stage of concern then calculated and the corresponding percentile score obtained from the quick scoring device. The highest percentile score for each individual was taken to be their most intense concern and this was used in multiple regression analysis to determine the combined impact of the demographic characteristics on teacher concerns. Inferential statistics were used to determine differences in teacher concerns within and between the four groups as shown in table 3.

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**Table 4: Statistical procedures employed to answer the research questions**

Research question	Type of statistics	Tests used
1. What is the trend in Ugandan secondary school teachers' concerns about the implementation of the LSC?	Descriptive	Means, frequencies
2. To what extent do the four demographic groups of gender, qualification levels, experience levels, and subject groups predict teacher concerns about the LSC?	Inferential	Multiple linear regression
3. What are the relationships between teacher concerns and their demographic characteristics?	Inferential	One-way ANOVA, MANOVA,

## 4.0 Results and discussion

### 4.1 Trends in teacher concerns about the implementation of the LSC

The raw scores of teacher concerns for the entire sample group were averaged and the corresponding percentile scores obtained from the quick scoring device provided in the SoCQ manual (George et al, 2013). The results are shown in table 4. This yielded a typical non-user group profile as shown in figure 2. A non-user concerns profile is characterised by intense concerns in stages 0, 1, and 2 (George et al, 2013). The highest stage of concern for the group was at stage 2 (personal) followed by stage 0 (unconcerned) and stage 1 (informational).

**Table 5: The mean raw scores and corresponding percentile score of the group stages of concern. (Field data, 2023)**

	MEAN RAW SCORE	PERCENTILE SCORE (%)
Unconcerned	14	81
Informational	22	80
Personal	24	83
Management	20	77
Consequences	26	59
Collaboration	25	68
Refocusing	22	73

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This means that teachers seemed to be intensely concerned about the perceived impact of the curriculum reform on them in terms of increase in work load vis a vis remuneration, job security, and general uncertainty about their role in the reviewed curriculum. It is of note that stage 0 concerns were also quite high, indicating that many teachers were preoccupied with other activities and responsibilities besides the LSC. It also revealed high levels of disinterest

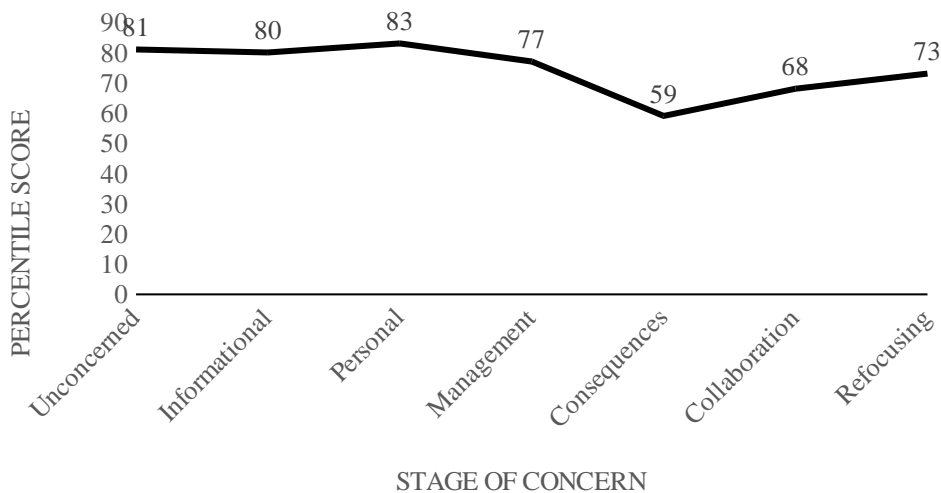


Figure 2: Group concerns profile showing trend of teacher concerns (Authors, 2023)

with the reviewed curriculum. The teachers exhibited the least intense concerns at stage 4 (consequences), an indication that few teachers were actively considering the impact of the LSC on student learning. The tailing up of stage 6 (refocusing) concerns hinted at some degree of resistance against the new curriculum (George et al, 2013).

