Impact of Mentoring Programme on Job Performance and Retention of Metalwork Teachers in Technical Colleges in North West Nigeria

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Abstract
The study was conducted to determine the impact of mentoring programme on job performance and retention of metalwork teachers in North-West, Nigeria. The study employed the quasi-experimental research design with non-equivalent groups. The population for the study was 152 less experienced metalwork teachers in technical colleges. Purposive sample was used for 35 male and female teachers in the experimental group drawn from four technical colleges in North-West, which comprised of 16 teachers in the experimental group and 19 teachers in the control group. The instruments used for data collection for the study was structured questionnaire, titled Career Mentoring and Behaviour Measures (CMBM) and the Teacher Mentoring Programme Guide (TMPG) which was used for treatment. The reliability coefficient of the questionnaire was 0.93 using Crobach's Alpha. The experimental group was trained with TMPG while conventional approach was used for the control group. Pretest was administered to both groups a week before the 15 weeks training began, followed by the treatment with TMPG for 13 weeks. The data generated from the pretest and posttest were analyzed using mean, and standard deviation, Analysis of Covariance (ANCOVA) was used to test hypothesis 1, and 2; while hypothesis 3 was tested with Multivariate Analysis of Variance (MANOVA). The findings revealed a significant impact of mentoring programme on job performance, and retention but no significant influence of gender in mentoring programme on job performance and retention. The findings of the study revealed that mentoring programme had a positive effect than the conventional professional development approach on metalwork teachers` behavior to teaching irrespective of age, academic qualification and gender.
Keywords: mentoring, mentors, mentees, metalwork teachers.

Introduction

Globally, continuing professional development by mentoring is recognized for promoting teacher learning and improving school effectiveness. According to Nolan (2007) mentoring is a facilitated, structured process whereby an experienced person (mentor) assists and supports an inexperienced person (mentee) in personal and professional growth.Nonaka and Takeuchi (2001) posited that work place relationships such as mentoring should be fostered to promote transfer of tacit knowledge. Wright (2003)stressed the importance of human resource development to organization success. Faruggia (2010) identified types of mentoring programme suitable for training, to include: one-to-one mentoring, group mentoring, team mentoring, and peer mentoring. Thus, a training intervention such as mentoring is intended to facilitate metalwork teacher' job performance, satisfaction andretention.

The teacher is a model that is consciously imitated and often relied on to deliver quality learning. Okorie (2005) described metalwork teachers as professionals who assist students to acquire knowledge, skills and attitude in metalwork. This demands that, the metalwork teacher should be acquainted with practical skills and theoretical concepts of the profession to be able to create and sustainimpart learning of metalwork effectively. Professional experience of a metalwork teacher is contingent on

accumulated years of experience and can be viable element for task delivery. Gabriel (2005) suggested that metalwork teachers should have at least five years' experience before mastery, stability and expertise to perform as professionals. Performing and experience metalwork teachers are valuable assets to achievement of set goals and standards in technical colleges. Munchisky (2003) defined performance as a combination of teacher's behavior to his job. A performing teacher stands good chances of been retained on his job for longer period of time in technical colleges.

Technical colleges in North-West, Nigeria are established to produce craftsmen at the secondary school level. The duration of courses at technical colleges is three years for intensive instruction in classroom work and workshop practice, leading to the award of National Technical Certificate (NTC). The objectives of technical education for technical colleges include: to provide trained manpower in applied science, commerce and technology particularly at sub professional level, provide technical skills, give professional studies in engineering and technology, give training and improve necessary skills leading to production of craftsmen and technicians, and give youths an understanding of the world of technology (NBTE, 2001). Retention of productive and experienced metalwork teachers is critical to the achievement of the objectives in technical colleges. According to Griffeth and Hom (2001) teachers' retention involves taking measures to encourage teachers to remain in their organization for maximum period of time.

