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A MODEL FOR PLANNING AND IMPLEMENTING CURRICULUM CHANGE IN PRIVATE HIGHER EDUCATION IN BOTSWANA

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ABSTRACT*: This paper examined the role of academic middle managers (AMMs) in the planning and implementation of curriculum change in private higher education institutions (PHEIs) in Botswana. Drawing from various sources of literature and theoretical underpinnings, the study described how AMMs enact their role in curriculum change. A quantitative approach that used a structured questionnaire for data collection was used in the study. Results of the study showed that AMMs face numerous challenges during curriculum change which have a negative impact on their role. These challenges include lack of authority, lack of detailed job descriptions, work overloads among others. Results further showed that the following variables namely curriculum leadership, AMM job requirements, AMMs role enablers, work experience, educational levels of AMMs are important predictors of effective AMMs role in the planning and implementation of curriculum change in PHEIs and hence need to be optimized. It was also shown that gender, age, department size do not have a significant effect on the effectiveness of AMMs in their role in curriculum change while level of education and years of experience have a significant effect. Based on the results, a model for enhancing the effectiveness of AMM role in the planning and implementation of curriculum change was proposed.*

KEYWORDS*:* Academic Middle Manager, Role, Curriculum, Curriculum Change, Demographic Characteristics, Planning, Implementing, Model.

INTRODUCTION

Change is viewed as a process through which people and organisations move as they gradually come to understand and become skilled and competent in the use of new ways (Ford & Ford, 2010; Pieterse, Caniëls & Homan, 2012). Fullan (2005) also views change as not just a process but rather as a complex interaction of various factors in society acting at different stages so that whatever transpires on one stage affects the activities of another. Given the above characteristics of change, curriculum change can therefore be referred to as a process rather than an event which links to a broader social context, and a process in which broader, deep-rooted questions about school and society, especially with regards to the nature of knowledge and which knowledge is useful, are addressed (Gilbert, 2011). As a result of this link between school and society, factors that are cultural, social, political, organisational and psychological, all in their own unique and/or collective way, help in enriching AMMs' understanding of curriculum change and the competing forces therein, as well as in defining the parameters within which they can make the planning and implementation of curriculum change successful (Smith, 2008).

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Defining curriculum change

The change literature attests to curriculum change often being a problematic process for middle managers and teachers because of its political, complex, contradictory and occasionally symbolic nature (Morgan & Xu, 2011). The multidimensional nature of curriculum change lends credence to the claim by Rosenmund (2006) cited in Benavot et al, 2007) that curriculum change cannot therefore, be seen as purely a planned technocratic reform to improve the productivity of the educational system but rather as a socio-political measure that reshapes relationships between individuals and institutions through the selection and organisation of school knowledge. Curriculum change is further viewed as an erratic and fortuitous process dominated by fads and pendulum-like swings from one ideology to another (Ravitch, 2004). Gilbert (2011) also argues that curriculum change is not a process limited to a time period but is an ongoing and necessary part of the routine practice of educational institutions. Curriculum change therefore is a process that involves changes in the educational systems, programme structures and objectives, leading to changes in approaches to teaching and learning as well as changes to students' learning outcomes (Chan and Luk, 2013; Seehorn, 2012).

The curriculum change process

The change literature shows that an effective curriculum change process should provide a means by which high quality learning takes place (Gruba, Moffat, Sondergaard & Zobel, 2010). In private higher education the curriculum change process follows the process defined by Ndou (2008) based on the following steps: need identification, mobilisation, implementation and institutionalisation.

Contextual levels mediating curriculum change

Owston (2007) provides three contextual levels that affect and mediate curriculum change namely the micro, meso and macro levels which AMMs can take advantage of when planning and implementing curriculum change. The micro level comprises factors such as classroom organisation and personal characteristics of the teachers and the learners. The meso level includes school, department organisational culture as well as the role of the AMMs and school administrators in curriculum change. The macro level encompasses the above two levels and is concerned with state and national policies and international trends which might influence curriculum change (Owston, 2007). These three contextual levels articulate the fact that curriculum change is a difficult and turbulent process for AMMs and requires adequate consultation, careful planning, adequate time, funding, support and opportunities for the involvement of multiple stakeholders.

The role of middle managers in curriculum change

Literature shows that the way the AMMs understand and hence enacts their role in curriculum change is framed by the nature of the activity, role expectation, role conflict and the demands of the role sender among others. According to Knight and Trowler (2001), as cited in Inman (2007), how AMMs enact this role within the framework constructed by their institution will eventually depend on the following factors: the nature of the activity as defined by the participant (academic middle manager); the community of practice in which the academic middle manager works; the identity of the individual academic middle manager (which is likely to be multiple, dynamic and situational); the meaning attributed to the academic middle manager's role; and the discourse in which the academic middle manager operates. This means

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that in the context of curriculum change, the way AMMs play their role depends on a number of factors both internal (related to the AMMs characteristics) and external (related to the situation in which the AMM enact their role).

