THE INFLUENCE OF TEACHERS' ATTITUDE ON THEIR OCCUPATIONAL TASK PERFORMANCE IN TEACHING ENGINEERING DRAWING

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ABSTRACT

The purpose of this study is to explores the influence of attitude on the performance of Nigerian technical education teachers in teaching Engineering drawing based on three components of attitude (affective, cognitive and behavior). A Quantitative cross-sectional survey design was on 449 technical education teachers and technical education students with all technical education teachers n=217 and n=232 technical education students proportionately sampled form six (6) tertiary institutions running technical education programs. Two sets of questionnaire were used as data collection instruments. Data was analyzed using descriptive statistics, regression analysis and analysis of variance. The result of the analysis shows that, technical education teachers' level of performance in teaching engineering drawing is high. The result further revealed that teachers' attitude has significant influence on their occupational task performance in teaching engineering drawing; and that adequate knowledge and skills, good feelings and emotions towards engineering drawing enhance their performance. Based on these results, it was therefore recommended that teachers should be trained and retrained frequently to enhance their performance.

Keywords: Teachers' Attitudes, Teachers Performance, Teaching Engineering Drawing

Introduction

Teachers, according to Kothari, (1970), are regarded as the most influential school-based factors that influence students' performances. They play a key role in the process of teaching and learning at schools (Mahri & Ramdhany, 2010; Jajang et al 2014). The whole process of education is shaped and modeled by the human personality called the teacher whose role is acknowledged as pivotal in the educational system of all societies. In Nigeria, Engineering Drawing is a compulsory course to all students in technical education institutions. It is taught at all levels, and this course helps Nigerian technical students to understand and comprehend the contents of many technical education courses. Understanding the basic concepts of engineering drawing is essential to students of engineering and technical education.

In order to achieve these, technical education teachers should have adequate understanding of the subject matter and must also be able to display good behavior and positive feelings and emotions in teaching same. As role models, technical education teachers play a significant role in shaping the attitudes of their students toward the subject. Their attitudes and performances play an important part in achieving effective teaching and learning at every stage of the educational processes. These noble behaviors facilitate their strategies for coping with difficulties and challenges in the discharge of their job routines.

The terms 'Attitude' and 'performance' are fundamentally different concepts and indeed, they are vital terms used in various fields of Social Psychology. The concept 'attitude' as studied in Sociology and Social Psychology, is focused substantially on human actions 'as a function of the social setting. The concept of perfromance on the other hand emerges originally as a confluence of ideas drawn from humanistic and social scientific disciplines (Auslander, 2008). Attitudes and performances of teachers help in modeling students' attitude and influence their motivations to understand and comprehend the teaching and learning in the classroom. Fishbein and Ajzen (1975) developed a theory called a 'theory of reasoned action', which describes the relationship between the attitude and the behaviour of an individual. The theory has three constructs, behavioral intention, attitude and subjective norm. It advocates that an individual's behavior is determined by his intention to perform the behavior, and that the intention is in turn a function of his attitude toward the behavior and his subjective norm (Fishbein and Ajzen, 1975).

The theory assumes that attitude is a core determinant of a person's intention to perform the behavior in question and that a person's behavioral intention is dependent on his attitude about the behavior and subjective norms. This implies that when an individual intends to do a behavior then it is likely that he will do it. The theory provided the theoretical rationale for identifying teachers' behavioral intentions and attitudes toward the behavior, subjective norms, and the respective determinants of their attitudes toward the behavior and subjective norms. According to (Kreitner, et al., (2007), there are three components of attitudes: affective, cognitive and behavioural. The affective component is a feeling and emotion one has towards an object or situation. The cognitive component is the knowledge and skills one has about an object or situation, while the behavioural component of attitude on the other hand symbolizes how one plans to act or behave towards circumstance someone or something (Kreitner & Kinicki, 2007). In most situations, the three components appear concurrently to shape teachers' classroom postures, through direct and indirect interaction between society, school and teachers (Leite, 1994).

