



JOB SATISFACTION OF TECHNOLOGY AND ENGINEERING INSTRUCTORS IN NIGERIA: STRATEGY FOR POVERTY REDUCTION

K.R.E. OKOYE AND OKWELLE P. CHIJOKE

Professor of Electrical/Electronics Technology Vocational Education Department
Electrical/Electronic Unit Nnamdi Azikiwe University, Awka, Nigeria.
Senior Lecturer, Electrical/Electronics Technology Science & Technical Education Department
Rivers State University of Science and Technology, Port Harcourt, Nigeria.

Abstract:

This research was conducted to find out the possible strategies and professional measures that could be adopted to enhance job satisfaction of technology and engineering instructors in Nigeria vis-à-vis reducing poverty in the country. The research sought answers to two research questions. And one null hypothesis was tested at 0.05 level of significance. Twenty nine item questionnaire organised into two sections was used for data collection. A population of 109 technology and engineering instructors randomly selected from tertiary institutions in South-Eastern Nigeria responded to the questionnaire. Data collected were analysed utilizing frequency counts, mean and t-test statistics. Based on the findings of the research, some recommendations were made.

KEYWORDS-

Job satisfaction, poverty reduction, professional measures, technology and engineering instructors.

INTRODUCTION

For the past four decades, modern technology has appeared to become the primary source of national power, prosperity, and strategy. As such, every nation scrambles for technological and developmental capabilities among nations. These gaps between nations have given rise to international political controversies as various nations seek to exercise control over science and technology (McIntyre, 1986). This control, McIntyre, further stated, is achieved through the costly and sustained investment in national civilian/military research and development establishments designed to generate, develop, and diffuse new inventions. Nations that lack such an autonomous capability for technological development merely rely on the technology transfer process and eventually diffusion and assimilation of foreign technologies, with constraints often times attached.

It is important to note that most nations have professionals who could impart the state of the art technologies through instruction and designs. These professionals could most likely comprise the technologists and engineers. Therefore, a means to enhance job satisfaction of this calibre of professionals in any work environment should occupy a pride of place in any nation's economic plan.

Work can be seen as an activity such as a job, in which individuals use their intellect and hands to produce something, of economic value (Procter, 1996). Any undertaking, which an individual commits a substantial part of his time and effort for the purpose of earning a living, is his work (Mkpa, 2001). That is

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to say, human-kind in a capitalist society does not freely consent to do work but is constrained to do so in order to earn a living. Therefore, to achieve success in matters involving work and work environment, some basic job attributes must be met. For instance, work in itself should be satisfying. This implies that an individual should be proud of the work done and not necessarily only for the material benefits that accrue there from (Federal Government of Nigeria, 1993).

Like any other worker, job satisfaction of the technologist and the engineer hinges on physiological, psychological, economic and social needs which manifest in a work environment. If a work environment transcends positive psychological and physiological feelings in the worker, it is likely that the worker would develop positive attitude towards the environment and subsequently become mentally and socially fulfilled. Thus job satisfaction is favoured when workers have interest in what they do and also when the job and the work environment are pleasant to the worker. To evoke such interest, many scholars for example, Eze (1981) posited that, attractive salaries, job security, fringe benefits, promotion opportunities, recognition of long service in terms of awards, provision of good working facilities and equipment promote job satisfaction. Good relationship with superiors and subordinates could also enhance job satisfaction among workers (Eze, 1990).

Unfortunately, one of the major defects in the educational system of most developing countries like Nigeria is the low priority accorded to institutional instructors (Momoh, 2008; Uwaifo, 2010). However, a common phenomenon is that if technology and engineering instructors experience job satisfaction in Nigeria, more efforts will be made for greater efficiency in the fields of technology and engineering education. With adequate investment in technology and engineering studies and research, it is obvious that poverty among the people will reduce to appreciable extent in Nigeria.