The role of middle managers in most of the higher education institutions is further made very tenuous because from the beginning, when these managers assume their management role, Daniel (2009) argues that they must deal with strained financial resources that constrain their role in curriculum change; the demand for relevant programmes and curricula; external accountability pressures from government, parents, employers etc.; technological advances and their effect on curriculum change and education delivery; ill-equipped faculty who struggle to meet demands for higher education system and their students; diversity issues in departments; and imbalance of professional and personal duties (Daniel, 2009).

Curriculum change leadership

Curriculum change leadership is defined as a social influence process whereby intentional influence is exerted by one person or group over other people for the purpose of achieving organisational and curriculum goals (Brown, Rutherford & Boyle, 2000; Yukl, 2002). Two aspects of AMM role, namely that of school improvement and the improvement of teaching and learning have been viewed as being catalytic in necessitating the reconceptualisation of the AMM's role as a leadership role rather than a management role in curriculum change (Thrash, 2012). Fitzgerald and Gunter (2006) also support this reconceptualisation of the leadership role of AMMs by suggesting a paradigm shift from managerialism and management practices to leadership matters on pedagogy and pedagogic practices. This resonates with Jones, Lefoe, Harvey and Ryland's (2012) arguement that HE management has become complex and requires distributed leadership rather than hierarchical leadership.

The importance of collective leadership in the HE environment is also raised by a number of authorities who assert that for there to be effective leadership in HE, there is need for multiple individuals to share leadership by ensuring that people work collaboratively to promote connectedness (Grint & Holt, 2011; The King's Fund, 2012). Gosling, Bolden and Petrov (2009) also confirm the importance of distributed leadership in HE when they posit that it is an approach that embraces the notion of collegiality and autonomy of members rather than command, and hence is very important for the success of any type of change in HEIs.

Enablers of AMM role in curriculum change

Authorities in curriculum literature have identified a number of factors that enable successful implementation and management of curriculum change. Among some of the critical factors or enablers to the success of the curriculum change process are the following: adequacy of resources, availability of time, school ethos, professional support, professional adequacy, professional knowledge, professional attitude and interest, and participative leadership (Fullan, 2005; Hargreaves & Fink, 2006).

Challenges to effective AMM role in curriculum change

There are a number of factors that act as barriers to the successful planning and implementation of curriculum change by academic middle managers in higher education (Kgosana, 2006; Mafora & Phorabatho, 2013; Ndou, 2008). Such factors include: institutional factors, middle manager-related factors, teacher-related factors, physical resources-related factors, and

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financial factors (Geijsel, Sleegers, Leithwood & Jantzi, 2003; Hall & Hord, 2006; Rogan & Grayson, 2003).

Influence of biographic characteristics of AMMs role

Literature shows that the role of the AMMs in planning and implementation of curriculum change can be moderated by the following personal or demographic variables: age, gender, educational level, years of experience, and department size. Personal or biographic factors play an important role in how individuals interpret and participate in change (Mason, Aihara-Sasaki & Grace, 2013; Otanga & Mange, 2014). Previous studies by a number of authorities reveal that several factors that include age, gender, educational level, years of experience, stress level and department size may have some bearing on perception and participation of managers in a change process (Capella, Donsbach, Kremnitzer, Ross & Thorson, 2009; Mason et al., 2013; Sulksky & Smith, 2005). Some studies have also linked teacher age, educational level, gender and experience to curriculum adoption (Mason, Aihara-Sasaki & Grace, 2013; Otanga & Mange, 2014).

Influence of AMM job requirements on AMMs role

Middle manager role-related factors (job requirements) relate to both the political and technical dimensions of curriculum change (Morgan & Xu, 2011). The technical dimension asserts that knowledge and skills and their acquisition as well as classroom practice, are key to successful implementation of curriculum change. Middle managers not only mediate tensions between funding and curriculum change as a potential barrier to effective curriculum change but also filter competing messages from above and below, that are concerned with interpreting and translating curriculum policy (technical dimension) into practice (political dimension) (Wolverton, Ackerman & Holt, 2005). Such job requirements include AMMs having received adequate training, having adequate experience, having been given detailed job descriptions, being in possession of adequate knowledge and skills of planning and implementing curriculum change, and having authority over curriculum change issues (Graham and Benoit, 2004; de Lima, 2008; Bisbee, 2005; de Boer & Goedegebuure, 2009; Rasmussen, 2002; Smith & Winter-Living, 2009; Rouleau, 2005; Rouleau & Balogun, 2011).

METHODOLOGY

The study employed a quantitative approach which employed a structured questionnaire. A quantitative approach was adopted for this study after a careful examination of the nature, philosophy and focus of the study with the structured questionnaire being the primary instruments for data collection. The questionnaire was tested for internal consistency and content validity. A Cronbach alpha coefficient of .81 was calculated which meant that the questionnaire was reliable enough for the study. In terms of content validity, the questionnaire was subjected to expert opinion and comments from experts were encorporated into the final instrument. A sample of 162 AMMs was selected using stratified a random sampling procedure from a population of 280 AMMs in the 5 PHEIs. AMMs who were included in the study included Deans of faculty, Assistant Deans of faculty, Heads of Department, Assistant Heads of faculty, and Module Leaders. Descriptive and inferential statistics were used for analysing the quantitative data using SPSS version 21. Results of the study led to the development of a model for implementing curriculum change.