A survey conducted by Nigerian Union of Teachers (NUT) leadership group in March (2016) spotted crisis in teacher recruitment; nearly three quarter (73%) of school leaders were experiencing difficulties in recruiting teachers, with (61%) agreed that the situation had got worse and (42%) worst. NUT explained that the crisis in teacher recruitment means that while schools are struggling to fill vacancies, large numbers of learners are enrolling and being taught by few teachers who decided to remain on the job. In addition, it is evident that attrition rate is high. This attrition level is currently estimated to be as high as 40 to 50 percent within the first five years (NUT, 2016). The absence of support programme is another factor. Darling-Hammond (2003) suggested that some of the challenges facing new teachers are low salaries, poor working conditions, minimal teacher preparation, and lack of support from colleagues and administrative staff. Furthermore, Walker (2003) agreed with Darling-Hammond andsuggested that new teachers leave the profession because of society's attitudes toward teachers, financial issues, time scarcity, workloads, and lack of support. The preceding researches depict the situation in technical colleges in North-West, Nigeria and revealed that there is an important link between a teacher's sense of being effective, satisfaction with work, and retention. Thus, a structured support programme is needed to ensure that metalwork teachers stay on their job in technical colleges for maximum period of time.

In order to close the gap, this researcher has identified a need for mentoring as a support programme for metalwork teachers in technical colleges. A structured mentoring program for metalwork teachers would help to develop talent, maintain a school's quality standards and provides high quality standards of teaching for the students (Hansford, 2003). Hence, it had become necessary to determine the effect of mentoring as a support programme of metalwork teachers for job performance, and retention in technical colleges in North-West, Nigeria.

Statement of the Problem

Metal work is one of the trades offered in technical colleges in Nigeria with laudable objectives. The implementation of these

objectives would require experienced, committed and dedicated metalwork teachers who possess the required manipulative skills and are routed in theoretical aspects. Unfortunately, metalwork teachers are overworked due to acute shortage of teachers. This is evident in the way the teachers are leaving the job (attrition). In addition, efforts by government to recruit new metalwork teachers to fill the vacuum have not helped as most of the recruited metalwork teachers lack confidence, experience and exposure to the job. If this trend is allowed to continue without a mentoring support programme for the teachers, it might spell doom for the technical colleges in particular and educational sector in general as we will continue to produce unskilled, unqualified and unemployable metalwork graduates who are being trained by incompetent and inexperienced metalwork teachers. The ultimate goal of this mentoring program as an intervention is to improve personal and professional growth of metalwork teachers continually within the shortest possible time and by so doing, get the teachers to perform and reduce attrition.

ence, the problem of this study is that most metalwork teachers in technical colleges arenot performing and are leaving. It is pertinent to examine the effect of mentoring programme of metalwork teachers on job performance to retain them in technical colleges in North-West, Nigeria.

Purpose of the Study

The purpose of this study is to investigate the effect ofmentoring programme of technical teachers on job performance, in technical colleges in North-West, Nigeria. Specifically, the study seeks to determine:

1. The effect of mentoring programme on job performance of metalwork teachers in technical colleges.
2. The effect of mentoring programme on job retention of metalwork teachers in technical colleges.
3. Influence of gender in mentoring programme on job performance, of metalwork teachers in technical colleges.

Research Questions

The following research questions will be used to guide the study:

1. What is the effect of mentoring on job performance of metalwork teachers in technical colleges?
2. What is the effect of mentoring on job retention of metalwork teachers in technical colleges?
3. What is the influence of gender in mentoring programme on job performance and retentionof metalwork teachers in technical colleges?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant impact of mentoring programme on job performance between metalwork teachers exposed to mentoring programme and those not exposed to the programmein technical colleges.

H2. There is no significant impact of mentoring programme on job retention between metalwork teachers exposed to mentoring programme and those not exposed to the programme in technical colleges.

3. There is no significant influence of gender in mentoring programme on job performance and retentionbetween metalwork teachers exposed to mentoring programme and those not exposed to the programme in technical colleges.