Poverty is viewed as a reflection of glaring defects in the economy as evidenced in mass penury pauperization of the working and professional class including among other things, poor welfare conditions (Central Bank of Nigeria, 1999, as cited in Amesi, 2010). A nation that is bedevilled by poverty is underdeveloped and characterized by many factors including offering low income for its citizens thus inhibiting their purchasing power (Aina, 2002). "Poverty reduction" is often used as a short-hand for promoting economic growth that will permanently lift as many people as possible over a poverty line (Owen 2009). As a poverty reduction measure, there is need to create a working environment that encourages skilled personnel in engineering and technology to stay with their respective organisations. It is imperative because there is every likelihood that this set of professionals will gain more insight and improve on their creative abilities and entrepreneurial skills which in turn would increase productivity. According to Morrison (2008), the consequences of job satisfaction include better performance and a reduction in withdrawal and counter-productive behaviours. It is expected that when this crop of instructors are happy with their jobs, greater positive impact would be made on the economy of Nigeria (Hodkinson & Issitt, 1995). Thus, this research is carried out to determine the strategies that could necessarily enhance job satisfaction of engineering and technology instructors as a means for poverty reduction in Nigeria.

CONCEPTUAL FRAMEWORK ON JOB SATISFACTION

Job satisfaction refers to a pleasurable and positive emotional state resulting from the appraisal of one's job experiences (Locke, 1976, as cited in Lim, 2008). An individual's total feeling about his job and the attitudes he has towards various aspects or facets of the job, as well as an attitude and perception that could consequently influence the degree of fit between the individual and the organization, is his job satisfaction (Ivancevich & Matteson 2002). In the same vein, Weiss (2002) viewed job satisfaction as a positive (or negative) evaluative judgment one makes about one's job or job situation. A person with high job satisfaction appears to hold generally positive attitudes, and one who is dissatisfied to hold negative attitudes towards their job (Robbins 1993). In particular, acknowledging Robbins' view, Llies and Judge (2004) remark that job satisfaction is also an attitudinal concept reflecting one's evaluation about one's job, as well as, an emotional reaction to it.

One's job experience can be appraised in relation to some independent variables of the work environment which may include the individual's relationship with co-workers, dignity of job done, opportunity for promotion and the pay package accruing from job services (Ukeje, Akabogu & Ndu, 1992). Ukeje et al (1992) were of the view that individuals feel satisfied with the job they do if the pay package is commensurate with the job services they render and also when compared with the pay package of others who are in a similar job condition in other job apartments. They concluded that people become dissatisfied if any difference is experienced. This is the case in Nigeria where Federal government employees go home with fat envelopes as salary as and far bigger than the pay package of the state and local government employees. Most state and local government workers express dissatisfaction in comparison to Federal workers. The difference usually is not in qualification but in established policy in the country. Hence,

people of the same qualification and rank go home with different net pays monthly as determined by the level of government at which they are employed.

In another instance, popular views postulate that work itself gives joy to the engaged workers if the job offers adequate mental challenge by way of creating opportunity for utilization of skills and; allowing some measures of autonomy for expression of personal initiative and ingenuity. Booth (2005) and Buchmann & Dallton (2002) maintained that when these attributes are rewarded, it tends to bring satisfaction to people engaged in a job. This is to say, workers feel fulfilled when they perceive that their job permits the attainment of their desire and needs and as well reward them. Therefore, the level of job satisfaction depends on the differences between workers' expectations from an organisation and what the organisation offers. According to Lumley, Coetzee, Tlandinyane and Ferreira (2011), job satisfaction consists of factors which range from satisfaction with the extrinsic (materials) and intrinsic (non-materials) aspects of the job to interpersonal relations, work environment and educational provisions. In this understanding, one assumes that the dignity of work/job done and the provision specified of such job offering to fulfil an employee's occupational needs form part of the source of job satisfaction to the employee. As Isoun (2006) put it, the degree of worker's satisfaction while at work determines the productivity rate. In other words, job satisfaction is a function of the similarity between the welfare scheme of the work environment and the employee's needs, provided that the employee possesses the ability and academic qualification demanded by the work environment.

Though there are many factors that could affect job satisfaction of workers other than pay package, one would want to find out what should be done to achieve job satisfaction of Nigerian technologists and engineers. It is the authors' opinion that adequate measures taken to address the situation will go a long way to forestall the mass drift of potential Nigerian technologists and engineers out of the country for job satisfaction related reasons. This achieved, will impact on the economy of the country and the poverty level of the country might as well improve since this set of professionals would stay on to work for the nation's economic stability.