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FINDINGS AND DISCUSSION

Model for planning and implementing curriculum change

A regression model was applied to test the extent to which personal demographic data influenced AMMs' effective planning and implementation of curriculum change. The next section therefore presents findings of regression analysis.

The effect of moderating variables on the model for the Planning and Implementation of curriculum change in PHEIs

Table 1: Multi-collinearity among independent variables

Correlations							
		Age	Gender:	Highest Level of Education:	Work Experience	Number of staff Members	Planning and implementation of curriculum change
Age (in years):	Pearson Correlation	1	-.153	.222*	.671**	.399**	-.002
	Sig. (2-tailed)		.144	.027	.000	.000	.981
Gender:	Pearson Correlation		1	-.385**	-.160	-.251*	.336**
	Sig. (2-tailed)			.000	.130	.016	.001
Highest Level of Education:	Pearson Correlation			1	.344**	.276**	.174
	Sig. (2-tailed)				.001	.006	.092
Work Experience(in years	Pearson Correlation				1	.315**	.210*
	Sig. (2-tailed)					.002	.040
Number of staff Members	Pearson Correlation					1	-.149
	Sig. (2-tailed)						.143
PLANNING AND IMPLEMENTAION OF CURRICULUM CHANGE	Pearson Correlation						1
	Sig. (2-tailed)						
*. Correlation is significant at the 0.05 level (2-tailed).							

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Table 2: ANOVA of moderating variables

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.291[a]	.085	.025	11.46362

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	926.021	5	185.204	1.409	.231[a]
	Residual	9987.503	76	131.415		
	Total	10913.524	81			
b. Dependent Variable: Curriculum Planning and Implementation strategies						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.291	11.369		4.512	.000
	Gender:	.278	2.793	.012	.099	.921
	Highest Level of Education:	-.425	3.070	-.018	-.139	.890
	Work Experience(in years	3.442	1.357	.395	2.535	.013
	Age (in years):	-2.255	1.540	-.229	-1.464	.147
	Number of staff Members	-.263	.946	-.034	-.278	.781
a. Dependent Variable: Curriculum Planning and Implementation strategies						

As shown in Table 1, the coefficient of determination (R^2) is the measure of proportion of the variance of dependent variable about its mean that is explained by the independent or predictor variables. Higher value of R^2 represents greater explanatory power of the regression equation. The adjusted R^2 is .085 which meant that the study variables contributing to the effective planning of curriculum change in the PHEs is 8.5% and remaining 91.5% is attributed to other extraneous factors which are not part of this construct. ANOVA analysis on Table 2 sought to determine how much of the variance in the dependent variables was accounted for by the manipulation of independent variables and assessed at the level of significance (0.05) of the

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model. The results showed that the model is significant (F (5, 76) =1.4, p > .231. It was concluded that personal demographic information did not influence effective planning and implementation of curriculum change.

On Table 2, the coefficient showed the beta value of each of the construct indicators. The Beta value is a measure of how strong each of the indicators influences the criterion variable. The beta regression coefficient allowed for comparison of the independent variables and assessment of the strength of the relationship between the predictor variables and to the criterion variables. The beta value is measured in the units of standard deviation. The higher the beta value the greater the influence of the predictor variable on the criterion variable. In this study, it was observed that all demographic variables except work experience did not have any influence on the planning of curriculum change and implementation strategies.

The study used the General Linear Model (GLM) data to analyse the impact of moderators on the independent variables. The (GLM) tests results are shown on Table 39. From Table 3 it can be observed that none of the variables moderated the independent variables influence on the planning and implementation of curriculum change.

Table 2: GLM of Between-Subjects Effects

Dependent Variable: Curriculum Planning and Implementation strategies

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	9095.441[a]	59	154.160	1.865	.054
Intercept	92093.321	1	92093.321	1.114E3	.000
D1	760.450	4	190.112	2.300	.091
D2	2.454	1	2.454	.030	.865
D3	93.197	2	46.599	.564	.577
D4	316.003	4	79.001	.956	.451
D5	518.576	4	129.644	1.569	.218
D1 * D2	483.333	2	241.667	2.924	.075
D1 * D3	8.333	1	8.333	.101	.754
D1 * D4	196.000	1	196.000	2.372	.138
D1 * D5	222.876	4	55.719	.674	.617
D2 * D3	.000	0	.	.	.
D2 * D4	.000	0	.	.	.
D2 * D5	.023	2	.011	.000	1.000