Methodology

The design of this study was the quasi-experimental research design that spread through 15 weeks. A quasi-experimental design enables the researcher to manipulate variables, ascertain cause-effect relationship and apply the non-randomizedapproach in

selecting participants (Gall, Gall & Borg, 2007). Specifically, the pre-test, post-test, experimental (nonequivalent) control group was employed in this study, such that there was an experimental and a control group. The experimental group receivedthe (planned and formal mentoring) treatment that adopted the stages of Kram`s model, while the control group received an alternative treatment (unplanned and non-formal mentoring) that did not apply the basic premise of the stages of Kram`s model. The design was suitable for this study in that there was manipulation of the independent variable, pretest, posttest, non-randomization of participants, and the cause-effect relationship between the independent, and the dependent variables. The study was conducted in North-West, Nigeria, which comprised of seven states: Kebbi, Sokoto, Zamfara, Katsina, Kano, Jigawa and Kaduna. There are both federal and state-owned technical colleges that offer vocational education programme with metalwork trades as option or area of specialization in these states; and it is expected that teachers of metalwork trades in these technical colleges are experienced and specialized in their area.

The population for the study was 152 less experienced metalwork teachers in 22federal and state-owned technical colleges in North-West, Nigeria; where metalwork is offered as subject. The population comprised of 16 less experienced metalwork teachers in two Federal Science Technical Colleges (FSTCs) and 136 less experienced metalwork teachers in 20 Government Technical Colleges (GTCs). This is determined by number of years in service (less than 5years) by individual teachers.

The sample for the study was 35 less experienced metalwork teachers (27 male and 8 female) from four technical colleges drawn from the population. The sample was made up of 16 teachers in the experimental group and 19 teachers in the control group. The researcher selected metalwork teachers from the four technical colleges; two each for theexperimentalgroup (one federal and one state owned) and control groups (one federal and one state owned). The teachers in the experimental and control groups are NTC 1, NTC II, and NTC III metalwork teachers'Purposive sampling technique was employed in this study because the technical colleges did not have a particular functional workshop setting where these categories of metalwork teachers could undertake workshop practice. Furthermore, the teachers were studied in their intact classes for effective training during programme.

The instrument adapted and used for data collection was the structured questionnaire developed by Goodman and Syvantek, 1999, and Boyd (2009). All the 46-items of the questionnaire were rated on a five-point Likert scale. The questionnaire was titled Career-Mentoring and Behaviour Measures (CMBM). In addition, the Teacher Mentoring Programme Guide (TMPG) for metalwork teachers was used; though not as an instrument for data collection, but to determine the impact of mentoring programme on job performance and retention. The instrument was adapted from a developed teacher mentoring guide by American Institute of Research (2015). The level of adaptation, involved inserting metalwork teacher to represent job (occupation). In addition, metalwork was added to the statement on career advancement and activities on the guide. Furthermore, metalwork teacher was used to replace mentor and mentee where necessary and manipulative skill in metalwork was added to the mentoring content learnt by mentees. TPMG was developed by the researcher based on extensive literature search, reports andfrom items used in similar studies in and outside Nigeria. The TPMG consists of 3 sections:Section A is on the goal of mentoring programme. Section B contained the structure of the programme; which describes the mentoring objectives, content,

requirements, mentor activity, evaluation procedures and modeling required at every stage of the intervention. Section C contained the Mentors Feedback Sheet (MFS), Mentees Reflection Sheet (MRS) and the checklist.

The questionnaire and TMPG were validated by three experts (2 from the university and 1 from the Polytechnic). The experts were requested to examine the suitability of the instrument for data collection and TMPG as reference material during intervention. Since TMPG was not data gathering instrument, it was ensured that mentors were familiar with its contents and use to ensure same condition for all mentees.