PURPOSE OF THE STUDY

The Purpose of this research is to investigate how to enhance job satisfaction of technology and engineering educators in Nigeria thus reducing poverty. Specifically, the research is conducted to elicit the opinion of technology and engineering educators on

1. How the condition of service of the technology and engineering instructors could be improved in Nigeria.
2. What could be done to ensure job satisfaction of the technology and engineering instructors in their instructional work environment in order to enhance their effectiveness and productivity in Nigeria.
3. The possible ways relating to the technology and engineering instructors to enhance their career prospects with a view to gaining job satisfaction.

RESEARCH QUESTIONS

1. What reasons make technology and engineering instructors in Nigeria tertiary institutions feel satisfied or dissatisfied in their work places?
2. What strategies could be adopted to improve on the motivation of the technology and engineering instructors in Nigeria tertiary institutions?
3. What professional measures could be implemented to enhance job satisfaction of technology and engineering instructors with respect to their career prospects?

Hypothesis

There will be no statistical significant difference between the mean ratings of the Federal University instructors and the State University Instructors on the Professional measures to enhance job satisfaction of technology and engineering instructors in Nigeria tertiary Institutions ($P < 0.05$).

Method

Descriptive survey research design was adopted to conduct this study. A sub-set of Nigerian professionals (the engineering and technology instructors in the university system) were studied by collecting and analyzing data from them in respect to the objective of the study. As descriptive survey research suggests, the professionals were considered to be representative of the entire people (Akuezulo &

Agu, 2003).

The study was conducted in South Eastern zone of Nigeria. The South Eastern zone is made up of five states. There are nine (9) universities in the zone. Five (5) out of the 9 are state established universities while 4 are of Federal status (see table 1). A newly established federal university that is about a year old was not part of the population. Also employees of the private institutions were not used for the study to avoid biased data since most of such employees bargain their conditions of service. In essence, conditions of service vary among the private owned institutions in Nigeria.

The population comprised 109 technology and engineering instructors selected from Federal and State established universities in the zone. Forty six (46) of the instructors were selected from the Federal universities and 63 from the state universities, however with restricted guide on years of teaching experience. In this guide, instructors below 10years of teaching experience were not given the questionnaire to complete. The 10 years of teaching experience purposefully guided the selection to ensure that a respondent might have witnessed at least two different regimes of his/her institution's administration or has put in some appreciable number of years in the system to make valid opinion/judgement. The selection therefore was made randomly among the oldest instructors available at the time of the study.

At both state and Federal institutions (universities), respondents were drawn from engineering and technology faculties and from related practical oriented departments such as technology and vocational education departments. Table 1 shows the population distribution.

Table 1

Population Distribution Among Institutions Selected for the Study

S/No.	Name of Institution	Status	No. of Respondents
1.	University of Nigeria, Nsukka (UNN)	Federal	16
2.	Federal University of Technology, Owerri (FUTO)	Federal	11
3.	Imo State University Owerri (IMOSU)	Federal	13
4.	Michael Okpara University of Agriculture, Umudike	Federal	07
5	Nnamdi Azikiwe University, Awka (UNIZIK)	Federal	12
6.	Abia State Univeristy, Uturu (ABSU)	State	13
7.	Ebonyi State University, Abakaliki (EBSU)	State	11
8.	Anambra State University, Uli (ANSU)	State	11
9	Enugu State University of Science & Technology, Enugu (ESUT)	State	15
	Total		109

Instrument used for data collection is questionnaire. The questionnaire was presented in two sections with respect to the three research questions that guided the research study. The respondents were made to respond to the items utilizing the five-point likert scale response pattern of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD) representing 5,4,3,2, and 1 respectively. The instrument was validated in respect of its contents and its reliability established using test-retest reliability formula. The reliability co-efficient was found to be 0.99.

The data collected were analysed using, frequency counts, mean and t-test statistics. Pattern of responses were collated using frequency counts and mean statistic was used to answer the three research questions. Decision was taken applying the principles of real lower and real upper limits of the scale values 1 to 5 on the five-point Likert Scale. The t-test statistics formula for unequal samples (Vernoy and Vernoy, 1997) was employed to test the null hypothesis formulated at 0.05 level of significance.

RESULTS

Research Question 1

What reasons make technology and engineering instructors in Nigeria tertiary institutions feel satisfied or dissatisfied in their work places?

Data presented in Table 2 provide answer to this research question.