There have been a number of studies which have shown that teachers' attitudes and performances have a crucial role to play in their teaching and the educational achievements of their students, (Al Harthy, et al., (2013); Ahmad, et al., (2013); Shah, (2013) and Vundi, et al., (2011)). Similarly, Mattoo & Buchoo, 2014; Chandrakant, 2014; Ahmed, (1989) and Abdullah, et al, 2006) examined attitudes teachers towards teaching and the factors that affects the professional performance of teachers at higher education level. They found out that there is a significant relationship between attitude and performance of teachers as well as academic achievements of students; and that teachers who possess positive attitudes perform better in the teaching process than those with negative attitudes. Their positive attitudes towards teaching made them punctual in school, respect their colleagues and students alike and engages in academic activities enthusiastically. On the contrary, teachers with negative attitudes tend to exhibit behaviours that are not in tandem with the objectives of their institutions (Iwu, et al., 2013). The studies are mostly found in Asia, there are few in Africa but none in Nigeria so far. Although the studies were on teachers' attitude, they dwelled more on teachers in English language, computers education and science subjects, but none in the area of technical and vocational education and perhaps engineering drawing in Nigeria. The purpose of this study is therefore to investigate the influence of teachers' attitude on their occupational task performance in teaching engineering drawing in tertiary institutions running technical education programs in Nigerian, based on the three components of attitude (affective, cognitive and behavior)

Statement Of The Problem

The poor and differential scholastic achievements of students in technical drawing courses in technical colleges and other tertiary institutions in Nigeria have been a continuous source of concern (Abdulwahab & Usman, 2014; Igbinomwanhia, and Aliu, 2013). Another problem concurrently predominant in schools is that of teachers having a negative attitude, a weak motivation which makes the teaching and learning process to be very deplorable and less efficient. Consequently, negative attitudes and poor motivations affect teachers' performance which results to poor student's achievement (Buabeng, et al., 2014 Ahmed & Hussain, 2012; Edomwonyi-Otu & Avaa, 2011 and et al., 2009). There is little literature on the influence of attitude on Nigerian technical teachers' performance. It is therefore not known if technical students' poor performance is as a result of their teachers' attitude. Therefore, based on the gap identified in this study, the researchers attempt to explore the influence of teachers' attitudes on their occupational task performance in Federal Colleges of Education in Nigeria.

Research Question

1. What is the current level of teachers' performance in teaching engineering drawing?
2. What are the attitudes of technical education teachers towards teaching engineering drawing subjects in Nigerian tertiary institutions?
3. Is there any significant difference between teachers and students rating on teachers' performance in teaching engineering drawing?

Research Hypotheses

H01: There is no statistically significant relationship between technical education teachers' attitudes and their occupational task performance in teaching engineering drawing
H02: There is no statistically significant relationship between teachers' and students ratings on teachers' occupational task performance in teaching engineering drawing

Methodology

This study adopts quantitative descriptive cross-sectional research design to collect information and data from the target population of technical education teachers and students from six tertiary institutions in Northern Nigeria. This is because a descriptive research design attempts to describe, explain and interpret conditions of the present i.e. "what is" (Bhat, 2013). It examines a phenomenon that is occurring at a particular place(s) and time. It is also concerned with conditions, practices, structures, differences or relationships that exist, opinions held, processes that are going on or trends that are evident (Cresswell, 2012; Cohen, et al., 2007 and Babbie, 2012). A cross-sectional study is a study of a particular phenomenon that produces a 'snapshot' of a population at a given point in time. The data for the study was obtained through two sets of questionnaire. The population of the study consists of all the technical education teachers (n=217) and students 1448 from the six tertiary technical education institutions in Nigeria as presented in table 1 below.

Table: 1. Population of technical teachers and sampled students in six tertiary institutions in Northern Nigeria

S/N	Colleges	Teachers' population	Students' population	Sampled Students	Total
1	Federal College of Education (Technical) Bichi	45	266	43	88
2	Federal College of Education (Technical) Gusau	24	88	14	38
3	Federal College of Education (Technical) Potiskum	46	207	33	79
4	Federal College of Education (Techical) Gombe	43	258	41	84
5	Kaduna Polytechnic	38	435	70	108
6	College of Education Minna	21	194	31	52
	Subtotals	**217**	**1448**	**232**	**232**

A non-probability proportionate sampling was used in this study. Proportionate Sampling is a sampling strategy (a method for gathering participants for a study) used when the population is composed of several subgroups that are vastly different in number. The sample of this study was comprised of all the 217 technical education teachers. In order to eliminate doubt and bias from the technical teachers self-rating, a non-probability proportionate sampling was employed to sample 232 technical education students from the six tertiary institutions to rate their technical education teachers' attitudes towards their occupational task performance in teaching engineering drawing making a total of 449 respondents. Table 1 shows the details of the sampling.

Data Analysis And ResultS

Results of the study are presented according to the research questions.

RQ 1. What is the Current Level of Teachers' Performance in Teaching Technical Drawing?

The teachers' level of performance in teaching engineering drawing survey was distributed to 217 technical teachers from the six tertiary institutions runing technical education programmes. The technical teachers were asked to mark their perceived level of performance in teaching engineering drawing by selecting one of the five options provided. The questionnaire items used, along with their corresponding weights, were "Strongly agree" with a weight of 5 points, "agree" with a weight of 4 points, "undecided" with 3 point "Dissagree" with 2 point and "strongly disagree" with 1 point.