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D3 * D4	.000	0	.	.	.
D3 * D5	.000	0	.	.	.
D4 * D5	97.173	2	48.587	.588	.564
D1 * D2 * D3	.000	0	.	.	.
D1 * D2 * D4	.000	0	.	.	.
D1 * D2 * D5	.000	0	.	.	.
D1 * D3 * D4	.000	0	.	.	.
D1 * D3 * D5	.000	0	.	.	.
D1 * D4 * D5	.000	0	.	.	.
D2 * D3 * D4	.000	0	.	.	.
D2 * D3 * D5	.000	0	.	.	.
D2 * D4 * D5	.000	0	.	.	.
D3 * D4 * D5	.000	0	.	.	.
D1 * D2 * D3 * D4	.000	0	.	.	.
D1 * D2 * D3 * D5	.000	0	.	.	.
D1 * D2 * D4 * D5	.000	0	.	.	.
D1 * D3 * D4 * D5	.000	0	.	.	.
D2 * D3 * D4 * D5	.000	0	.	.	.
D1 * D2 * D3 * D4 * D5	.000	0	.	.	.
Error	1818.083	22	82.640		
Total	214815.000	82			
Corrected Total	10913.524	81			

a. R Squared = .833 (Adjusted R Squared = .387)

The effect of leadership on model for the planning and Implementation of curriculum change

Table 4: Model summary of curriculum leadership effect on curriculum change

Model Summary			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.801[a]	.641	.637	7.00901

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8508.173	1	8508.173	173.190	.000[a]
	Residual	4765.241	97	49.126		
	Total	13273.414	98			
a. Predictors: (Constant),curriculum Leadership						
b. Dependent Variable: Curriculum Planning and Implementation strategies						

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Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.801[a]	.641	.637	7.00901

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8508.173	1	8508.173	173.190	.000[a]
	Residual	4765.241	97	49.126		
	Total	13273.414	98			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	27.752	1.875		14.803	.000
	Leadership	.916	.070	.801	13.160	.000

a. Dependent Variable: Curriculum Planning and Implementation strategies

According to Table 4, the hypothesis that states that curriculum leadership has no influence on curriculum planning and implementation in PHEs was tested at 0.05 significance level. The model summary shows that R^2 is 0.637 which means that the curriculum leadership can explain 63.7% of the variation in effective planning and implementation of curriculum change.From the ANOVA on Table 3, it was established that the calculated $P < 0.05$ which was statistically significant. Thus the model is significant in predicting the variation in effective curriculum planning and Implementation.

GLM test (Table 5) was used to investigate the interaction between the moderator variables and Leadership. As shown on Table 5, all demographic variables except number of staff in the department contributed significantly to the difference in curriculum planning and implementation.

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Table 5: GLM on interaction between moderator variables and leadership

Tests of Between-Subjects Effects					
Dependent Variable:q111					
Source	Type III Sum	df	Mean Square	F	Sig.
Corrected	10898.024[a]	68	160.265	134.416	.000
Intercept	123024.486	1	123024.486	103181.827	.000
D1 * q114	10.792	2	5.396	4.526	.032
D2 * q114	18.000	1	18.000	15.097	.002
D3 * q114	6.000	1	6.000	5.032	.043
D4 * q114	15.238	4	3.810	3.195	.049
D5 * q114	6.750	2	3.375	2.831	.095
Error	15.500	13	1.192		
Total	214815.000	82			
Corrected Total	10913.524	81			
a. R Squared = .999 (Adjusted R Squared = .991)					

The effect of challenges on the model for planning and Implementation curriculum change

Table 6: ANOVA test on effect of challenges on curriculum change

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.281[a]	.079	.068	11.44081

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	910.114	1	910.114	6.953	.010[a]
	Residual	10602.271	81	130.892		
	Total	11512.386	82			
a. Predictors: (Constant), CHALLENGES FACED BY AMM IN THE IMPLEMENTATION OF CURRICULUM CHANGE						
b. Dependent Variable: Curriculum change Planning and Implementation strategies						

Coefficients[a]						
Model		Unstandardized		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	67.647	6.647		10.176	.000
	CHALLENGES FACED BY	-.238	.090	-.281	-2.637	.010
a. Dependent Variable: Curriculum Planning and Implementation						

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Table 7: GLM test of Between-Subjects Effects

Dependent Variable: Curriculum Planning and Implementation strategies

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10150.486[a]	61	166.401	599.045	.000
Intercept	154725.166	1	154725.166	5.570E5	.000
D1 * Cha87	.000	0	.	.	.
D2 * Cha87	.000	0	.	.	.
D3 * Cha87	.000	0	.	.	.
D4 * Cha87	.000	0	.	.	.
D5 * Cha87	.000	0	.	.	.
q114 * Cha87	.000	0	.	.	.
Jobreq83 * Cha87	.000	0	.	.	.
Jobreq83 * q114 * Cha87	.000	0	.	.	.
Error	2.500	9	.278		
Total	187553.000	71			
Corrected Total	10152.986	70			

a. R Squared = 1.000 (Adjusted R Squared = .998)

The model summary on Table 6 shows that the construct of challenges explains 7.9 % of the variances in effective planning of curriculum change in PHEs. The model is significant (P <0.05). The construct significantly contributes to the model. ANOVA (Table 6) shows that F(21,62) = 6.953 , P = 0.010. This shows that the results are statistically significant, thus the construct may be a good predictor of the extent of effectiveness of AMMs in curriculum planning and implementation, which is a response variable of the study. Thus, it is concluded that challenges faced by AMMs in the implementation of curriculum negatively influence effective planning for curriculum change and implementation strategies. GLM test (Table 7) was used to investigate the interaction between the moderator variables and Leadership. As shown on Table 7 all demographic variables contributed significantly to the difference in curriculum planning and implementation.