Table 2
Reason for job satisfaction or Dissatisfaction Among Engineering and Technology Instructors in Nigeria.

S/No	Reason	Federal University Instructors			State University Instructors		
		X	SD	Remark	X	SD	Remark
1	Pay package is commensurate to the quality of job you do.	1.33	0.63	Disagree	1.48	0.74	Disagree
2	Adequate job security is provided for your vocation.	2.63	0.64	Agree	2.73	0.6	Agree
3	Refresher course occasionally organised for instructors to improve	1.3	0.7	Disagree	1.29	0.68	Disagree
4	Teaching load does not permit your personal involvement in research studies.	1.26	0.53	Disagree	2.73	0.51	Agree
5	Students' assessment and grading are independent of bureaucratic intervention by the management.	2.54	0.74	Agree	2.63	0.68	Agree
6	Management of your institution treat staff problems with affection and humanism.	1.87	0.62	Undecided	1.27	0.54	Disagree
7	Management occasionally conduct performance supervision on staff	1.2	0.5	Disagree	1.17	0.46	Disagree
8	Teaching facilities are adequately available for instruction.	2.54	0.52	Disagree	1.17	0.55	Disagree
9	Management provides opportunity for research studies by awarding research grant or research subsidy.	2.85	0.42	Agree	1.30	0.59	Disagree
10	There are much challenges in the teaching/course outlines.	2.74	0.49	Agree	1.24	0.44	Disagree
11	Staff achievements are recognized by the management in form of incentives and gratification.	1.26	0.53	Disagree	1.22	0.52	Disagree
12	Staff versus management and staff versus staff relationships are cordial in your institution	2.33	0.56	Undecided	1.97	0.31	Undecided
13	Management usually co-opt instructors during the planning stage of educational activities in your institution.	2.78	0.47	Agree	2.84	0.45	Agree
14	Technology and engineering instructors enjoy autonomy to operate as to facilitate their personal initiative and ingenuity.	1.15	0.47	Disagree	1.24	0.53	Disagree
15	Management occasionally assign you to job responsibility	2.7	0.59	Agree	2.46	0.71	Undecided
16	Salary is regularly paid in your institution.	2.83	0.53	Agree	1.41	0.75	Disagree

As shown in table 2, Federal employees agree with items 2, 5, 9, 10, 13, 15, and 16 as reasons that give them job satisfaction. However, the state employees have only 4 reasons that give them job satisfaction. These reasons include items 2, 4, 5, and 13 in table 2.

Research Question 2

What strategies could be adopted to improve on the motivation of the technology and engineering instructors in Nigeria Tertiary Institutions?

The answer to this research question is presented in Table 3.

Table 3. Mean response opinions of the respondents on the Strategies to improve the motivation of technology and engineering instructors.

Item No	Strategy	FUI** n ₁ = 46		SUI** n ₂ = 63	
		X ₁	Decision	X ₂	Decision
17	Organising end of year award parties.	3.31	Undecided	3.41	Undecided
18	Provision of car refurbishing loan to technology and engineering instructors.	3.54	Agree	3.72	Agree
19	Promulgation of laws ensuring job security of technology and engineering instructors	4.87	Strongly Agree	4.57	Strongly Agree
20	Provision of adequate medical health care for technology and engineering instructors and their immediate family members.	3.61	Agree	3.76	Agree
21	Payment of special honourarium to technology and engineering instructors for reputable journal article publications.	4.59	Strongly Agree	4.61	Strongly Agree
22	Payment of entertainment allowance to all categories of technology and engineering instructors.	3.69	Agree	3.76	Agree
23	Introduction of annual research grant to hardworking technology and engineering instructors.	3.11	Undecided	2.16	Disagree

FUI** = Federal University Instructors

SUI** = State University Instructors

Data presented in Table 3 show that both FUI and SUI have strong opinions that item statements 19 and 21 would motivate them to achieve extra feat in engineering and technology fields. Also both parties agree that item statements 18, 20 and 22 would serve as motivation strategy encouraging the instructors to put more efforts in their research studies.

Research Question 3

What professional measures could be implemented to enhance job satisfaction of technology and engineering instructors with respect to their career prospects?

Answer to this research question is presented in Table 4.

Table 4: Mean response ratings of the respondents on professional Measures to enhance job satisfaction of technology and Engineering Instructors.