While this is not unusual for an educational change in its first three years of implementation (George et al., 2013; Hall & Hord, 2015), it is a matter of concern. The intensity of personal concerns reveals challenges with teacher motivation. Moreover, this combination of high personal concerns and tailing up of refocusing concerns is an indicator of some resistance to the LSC (Hall & Hord, 2015). This resistance may be as a result of limited understanding or acceptance of the LSC due to inadequate training, limited resources which make it difficult to implement the curriculum, or even strong ideas about alternative pathways for the curriculum review. These are issues that have frustrated previous curriculum reform efforts in Uganda (Altinyelken, 2010;

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Cunningham, 2018) and other sub-Saharan African countries (Diffang, 2019; Fleisch et al., 2019; Isaboke et al., 2021; Komba & Mwandaji, 2015; Nsengimana, 2021).

This curriculum review comes at a time in which disparity in remuneration between arts and science teachers of at least 300% has been instituted by the Government of Uganda (Wambede et al., 2022). Thus, with the increased workload that accompanies the reviewed LSC, it is unsurprising that teachers are primarily concerned about its impact on their roles, finances, and professional lives. Such educational reforms that do not seem to seriously take into account the working conditions, personal and professional needs of teachers often result in widespread disenfranchisement of the teaching fraternity and may adversely affect the curriculum implementation and curtail its goals (Baguma, 2023; Sajitha et al., 2018; Verger et al., 2013).

#### 4.2 Effect of demographic characteristics on teacher concerns

Multiple linear regression was conducted to determine the extent to which the demographic characteristics of gender, qualification, experience, and subject group predicted the teachers' highest concerns. Analysis revealed that these factors predicted 2% of the teachers' highest concerns, meaning that at least 98% of teacher concerns could be explained by other factors. This finding agreed with that of Apau (2021) who found that, in the implementation of the standard-based curriculum in Ghana, teacher demographic characteristics only contributed 4% to the concerns of the teachers. Nonetheless, considering the significance of the reviewed LSC to national socio-economic goals, it was worthwhile to investigate the impact of these demographic characteristics on teacher concerns and their subsequent implementation of the LSC. The regression model is shown in table 6.

**Table 6: Regression model for teacher gender, qualification, experience, and subject group against their highest concerns**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate	Change statistics				
					R <sup>2</sup> change	F change	df1	df2	Sig. F change
1	.175	0.030	0.020	2.109	0.030	3.003	4	382	.018

Note: p < .05

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Further analysis showed that of the four variables, the qualification of the teacher ( $\beta = -.484$ ,  $t = -2.405$ ,  $p = .017$ ) and their teaching subject group ( $\beta = -.301$ ,  $t = -2.167$ ,  $p = .031$ ) carried a significant negative impact on their highest concerns. Gender and experience had no significant impact on the teachers' highest concerns as shown in the table 6. Thus, there was no difference in concerns about the curriculum between male and female teachers in agreement with Ancheta and Lasaten (2017), and Apau (2021). Likewise, no differences were found in concerns among teachers with different number of years spent in the teaching profession just as was concluded by Lo (2018 and Sarfo et al. (2020).

**Table 7: The relative impact of teacher demographic characteristics on their highest concerns (HC)**

Regression weights	Beta Coefficient	Adjusted R <sup>2</sup>	F	t-value	p-value	Comment
Gender → HC	-.166	.020	3.003	-.755	.451	No significant impact
Qual → HC	-.484			-2.405	.017	Significant impact
Exp → HC	.047			.465	.642	No significant impact
Subj gp → HC	-.301			-2.167	.031	Significant impact

Note:  $p < .05$

#### 4.3 Relationships between teacher concerns and their demographic characteristics

One-way MANOVA tests were conducted to determine the differences in teacher concerns within qualification level and subject group taught since these two demographic characteristics carried significant predictive power over teacher concerns. Prior to this, the data was assessed for multivariate outliers using Mahalanobis distance test. Consequently, seven multivariate outliers, in which  $p > .001$ , were identified and removed. The assumption of no multicollinearity was also satisfied by assessing correlations among the stages of concerns; none of the variables correlated at a level of 0.90 or higher (Harlow & Duerr, 2013).