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The effect of enablers on the model for the planning and Implementation of curriculum change

Table 8: Enablers and Planning and implementation of curriculum change and GLM moderators test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.652[a]	.425	.418	8.79394

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4292.693	1	4292.693	55.509	.000[a]
	Residual	5800.008	75	77.333		
	Total	10092.701	76			
a. Predictors: (Constant), ENABLERS OF AMM ROLE IN CURRICLUM CHANGE						
b. Dependent Variable: Curriculum Planning and Implementation strategies						

Coefficients						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	16.664	4.640		3.592	.001
	ENABLERS OF AMM ROLE IN CURRICLUM CHANGE	.708	.095	.652	7.450	.000
a. Dependent Variable: Curriculum Planning and Implementation strategies						

Table 9: GLM Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8783.934[a]	54	162.665	.	.
Intercept	142196.920	1	142196.920	.	.
D1 * Ena88	.000	0	.	.	.
D2 * Ena88	.000	0	.	.	.
D3 * Ena88	.000	0	.	.	.
D4 * Ena88	.000	0	.	.	.
D5 * Ena88	.000	0	.	.	.
Cha87 * Ena88	.000	1	.000	.	.
Jobreq83 * Ena88	.000	0	.	.	.

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Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.652[a]	.425	.418	8.79394

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4292.693	1	4292.693	55.509	.000[a]
	Residual	5800.008	75	77.333		
	Total	10092.701	76			

a. Predictors: (Constant), ENABLERS OF AMM ROLE IN CURRICLUM CHANGE

Jobreq83 * Cha87 * Ena88	.000	0	.	.	.
q114 * Ena88	.000	0	.	.	.
Error	.000	6	.000		
Total	161084.000	61			
Corrected Total	8783.934	60			

a. R Squared = 1.000 (Adjusted R Squared = 1.000)

The model summary on Table 8 indicates that the construct curriculum enablers can explain 42.5% of the variation in planning curriculum and implementation strategies. Furthermore, from

ANOVA analysis the model is statistically significant in explaining the variation in effective planning of the curriculum and implementation strategies ($P < 0.05$). Hence the construct can be used as a predictor in the research model. Enablers of AMM role have a strong significant influence (Beta = .708). GLM test (Table 9) was used to investigate the interaction between the moderator variables and enablers. As shown on Table 9, all demographic variables contributed significantly to the difference in curriculum planning and implementation.

Based on the analysis in section 4.0 a model to show the construct indicators and their predictive power on the dependent variable was developed.

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Model for research constructs and their predictive power on dependent variable