Item No	Professional Measure	FUI** n ₁ = 46		SUI** n ₂ - 63	
		X ₁	Decision	X ₂	Decision
24	Government/Management should... Create opportunities enabling technology and engineering instructors participate in international conferences, seminars, workshops and symposia for mastery and intellectual advancement.	3.61	Agree	3.75	Agree
25	Provide various in-service training programmes (refresher course) for technology and engineering instructors.	3.85	Agree	4.14	Agree
26	Create avenues enabling technology and engineering instructors participate in decision making on technological and scientific affairs.	2.63	Undecided	3.94	Undecided
27	Create involvement opportunities within the country or over-seas country for technology and engineering instructors to learn the art in design of modern technology equipment.	4.54	Strongly Agree	4.68	Strongly Agree
28	Grant over-seas country sponsorship to technology and engineering instructors for broader knowledge in related fields of interest.	4.52	Strongly Agree	4.62	Strongly Agree
29	Make selections of best technology and engineering instructors every year to become head of various sectors of the country's technology industries/departments.	4.32	Agree	3.52	Agree

Group mean (FUI) = 3.92; Group mean (SUI) = 4.12; Grand mean = 4.02

Data presented in Table 4 show that the Federal University Instructors (FUI) strongly agrees with two professional measures, agree with three and were undecided on one. On the other hand, the State University Instructors (SUI) Strongly Agree with two measures and agrees with three other measures. They were undecided on one of the measures. On average and with grand mean of 4.02, both groups have generally agreed that all the six professional measures identified for this study should definitely enhance job satisfaction of the technology and engineering instructors if Nigeria government should consider implementing such measures.

Hypothesis

Ho: There will be no statistical significant difference between the mean ratings of the Federal University instructors and the State University Instructors on the Professional measures to enhance job satisfaction of technology and engineering instructors in Nigeria tertiary Institutions (P<0.05).

Table 5: t-test analysis on Professional measures to enhance Job Satisfaction of Technology and Engineering Instructors in Nigeria Tertiary Institutions

Item No	Professional Measure	Mean Response Rating		Standard Deviation			Decision
		FUI	SUI	FUI	SUI	2 - Tail Test	
		n ₁ = 46	n ₂ = 63	S ₁	S ₂		
24	Government management should... create opportunities enabling technology and engineering instructors participate in international conferences, seminars, workshops and symposia for mastery and intellectual advancement.	3.61	3.75	1.3248	0.9994	-0.589	Ho; Accepted
25	provide various in-service training programmes for technology and engineering instructors.	3.85	4.14	1.1731	0.7374	-1.489	Ho; Accepted
26	create avenues enabling technology and engineering instructors participate in decision making on technological and scientific affairs.	2.63	3.94	1.4041	0.7593	-5.678	Ho; Rejected
27	create involvement opportunities within the country or over-seas country for technology and engineering instructors to learn the art in design of modern technology equipment	4.54	4.68	0.7213	0.7582	-0.965	Ho; Accepted
28	grant over-seas country sponsorship to technology and engineering instructors for broader knowledge in related fields of interest.	4.52	4.62	0.5864	0.6822	-0.796	Ho; Accepted
29	make selections of best technology and engineering instructors every year to become head of various sectors of the country's technology industries/departments.	4.39	3.57	0.5765	1.0582	5.157	Ho; Rejected

t-cal value < t-table value; decision: Accept H₀ t-cal value > t-table value; decision: Reject H₀
 t-table = 1.960 at P < 0.05 and df = 107

Result of the t-test analysis presented in table 5 reveals that the Federal University Instructors (FUI) and State University Instructors (SUI) did not differ significantly in their ratings to 4 professional measures to enhance job satisfaction of technology and engineering instructors in Nigeria tertiary institutions. The null hypothesis of no significant difference was thus accepted with regards to the 4 items given at P < 0.05, df = 107 and t-table value of 1.980. The result also indicates that there was significant difference between the two group respondents with reference to two professional measures given at the same conditions. As a result, the null hypothesis of no significant difference in the mean response ratings of the respondents was rejected in relation to the two items.