1. When the weighted mean is below 1.49, then the overall performance of the element is rated as "very Low".
2. When the weighted mean is between 1.50 and 1.99 then their overall level of performance in teaching engineering drawing is rated as "Low".
3. When the weighted mean is between 2.00 and 2.49, then their overall level of performance in teaching engineering drawing is rated as is "Moderate"
4. When the weighted mean is between 2.50 and 3.49, then their overall level of performance in teaching engineering drawing is rated as "High".
5. When the weighted mean is greater than or equal to 3.50, then their overall level of performance in teaching engineering drawing is rated as "Very High."

Teachers' Level of Performance in Teaching Engineering Drawing Based on the Students and Teachers Self-Ratings

The teachers' current level of performance in teaching engineering drawing was computed based on three components of performance contextual, task and adaptability performance and is presented in table 2.
Generally, the findings show that technical teachers' level of performance in teaching engineering drawing is high.

Table 2: Current Level of Teachers' Performance in Teaching Engineering Drawing

	Items Description	N	Mean Response	Level of Performance
	Contextual Items			
CON1	Technical education courses require a sound Engineering Drawing knowledge and skills.	217	3.08	high
CON2	I hardly cover all Engineering Drawing course contents.in the semester	217	3.12	high
CON3	I use various software applications to facilitate my engineering drawing lesson delivery.	217	2.76	high
CON4	I cannot teach some engineering drawing topics due to non-availability of computer software applications.	217	2.75	high
CON5	I cannot teach some Engineering Drawing course contents because I am not computer literate.	217	2.92	high
CON6	I cannot teach some Engineering Drawing contents because I don't know how to use the required computer applications/soft wares	217	2.83	high

CON7	Supervision of Engineering Drawing lessons in this college is good and effective	217	3.19	high
	Task Items			
TSK1	External moderators make a lot of corrections on my Engineering Drawing questions	217	4.00	Very high
TSK2	More time should be allocated for teaching Engineering Drawing courses.	217	3.88	Very high
TSK3	Class over population retards my efficacy in teaching Engineering Drawing courses.	217	3.45	high
TSK4	I strive to improve my teaching techniques by exploring and employing latest pedagogies in teaching engineering Drawing courses.	217	3.56	Very high
TSK5	I encourage students to ask questions while teaching Engineering Drawing.	217	3.99	Very high
TSK6	I answer students' questions while teaching Engineering Drawing.	217	3.88	Very high
TSK7	The college lacks competent Engineering Drawing teachers.	217	3.72	Very high
TSK8	I try to teach all Engineering Drawing courses effectively.	217	3.73	Very high
	Adaptability Items			
ADP1	Female teachers perform better than their male counter parts in teaching Engineering Drawing courses.	217	2.83	high
ADP2	Teachers are disciplined when their students perform poorly in Engineering Drawing courses.	217	3.18	high
ADP3	I encounter a lot of challenges from my students while teaching Engineering Drawing.	217	3.04	high
ADP4	I revise and practice the contents of my notes before going to deliver Engineering Drawing lessons.	217	2.67	high
ADP5	I only teach the Engineering Drawing topics I understand better and leave the rest.	217	2.60	high

RQ2. What are the attitudes of Engineering Drawing teachers towards teaching the subject in Nigerian technical Colleges of Education?

The model summary table contains the essential information revealing how well the regression model fits or do not fit the study with the observed data. In order to evaluate the current model of the study, the values of R, R square and the adjusted R square were checked. These values reveal that the total variance in the dependent variable is explained by the model. A table 3 shows the value of R is 0.249 and the value of R square is 0.062 which is one of the primary concerns in the model. The R square (0.062) indicates that the total variation in the dependent variable is explained by the independent variable. With regard to this model, only 6% variation of the dependent variable was explained by the independent meaning a weak variation.

Table 3: Teachers' attitudes and their occupational task in teaching Engineering Drawing

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	.249[a]	.062	.057	.59250

a. Predictors: (Constant), Attitude

The model prediction as shown in the AVOVA Table 4 reveals that the dependent variable is significantly well since the P value is 0.000 which is less than 0.05 level of significance. Thus, the regression model has predicted that the outcome variable is statistically significant (i.e. it fits into the model). The null hypothesis states that there is no statistically significant influence of teachers' attitudes on their occupational task performance in teaching engineering drawing. Since the P> 0.05, the null hypothesis is therefore rejected. The researchers conclude that teachers' attitudes have influence on their occupational task performance in teaching engineering drawing.