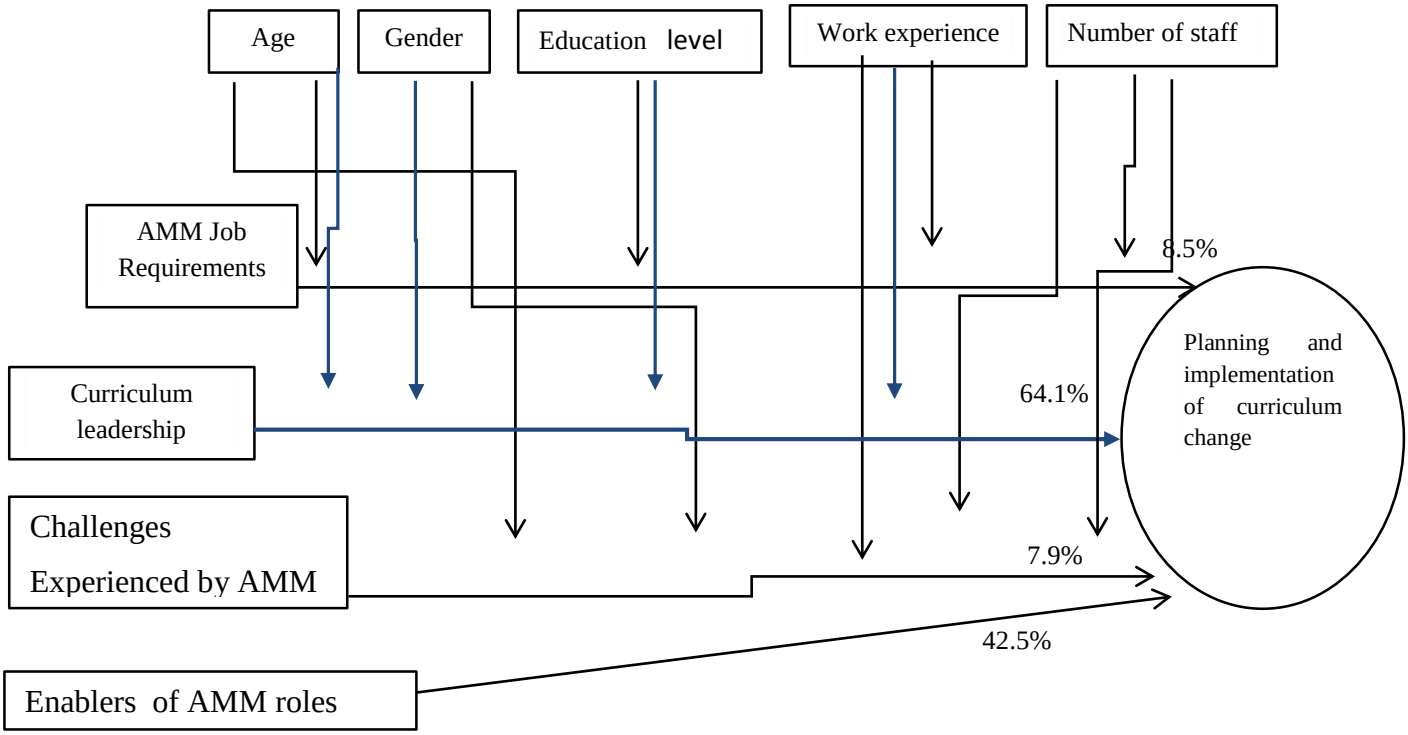

Figure 1: Moderators and predictive power model

In designing the model in Figure 1, two kinds of analysis were used. First, the study tested the influence of the construct variable on the dependent variables (Planning and implementing curriculum change), analysed the influence of the moderator variables and then presented the results variable by variable. The research model comprised of six independent variables: demographic characteristics, AMM job requirements, strategies for implementing and managing curriculum change, curriculum leadership, challenges faced by AMM, and enablers of AMMs role in curriculum change. The independent variables, also referred to as latent variables were expected to influence effective planning and implementation of curriculum change. The research models' independent variables were moderated by the demographic characteristics: Age, gender, education level, work experience and number of staff in the departments

To completely analyse a model, there is need to carry out an examination of goodness of fit using the R – squared criteria, the Adjusted R – squared and factor loadings. The goodness of fit values

(R^2 and Adjusted R^2) measure how well the model parameters estimated are able to predict the model performance. Factor loadings and goodness of fit were used to evaluate the entire model.

The model for planning and implementing curriculum change

The research model was validated using the results from the above discussed analysis. The dependent variable resulted in two sub-constructs namely the planning and implementation of curriculum change. The influence of the moderator and independent variables was tested on the two. The results of the regression analysis are presented below.

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Table 10 shows the beta value of each types of variable. The beta value is a measure of how strong each of the predictor variables influences the criterion variable. The beta regression coefficient allows for comparison of the independent variables and assessment of the strength of the relationship between the predictor variables and to the criterion variables. The beta is measured in the units of standard deviation. The higher the beta value the greater the influence of the predictor variable on the criterion variable. In this study the curriculum planning and implementation which is the dependent variable was regressed against, AMM job requirements, curriculum leadership, challenges experienced by AMM and enablers of AMM role in curriculum planning and implementation. The results are presented on Table 10.

Table 10: Regression and GLM Test Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919[a]	.845	.817	5.17173

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7419.850	9	824.428	30.823	.000[a]
	Residual	1364.084	51	26.747		
	Total	8783.934	60			

a. predictors: (constant), enablers of AMM role in curriculum change, age (in years):, gender: , challenges faced by AMM in the implementation of curriculum change, number of staff members, highest level of education: AMM job requirements, curriculum leadership, work experience(in years

b. Dependent Variable: Planning and Implementation Curriculum Change

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.768	8.656		1.128	.264
	Age (in years):	-.293	.834	-.029	-.352	.727
	Gender:	-.2949	1.675	-.118	-1.761	.084
	Highest Level of Education	.591	1.641	.026	.360	.720
	Work Experience(in years	.342	.745	.039	.459	.648
	Number of staff Members	-.426	.537	-.052	-.793	.432
	AMM job requirements	.275	.141	.141	1.955	.056
	curriculum leadership	.1330	.133	.748	9.983	.000

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a. predictors: (constant), enablers of AMM role in curriculum change, age (in years):, gender: , challenges faced by AMM in the implementation of curriculum change, number of staff members, highest level of education: AMM job requirements, curriculum leadership, work experience(in years						

	challenges faced by AMM in the implementation of curriculum change	-.169	.050	-.204	-3.395	.001
	enablers of AMM role in curriculum change	.112	.107	.089	1.047	.300
a. Dependent Variable: Planning and Implementing Curriculum Change						

Table 10 led to the development of a linear equation model for effective planning and implementation of curriculum change formulated as follows:

$Y = \beta 0 + b_1p_1 + b_2p_2 + b_3p_3 + b_4p_4 + b_5p_5 + b_6p_6 + b_7p_7 + b_8p_8 + b_9p_9$ and the Beta values in the Table 45 where:

Y = Planning and Implementation of curriculum change

p_1= Age (in years)

p_2= Gender

p_3= Highest Level of Education

p_4= Work Experience (in years)

p_5= Number of staff Members in the department

p_6 = AMM job requirements

p_7 = Curriculum leadership

p_8= Challenges faced by AMM in the implementation of curriculum change

p_9 = Enablers of AMM role in curriculum change

Substituting using the results in Table 45 finally gives the following model equation:

$Y = 9.768 + -.293p_1 + -.295p_2 + .591p_3 + .342p_4 + -.426p_5 + .275_6p_6 + .1330p_7 + -.169p_8 + .112p_9.$

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From the model summary R^2 value on Table 10, the results showed that the independent variables explained 81.7% of the variation in the dependent variables effective planning and implementation curriculum change. The model shows contributions of the independent and moderator variables to the dependent variables: highest level of education (59.1%), work experience (34.2%), AMM job requirements (27.5%), number of staff in the department contributed (- 42.6%), leadership (13.3%), challenges (-16.9%) and age group (-29.3%), and enablers (11.2%).

The model shows that variables that include levels of education, years of experience, curriculum leadership, enablers of AMMs role in curriculum change and AMM job requirements are important predictors of effective AMM role in the planning and implementation of curriculum change in PHEIs while variables such as challenges faced by AMMs in the implementation of curriculum change, age of AMMs and size of departments are not predictors of effective AMM role in the planning and implementation of curriculum change.

The model shows that level of education is the highest predictor of effective AMM role in the planning and implementation of curriculum change in PHEIs, contributing 59.1% of the variation in the planning and implementation of curriculum change in PHEIs. This means that level of education of AMMs contributes more positively than any other variables in the way AMMs play their role in the planning and implementation of curriculum change in PHEIs. With regards to the level of education therefore, for the model to effectively support AMM role in the planning and implementation of curriculum change, first and foremost, the appointment of people to AMM positions in PHEIs needs to be based on academic or professional merit. This means that people with higher educational qualifications need to be given preference for the AMM role before those with less educational qualifications. Highly qualified people already possess superior knowledge of their curriculum area to be able to effectively and successfully plan and implement curriculum change in their departments.

Where an institution has AMMs whose levels of education are low (some PHEIS have AMMs with bachelor's degrees), it is proposed that a robust staff development programme be put in place so that these AMMs are helped to acquire higher levels of educational qualifications and knowledge in their curriculum areas. Such a plan could include funding AMMs for higher studies up to doctoral level. Recruitment of staff from outside the institution needs to target those with higher levels of educational qualifications in their curriculum areas to ensure that a wide base of highly qualified staff to tap from when appointing people to AMM position is available.

Level of work experience is viewed in the model as the second most important predictor of effective AMM role in the planning and implementation of curriculum change in PHEIs, contributing 34.2 % of variation. This means that work experience contributes positively to how AMMs perform their role on curriculum change in PHEIs. For the model to be effectively applied in PHEIs and other similar institutions therefore, top management need to promote people with adequate and relevant years of work experience, that is, people who have been engaged in both the teaching and review of programmes in their curriculum areas for fairly longer periods like ten years. Such a fairly long period of time gives a person enough time to understand the rudimentary approaches to curriculum change in terms of the processes, challenges and strategies for ensuring effective and successful curriculum change. Understudying could also be used as a tool of ensuring that those who eventually become

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appointable into AMMs positions have heard years of internship experience under an experienced AMM.

In the model, curriculum leadership is also viewed as one of the predictors of, and positive contributor (13.3%) to effective AMM role in the planning and implementation of curriculum change. This then means that for the above model to be effectively and successfully implemented, top management in PHEIs should ensure that AMMs have authority not only to engage in curriculum change but also to carry out their mandates unhindered by controls. The working environment in the PHEIs should be flexible enough and characterised by decentralised decision making through distributed leadership to enable AMMs to innovate and be creative in their leadership styles during curriculum change. If AMMs are empowered with decision making opportunities and authority, they become more committed and more motivated to perform their roles in curriculum change.

The model further shows that enablers of AMM role in curriculum change are important predictors of effective AMM role in the planning and implementation of curriculum change in PHEIs as they contribute 11.2 % of variation to effective AMM role. The creation of conditions for effective AMM role in curriculum change such as ensuring that AMMs have adequate knowledge through relevant in-service training and/or further studies, providing AMMs with adequate human and material resources, ensuring that AMMs participate in decision making by decentralizing operations among other enablers, will make the implementation of the model successful and will enhance the role of AMMs in the planning and implementation of curriculum change.

The model also shows that AMM job requirements that include among others being provided with detailed job descriptions, having opportunities to participate in training programmes to improve their knowledge and skills for effectively planning and implementing curriculum change, getting more opportunities to participate in curriculum change so that they improve their experience, and being given adequate authority over the planning and implementation of curriculum change, are important predictors of AMMs success in their role of planning and implementing curriculum change in PHEIs as they contribute 27.5%. With regards to AMMs job requirements, it is therefore recommended that for the above model to be effectively implemented in PHEIs, top management in PHEIs needs to create conditions that enable AMMs to satisfy all the AMMs job requirements. Such conditions include ensuring that AMMs are given detailed job descriptions at the start of their role, using distributed leadership to give more authority to AMMs to lead curriculum change, and providing more opportunities for AMM training to enhance their knowledge, skills and ultimately ability to effectively and successfully plan and implement curriculum change.