For the qualification levels, the assumption of homogeneity of variance and covariance was found to be tenable based on the results of Box's test  $M = 83.122$ ,  $F(56, 46689.006) = 1.406$ ,  $p > .001$ . Homogeneity of variance across the groups was also tested using Levene's test and it was found to be tenable for the stages: unconcerned ( $F(3, 383) = 2.097$ ,  $p = .100$ ), personal ( $F(3, 383) = 0.532$ ,  $p = .661$ ), management ( $F(3, 383) = 1.294$ ,  $p = .276$ ), and consequence ( $F(3, 383) = 2.371$ ,  $p = .070$ ). However, it was untenable for the stages: informational ( $F(3, 383) = 3.374$ ,  $p = .019$ ), collaboration ( $F(3, 383) = 4.671$ ,  $p = .003$ ), and refocusing ( $F(3, 383) = 4.207$ ,  $p = .006$ ). Hence, Pillai's trace was evaluated for the F-test since it is more robust to violations (Harlow & Duerr, 2013). For the subject groups, the assumption of homogeneity of variance and covariance was also satisfied (Box's test

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M= 49.940,  $F(56, 266462) = .867$ ,  $p = .750$ ) and Levene's test was nonsignificant across all the stages of concern.

#### **4.4 Differences in teacher concerns by qualification**

A one-way MANOVA was conducted to determine whether there were significant differences in teacher concerns among four levels of qualification: certificate, diploma, bachelors degree, and masters degree. Results indicated that there were statistically significant differences in teacher concerns across the four qualification levels (Pillai's Trace = .128,  $F(21,1116) = 2.363$ ,  $p = .000507$ ,  $\eta^2 = .043$ ).

Follow-up ANOVAs were conducted and the univariate tests revealed that the teacher concerns at the unconcerned ( $F(3,376) = 8.196$ ,  $p < .001$ , partial  $\eta^2 = .061$ ), informational  $F(3,376) = 2.801$ ,  $p < .05$ , partial  $\eta^2 = .022$ ), personal ( $F(3,376) = 2.902$ ,  $p < .05$ , partial  $\eta^2 = .023$ ) and collaboration ( $F(3,376) = 4.290$ ,  $p = .005$ , partial  $\eta^2 = .033$ ) stages were significant. However, only differences at the unconcerned and collaboration levels were practically significant with effect sizes of .061 and .033 respectively. Concerns at the management, consequence, and refocusing stages were not significant.

Post hoc analysis using Tukeys HSD showed that at the unconcerned stage, there were significant differences between diploma (M= 9.44 , SD= 6.482 ), bachelors degree (M= 14.76 , SD= 8.102 ), and masters (M= 17.02 , SD= 7.743). This means that teachers with a diploma had markedly greater interest in and involvement with the LSC, while teachers at masters level had the least interest in and involvement with the LSC. At the collaboration stage there were significant differences between diploma (M= 27.70, SD= 5.401) and masters (M= 23.15, SD= 7.649). This indicates that teachers at the diploma level were much more open to working with other teachers in implementing the LSC compared to those at the masters level.

The results of MANOVA revealed significant differences in teacher concerns between diploma holders and the bachelor's and masters degree holders. Diploma holders seemed to be much more active and engaged with the curriculum, scoring low at the unconcerned stage and higher at the informational, consequence, and collaboration stages. It is likely that this is related to the mode of training which diploma holders undergo as opposed to bachelor's and masters degree holders. It is notable that since 2016, the Government of Uganda has partnered with Enabel to provide training to teacher trainees in all five diploma-awarding National Teacher Colleges across the country in the areas of: active teaching and learning and technology integration in teaching (Enabel, 2022). These pedagogical practices are strongly aligned to the competence-based LSC and hence may have better prepared diploma holders to implement the curriculum.

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#### ***4.5 Differences in teacher concerns by subject group***

Another one-way MANOVA was conducted to assess differences in the teachers' concerns by subject groups which they teach. Subject were grouped into three categories based on broad similarities in teaching content and approach such that they will often be placed in the same department in most Ugandan schools: humanities, business, and languages; math and sciences; and vocational and arts. The multivariate test of differences in teacher concerns among the subject groups was significant (Pillai's Trace= .081,  $F(14,744)=2.257$ ,  $p=.005$ , partial  $\eta^2=.041$ ). This indicated that subject groups had a medium effect on teacher concerns.