The internal consistency of the questionnaire was determined by using Cronbach's alpha method. The questionnaire was administered once to 10 less experienced metalwork teachers (mentees) from government Technical College, Malali, and Government Technical College, Ingawa that do not form part of the sample but were part of the population of the study. The reliability coefficients (alpha values) were0.95 for job performance and 0.92 for job retention. The overall reliability was 0.93. The researcher subjected both the experimental and control groups to pre testing (T1) before treatment and post testing (T2) after treatment. The questionnaire was administered two times (T1 and T2) to the teachers. The first administration of the questionnaire T1 took place one week before the intervention began. This was followed by the treatment with TMPG by the trainers (mentors) which lasted for 12 weeks. The second administration (T2) was carried out two weeks after intervention. The questionnaire used for the first administration (T1 was assigned code that facilitated matching of the retrieved questionnaire at (T2) of administration. The questionnaire administration and retrieval involved the services of four trained research assistants;while the researcher coordinated the groups. This has helped to achieve a very high rate of administration and return of instrument at T1 and T2 respectively. The data collected from administration of the instrument at T1 and T2 were analyzed with Statistical Package for Social Sciences (SPSS). Hypotheses1 and 2 were tested with Analysis of Covariance (ANCOVA) in order to compare a variable in two or more (Experimental and Control) groups while hypothesis 3 was tested with Multivariate Analysis of Variance (MANOVA) which helped determine the distinction of the multiple dependent variables in the study. The mean gain of each of the experimental or control group was computed to determine the impact of mentoring programme on job performance and retention of metalwork teachers. A decision rule was used for decision making with respect to the results. The hypotheses of no significant difference were accepted for any item whose (p) value is greater than 0.05; the hypotheses of no significant difference were rejected for any item whose probability (p) value was less than or equal to 0.05.

Results

Results are presented according to research questions and hypotheses.

Research question 1:

What is the impact of mentoring programme on job performance of metalwork teachers in technical colleges?

Table 1: Mean and standard deviation on impact of mentoring programme on job performance.

	Job Performance				
	Pretest (T1)		Posttest (T2)		
	Mean	SD	Mean	SD	Mean Gain
Experimental	2.91	.469	3.48	.299	0.57
Control	3.13	.303	3.19	.431	0.06
Difference				0.51	

Table 1 showed the mean impact of mentoring programme on job performance of metalwork teachers in technical colleges between the experimental and control groups. The table showed that the experimental group had a mean response of 2.91 at T1 and 3.48 at T2. The control group had a mean response of 3.13 at T1 and 3.19 at T2. The mean gain of the experimental group was 0.57, and the mean gain for the control group was 0.06 as a result of the mentoring programme; which indicated a higher mean gain for the experimental group than the control group. The overall mean difference of 0.51 showed that the mentoring programmehad higher effect on job performance of the teachers when compared to the time prior the intervention.

Research Question2

What is the impact of mentoring programme on retention of metalwork teachers in technical colleges?

Table 2. Mean and standard deviation on impact of mentoring programmme on job retention

Job Retention					
Pretest (T1)			Posttest (T2)		
	Mean	SD	Mean	SD	Mean Gain
Experimental	2.82	.338	3.13	.387	0.31
Control	2.62	.455	2.78	.374	0.16
Difference				0.15	

Table 2 showed the mean impact of mentoring programmme on job retention of metalwork teachers in technical colleges between the experimental and control groups. The table showed that the experimental group had a mean response of 2.82 at T1 and 3.13 at T2. The control group had a mean response of 2.62 at T1 and 2.78 at T2. The mean gain of the experimental group was 0.31, and the mean gain for the control group was 0.16 as a result of the mentoring programme; which indicated that the experimental group had a higher mean gain than the control group. The overall mean difference of 0.15 showed that the mentoring programme had higher effect on job retention of the teachers when compared to the time prior the intervention.

Research Question 3

What is the influence of gender in mentoring programme on job performance and retention of metalwork teachers in technical colleges?