ANOVA Table 4: Teachers' attitudes and their occupational task in teaching Engineering Drawing

Model		Sum of Squares	df	Mean Square	F	P value.
1	Regression	4.969	1	4.969	14.156	.000[b]
	Residual	75.477	215	.351		
	Total	80.447	216			

3. Is there any significant difference between teachers and students rating on teachers' performance in teaching engineering drawing?

The result of the analysis of variance (ANOVA) in table 5 shows that there was a statistically significant difference across the

groups as determined by one-way ANOVA (F (1,447) = 42.293, p = .000). The decision rule in ANOVA is to reject the null hypothesis of no significance difference among groups if the p-value is less than or equal to .05. From Table 5, the p = 0.000 which is less than 0.001, therefore the ANOVA result further confirmed that there is statistically significant difference between teachers' and students ratings on teachers' occupational task performance in teaching engineering drawing.

Table 5: ANOVA Significant difference between mean teachers' occupational task performance in teaching Engineering Drawing rating on attitudes as rated by teachers and students

	Mean		Sum of Squares	df	Mean Square	F	Sig.
TEACHERS	3.3167	Between Groups	12.524	1	12.524	42.293	.000
STUDENTS	3.6509	Within Groups	132.364	447	.296		
Total	3.4893		144.887	448			

Discussions

The study investigated the influence of teachers' attitudes on their occupational task performance towards teaching engineering drawing. Three research question and two hypotheses were formulated that guided the study. The finding of the research question one indicated that the current level of teachers' performance in teaching engineering drawing has mean scores ranging from 2.60 – 4.00 which is generally high.

The first hypothesis which states that there is no statistically significant relationship between teachers' attitudes and their occupational task performance in teaching engineering drawing has been rejected. The result of the analysis of variance revealed that technical teacher have positive attitude towards teaching engineering drawing, therefore students' poor performance in engineering drawing is not as a result of teachers' attitude. The findings of this study corroborated with the result of Tobergte & Curtis, (2014) who also found out that teachers have positive attitude towards the subject they teach and that poor performance of students could be attributed to other factors. When teachers have positive attitudes towards a subject and in teaching the same, they are likely to teach it well to the understanding of his students which will impliedly improve the performances of their students. And this also indicates that teachers' attitude have a significant influence on their occupational task performance in teaching. Furthermore, this result is in line with the findings of Karr, (2011) and Al Harthy, et al., (2013) who found out that teachers' attitudes have significant direct effect on their professional performance.

One of the objectives of this study was to compare the results of technical teachers' attitudes towards their occupational task performances in teaching engineering drawing based on students' and technical teachers' rating scores. According to the result, a statistically significance difference was observed in the mean scores of the teachers (M= 3.316) and that of the students (M= 3.6509) since the p= value is 0.000. Therefore, the hypothesis that states there is no statistically significant difference between teachers' and students ratings on teachers' occupational task performance in teaching engineering drawing was rejected. This finding is arguable for the fact that teachers might have over rated themselves as a result of pride with regards to their job. On the other hand, students, according many researchers are the best source of assessment of teachers because they are the only people who are directly in contact with the teachers in the classrooms; consequently their opinions about their teachers with regards to their teaching characteristics, classroom instructional performances are considered the best (Yusoff., 2013; Emery, et al., 2003; Bonitz, 2011 and Amini M, 2008).

Based on these results, it was therefore recommended that engineering drawing teacher should possessed a good mastery and develops positive feelings and emotion towards the subject they teach which will in turn improve their performance in teaching the course as reported in the literature. Training and retraining should be organized regularly in order to enhance their competencies in their engineering drawing courses.

Conclusion

This study was carried out to investigate the influence of teachers' attitude on their occupational task performance in teaching engineering drawing. Teachers' attitude was found to have a significant influence on their occupational task performance in teaching. Technical teachers' current level of performance in teaching engineering drawing was found to be high. The performance of teachers in teaching engineering drawing was measured in three dimensions contextual task and adaptability performances. Further, teachers' attitude was also measured based on the three components such as affective (feeling and emotions), cognitive (knowledge and skills and their behavior towards engineering drawing course. One short coming of the current study is that it covers teachers of tertiary institutions and that the influence of teachers' attitude on their occupational task performance in teaching engineering drawing was significant but weak (.062). Therefore, further research to determine the impact of each of the three attitudinal components on technical teachers' occupational task performance in teaching engineering drawing is required. The study conclude by suggesting for training and retraining of technical teachers in order to enhanced their competencies in engineering drawing being a compulsory courses in engineering and technical education fields.

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