The model also shows that challenges that militate against effective AMMs role in curriculum change and these challenges need to be minimized or eliminated if the model is to be successfully implemented. Such challenges include a highly restrictive work environment, high workloads and lack of AMMs authority over the planning and implementation of curriculum change among others. These challenges contribute negatively (-16.9%) to effective AMM role in the planning and implementation of curriculum change. It is recommended that the above challenges be minimized or eliminated completely by ensuring a flexible work environment characterised by decentralization of decision making.

The model further shows that age (-29.3%), gender (-29.5%) as well as the size of departments in PHEIs (-42.6%) have a discernible influence on how AMMs plan and implement curriculum

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change in PHEIs though they contribute negatively to AMM role. This means ensuring more diversity in the ages and gender of AMMs could ensure the harnessing of different experiences and leadership styles that could auger well for effective curriculum change. With regards to department size, it was noted from results of the study that academic departments in PHEIs are small and easy to manage during the planning and implementation of curriculum change hence could be left like that since they contribute very little to the way AMMs plan and implement curriculum change. Where resources allow, the size of the departments may be slightly improved to capture more talent and knowledge needed during curriculum change.

The above quantitative findings were corroborated by qualitative findings. With regards to the influence of level of education, years of experience, AMM job requirements and curriculum leadership, AMMs confirmed during interviews that these variables were critical predictors of effective AMMs role in the planning and implementation of curriculum change in PHEIs. Interviewees indicated that AMMs with more years of experience and higher levels of experience performed better than those with less. The also indicated during interviews that the satisfying of AMMs job requirements such as having detailed job descriptions, authority over the curriculum change process, adequate knowledge and skills to plan curriculum change as well as having received training on curriculum change was viewed as critical for the effectiveness of AMMs in the role in curriculum change. Interviewees further indicated that leadership was very important for the success of AMMs in their role in curriculum change especially when they use the distributed leadership style that's promotes collective leadership.

With regards to the influence of age, gender and size of departments, AMMs indicated during interviews that these variables had no influence on the effectiveness of AMMs role in the planning and implementation of curriculum change. On gender particularly interviewees indicated that they felt that there were differences in the way male and female AMMs approached the planning and implementation of curriculum change. AMMs also indicated during interviews that there were many barriers or challenges to their role in curriculum change and these affected their effectiveness. Such challenges were particularly-related as well as AMM-related. Institutional-related challenges included a highly restrictive work environment which left them with little to no authority over the curriculum change process. AMM-related such as lack of adequate knowledge on curriculum change due to lack of relevant training on curriculum change. Other challenges mentioned by AMMs during interviews that militated against the effectiveness of AMMs in their role in curriculum change included role ambiguity, lack of time to concentrate on curriculum change to high workloads, and inadequate resources, especially financial and human resources. AMMs indicated that departments were always under-staffed because top management always complained about tight budgets.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the study, the following conclusions are made:

AMMs do not play a significant and effective role in the planning and implementation of curriculum change in PHEIs owing to a number of challenges they face. Major challenges or factors that contributed to this ineffectiveness were identified in the study as a highly regulated and restrictive work environment in PHEIs where decision making was highly centralised making effective leadership of curriculum change by AMMs in departments a very difficult and tenuous task. This environment did not allow AMMs to be innovative. High workloads

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also left AMMs drained and with little to no time to interact with, and guide subordinates during curriculum change. Other factors that militated against effective AMM role in leading curriculum change included lack of authority over the curriculum change process, lack of formal training, and inadequate experience by AMMs in the planning and implementation of curriculum change.

Deographic characteristics of AMMs which included levels of education, gender and years of experience had a significant influence on how AMMs enacted their role in the planning and implementation of curriculum change in PHEIs. Based on the results of the study also, it is also concluded the age of the AMMs and the size of their departments did not have an influence the role of AMMs in the planning and implementation of curriculum change in PHEIs.

Owing to the numerous challenges AMMs faced in PHEIs, there were very few conditions in PHEIs which acted as enablers of effective AMM role in the planning and implementation of curriculum change in PHEIs. Results of the study showed that the prevalence of many factors that acted as barriers to AMM role in curriculum change limited the availability of enablers AMM could have taken advantage of in curriculum planning and implementation. Results of the study further showed that there were no major enabling conditions contributed to effective AMM role in curriculum change. This situation helped to amplify the position that AMMs in PHEIs operated in a harsh environment that made their role in the planning and implementation of curriculum change challenging and untenable.

To ensure that AMMs effectively perform their role in the planning and implementation of curriculum change more effectively, it is recommended that the root cause of challenges in PHEIs be addressed, that is, a highly restrictive work environment that leaves AMMs with no authority, or say, over their issues in departments such as workloads, staffing, training and financial resources among others needs to be addressed and be made more conducive. Top management in PHEIs need to open up the management of the institutions by decentralizing decision making and so as to allow for more sharing of decision. This will allow not only AMMs to collaborate, but also the generality of staff.

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