Table 3. Mean and standard deviation on the influence of gender in mentoring programmeon job performance, and retention

Male			Female		
Mean	SD	Mean	SD	Mean Gain	
Job Performance	3.35	.397	3.24	.414	0.11
Job retention	3.00	.444	2.77	.265	0.23

Table 3 showed the mean impact of mentoring programme on job performance, and retention of metalwork teachers in technical colleges. The table showed that the mean differences between male and female metalwork teachers on job performance and retention are 0.11 and 0.23 respectively. In each case, the table shows that the male teachers have higher mean than the female teachers.

Test of Hypotheses

Hypothesis 1

There is no significant impact of mentoring programme on job performance between metalwork teachers exposed to mentoring programme and those not exposed to the programme in technical colleges

Table 4.Summary of ANCOVA on the impact of mentoring programme on job performance.

	Type III					Partial Eta
	Sum of squares	Df	Mean Square	F	Sig.	Square
Source						
Corrected Model	1.238[0]	2	.619	4.789	.015	.230
Intercept	2.900	1	2.900	22.447	.000	.412
JP	.551	1	.551	4.263	.047	.118
Group	1.019	1	1.019	7.889	.008	.198
Error	4.134	32	.129			
Total	392.285	35				
Corrected Total	5.372	34				

Table 4 showed the ANCOVA test for mean of impact of mentoring programme on job performance of metalwork teachers. The Table showedthat the impact of mentoring programme on job performance was significant (F (1,32) = 7.889, p = .008 <.05, η^2_p=.198). Although the effect was significant, it was not relatively a large effect, with respect to the value of the partial eta square. Hence the null hypothesis was rejected. This implied that there was significant impact of mentoring programme on job performance, between metalwork teachers exposed to the mentoring programme and those not exposed to the programme.

Hypothesis 2

There is no significant perceived impact of mentoring programme on job retention between metalwork teachers exposed to mentoring programme and those not exposed to the programme in technical colleges.

Table 5:Summary of ANCOVA on the impact of mentoring programme on job retention

	Type III					Partial Eta
	Sum of squares	Df	Mean Square	F	Sig.	Square
Source						
Corrected Model	2.490[0]	2	1.245	11.868	.000	.426
Intercept	1.774	1	1.774	16.916	.000	.346
Pretest	1.418	1	1.418	13.525	.001	.297
Group posttest	.496	1	.496	4.730	.037	.129
Error	3.356	32	.105			
Total	309.198	35				
Corrected Total	5.0846	34				

Table 5 showed the ANCOVA test for mean of impact of mentoring programme on job retention of metalwork teachers. The Table showed that the impact of mentoring programme on job retention was significant (F (1,32) = 4.730, p = .037< .05, η^2_p=.129).

Though the effect was significant, it was not relatively a large effect, with respect to the value of the partial eta square. Hence the null hypothesis was rejected. This implied that there was significant impact of mentoring programme on job retention, between metalwork teachers exposed to the mentoring programme and those not exposed to the programme.

Hypothesis 3

There is no significant perceived impact of mentoring programme on job performance and retention between metalwork teachers exposed to mentoring programme and those not exposed to the programme in technical colleges.

Table 6:Summary of MANOVA on the influence of gender in mentoring programmeon job performance and retention

		Type III				Partial Eta
DV		Sum of squares	Df	Mean Square	F	Sig. Square
Source						
Corrected Model	JP	0.70[0]		1.070.438	.513.013	
	JR	3310	1	.331	1.982 .169	.057
Intercept	JP268.157		1	268.157	1669.170 .000	.981
	JR	204.914	1	204.914	1226.25.000	.974
GenderJP	.070		1	.070	.438 .513.013	
	JR	.331 1		331	1.982 .169	.057
Error	JP	5.302	33	.161		
	JR	5.514	33	.167		
Wilk's Lamda					.834	.486 .990

Table 6 showed the MANOVA test for the influence of gender in mentoring programme on job performance,and retention of metalwork teachers. The Table showed that the influence of gender was not significant for job performance (F (1,33) = .438, p = .513 > .05, η^2_p=.013),and not significant for job retention (F (1,33) =1.982, p = .169 > .05, η^2_p=.057), similarly, the multivariate test with Wilk's Lamda test(F (1,33) =.384, p = .456 > .05, η^2_p=.990), was not significant. Thus, the null hypothesis was upheld. This implied that there was no significant influence of gender in mentoring programmeon job performance, and retention between metalwork teachers exposed to the mentoring programme and those not exposed to the programme.