Tukey's HSD post hoc analysis to determine where differences lay revealed that at the unconcerned stage, revealed significant differences between the humanities, business, and languages group ( $M=12.80$ ,  $SD=8.244$ ) and the math and sciences ( $M=15.07$ ,  $SD=7.694$ ) and vocational and arts ( $M=16.67$ ,  $SD=7.460$ ) groups. This indicated that teachers in the humanities, business, and language group were relatively more engaged and involved with the LSC implementation as compared to those in the other two groups.

At the consequence stage, differences lay between the humanities, business, and languages group ( $M=27.25$ ,  $SD=5.281$ ) and the vocational and arts ( $M=24.95$ ,  $SD=5.028$ ) group; whereas at the collaboration stage, there were significant differences between the vocational and arts ( $M=23.23$ ,  $SD=6.143$ ) group and the humanities, business, and languages group ( $M=26.45$ ,  $SD=5.857$ ) and math and sciences ( $M=25.36$ ,  $SD=6.971$ ) groups. This was an indication that teachers in the humanities, business, and languages group were much more interested in the impact of the curriculum on the learning of their students and were also more open to working together with other teachers in the implementation of the LSC. In both consequence and collaboration stages, teachers in the vocational and arts group had the lowest means showing that they were less likely to have these impact concerns.

As far as subject groupings are concerned, Cuadra and Moreno (2005) noted that secondary school teachers often build their professional identities around their subject specializations. This was reflected in the significant differences in teacher concerns among the three subject groupings. It was shown that the humanities, business, and languages group seemed much more engaged in the curriculum than the math and sciences, and vocational and arts groups. The vocational and arts groups scored high on the unconcerned stage, and lowest on informational, personal, consequence, and collaboration stages. This means that this group of teachers seemed to be least preoccupied with the LSC, and its impact on themselves and their learners, and were least interested in engaging in collaborative relationships with fellow teachers. This concern was mirrored in the statement by the secretary general Uganda National Teachers Union (UNATU) who emphasised that vocational subjects in most schools were under-resourced, teachers inadequately trained, and guidelines about

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summative examinations were unclear (Baguma, 2023). This cloud of uncertainty could have contributed to the nature of concerns exhibited by vocational and arts teachers.

### 5.0 Conclusion and recommendations

This study was conducted within the central sub-region of Uganda which is the most socio-economically diverse of the regions in Uganda. Teachers working in different socio-economic settings including urban, semi-urban, and rural, as well as fully and partially-funded government schools were drafted into the study. Given that it is a common practice for teachers from Ugandan government schools to moonlight in private schools, the findings may be cautiously generalised to the greater teaching fraternity of Uganda.

The findings of this study underscore the emphasis of Fuller's concerns theory that teachers ought to be supported through change in a manner that is relevant to the concerns they have at present. The non-user group profile that was revealed by the SoCQ is an indication that even though Ugandan teachers are actively implementing the LSC, majority are yet to fully embrace it at a personal and professional level. It is therefore worthwhile for educational policy makers at the Ministry of Education and Sports together with its statutory bodies like the NCDC and school leaders to track teacher concerns frequently and consistently. Moreover, school leaders and NCDC trainers need to tailor their in-service teacher refresher training to the specific concerns voiced by the teachers regarding their implementation of the LSC. This will ensure that teachers are supported to overcome inhibiting concerns and transition to higher level impact concerns in order to reap dividends for the curriculum review and national socio-economic ambitions.

Demographic characteristics were found to predict only about 2% of teacher concerns in the implementation of the LSC. Minimal as this may seem, it is important to cater to any factor that may impact the implementation of the LSC lest it eventually become the straw that breaks the camel's back. There was some indication in this study that diploma level training programs seemed to be more effective in preparing teachers for the new curriculum. Therefore, training programs for pre-service teachers ought to undergo review too in order to align to the pedagogical demands of the new curriculum. Further investigations should be conducted into the efficacy of these training approaches as compared to those for bachelor's and masters degree levels. This study also revealed the need for school and national educational leaders to carefully attend to the needs of teachers at subject level. This was particularly evident for the vocational and arts group which seemed to be having intense self-concerns. Further research should be done into the critical issues and opportunities in implementation of the competence-based curriculum at subject level.

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### Conflict of Interest

The authors have no conflict to declare.

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