Discussion of findings

The findings revealed that the mentored subjects (experimental group) had higher posttest than the control group on teachers' job performance. This difference was significant as revealed by the analysis of covariance (ANCOVA), (**F** (1, 32) = 7.889, p = .008 < .05, η^2_p=.198). Thus, the null hypothesis was rejected. Hence, mentoring is effective in changing the metalwork teachers' behavior towards job performance. Thisfinding is consistent with those of Agunloye (2013) who conducted a study on impact of mentoring on faculty staff performance in institution of higher learning in Nigeria and revealed that mentoring programme produced gains in all dimensions of performance for the participants in the programme. The findings also agreed with Achor and Duguryil (2014) who conducted a study on effectiveness of a teacher mentoring programme in enhancing pre-service chemistry teachers' attitude towards the teaching profession and revealed a significant impact of mentoring programme on attitude to teaching between teachers exposed to the programme and those not exposed to the programme.

The findings of this study on teachers' job retentionrevealed that the mentored subjects (experimental group) had higher mean posttest than the control group. This difference was

significant as revealed by the analysis of covariance (ANCOVA), ($F(1, 32) = 4.730$, $p = .037 < .05$, $\eta^2_p = .129$). Thus, the null hypothesis was rejected. This implies that mentoring is effective in changing the metalwork teachers' behavior towards job retention. This finding is consistent with those of Leng (2012) who conducted research on the impact of mentoring programme on Banks' employee' job satisfaction, performance and retention. The Author revealed that when people are emotionally stable and happy, they would want to put in their best in performing their job and would want to stay on the job for maximum period of time.

The findings of this study on influence of gender on job performance and retention as revealed by MANOVA showed that there was no significance difference for job performance ($F(1,33) = .438$, $p = .513 > .05$, $\eta^2_p = .013$), and not significant for job retention ($F(1,33) = 1.982$, $p = .169 > .05$, $\eta^2_p = .057$). Similarly, the multivariate test with Wilk's Lamda test($F(1,33) = .384$, $p = .456 > .05$, $\eta^2_p = .990$), was not significant. Thus, the null hypothesis was upheld. This implied that there was no significant influence of gender in mentoring programme on job performance, and retention between metalwork teachers exposed to the mentoring programme and those not exposed to the programme. This finding is consistent with that of Oghoadena (2013) who conducted a qualitative study on gender issues associated with academic mentoring in Nigerian University. The findings revealed common challenges in mentoring female academics as inadequate and non-availabilityof older female role models for upcoming female academics.

Conclusion

The challenge of adding value in a cost-effective manner is constantly desirable by any organization including technical colleges. Mentoring has proven to be a vital tool that offers immense benefits at minimal cost to the mentor, mentee and the organization. Thus, organization's policy on mentoring of metalwork teachers' behavior to the teaching profession; irrespective of age, academic qualification and gender must be encouraged rather than the conventional professional development approach. Mentored teachers showed evidence of remaining on the job continually as their fear of losing their jobs due to incompetence and lack of exposure and experience was overcome by the intervention (mentoring programme). Hence, the observed increase in competency level of less experienced metalwork teachers after exposure to the mentoring programme clearly indicated that the use of the programme for professional development of teachers would produce better results and retain them if well implemented.

Recommendations

1. Management Boards of Technical colleges in Nigeria should adapt mentoring programmeas a matter of policy for professional development of beginning metalwork teachers.
2. Experienced and qualified teachers should be appointed to leadership positions in technical colleges and be used for the sustenance of mentoring programmeto reduce attrition.

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