DISCUSSIONS

In general, the findings suggest significant relationships between the job satisfaction and some salient variables. Table 2 confirm that the reasons for job satisfaction are different in many respects among the Federal and State University employees. What is prevalent in the interest of the Federal government employees is not attributable to the State government employees in Nigeria. However, both Federal and State University employees agree that pay package is not commensurate to the quality of job they render/do. This finding is in conformity with the views of Ukeje, Akabogu & Ndu (1992) and Yang, Miao, Zhu, Sun, Liu, & Wu, (2008) that individuals feel satisfied with the job they do if the pay package is commensurate with the job services they render and also when compared with the pay package of others who are in a similar job condition in other job apartments. As Ezugu (2007) put it, job satisfaction is not simply a matter of need fulfilment, it depends on whether the individual involved thinks that the condition for fulfilling his/her needs in a particular job compares favourably with that of other people in similar job positions or places. The finding also agrees with equity approach to job satisfaction presented by Cameroun (1985) that even when an individual's needs are fulfilled by his job offering, such individual might not express satisfaction if he feels that some comparable jobs; 1) satisfy his needs better. 2) satisfy his needs with less or minimal effort. 3) are more fulfilling to known colleagues who engage in such kind of jobs. This justifies the earlier assumption by the researcher that the dignity of work done and the provision specified of such job offering to fulfil an employee's occupational needs form part of the source of job satisfaction to the employee.

Further, it is discovered that lack of occasional refresher course for instructors to improve is another reason for job dissatisfaction among Nigerian University instructors. This informs that if refresher course is occasionally organised to enable instructors' improvement, they would be happy at work. This observation supports Madu (2003) who asserted that employees feel happy and satisfied at work when the job management occasionally organise refresher course for them. In another dimension, instructors become lackadaisical at work when the facilities for effective teaching are lacking (Dike, 2003). Deductively, it is then clear that the provisions made at the work environment to enable workers perform their job effectively and creditably too, form part of the strong holds of job satisfaction.

Another finding by implication shows that if workers achievements are recognized and rewarded through incentives and gratification, they would derive job satisfaction. This finding buttressed up an assertion by Anele (2005) that an employee tends to be energized into greater dedication to duty as a result of good state of mind due acknowledgement that his worth is valued by the organisation that employed him by rewarding his effort. Supporting this view, Spector (2008) averred that contingent rewards support the reinforcement theory of motivation, in terms of which performance-relevant behaviours will increase in frequency if rewarded. According to Dike (2001), such workers are more conscientious at work. Emekwue (2000) admitted that sense of responsibility at work is duly inspired in a worker if the employee is treated to adequate gratification over his good efforts in an organisation. This contentment/belief goes a long way to confirm one of the findings of the study (see Table 3) that payment of special honorarium to technology and engineering instructors will enhance their job satisfaction and encourage them for greater achievements.

These findings appear to make an emphatic premise which gives support to what was earlier suggested by Okoye (1999), that showing gratification to technologists and engineers through award of national honours will to a reasonable extent encourage them to become more conscientious, morally dedicated and painstaking in their job offerings. In this respect, it is expected that they would develop more positive attitude towards work. This positive attitude towards work will definitely propel them into performing optimally and also subject them to longing for innovative breakthrough in technology and engineering fields. When this is achieved, the country would go an extra mile in meeting up with the current day rapid changes and development in science and technology.

CONCLUSION AND RECOMMENDATIONS

In respect of the findings of this research bothering on strategies and professional measures to enhance job satisfaction of technology and engineering instructors, and the need for professional advancement among engineers and technologists in Nigeria, It is obvious that success in evoking job satisfaction in technology and engineering instructors and making them become professionally adequate by implementing the professional measures identified in this research will to a high degree pave ways for Nigeria to join the band-wagon of the developed countries for technological know-how. It is therefore, recommended that,

1. Every effort should be made by the governments to ensure job security of the technology and engineering instructors and special honorarium paid to them for any reputable journal articles published based on research and/or gratify their good efforts. In this process, they could conceive a deserving sense of self-worth and pride, hinged on strong conviction that hard work, integrity and a high sense of moral value are the hallmarks of success.
2. Opportunities should be created by the state and federal governments especially for the technology and engineering instructors. Such opportunities should enable these crop of instructors attend seminars, workshops, symposia, conferences and also make industrial trips within the country and to over-seas countries for professional enhancement.
3. The state and federal governments should jointly consider it an issue of great priority the provision of all the necessary infrastructures, equipment, machines, tools and other consumable materials needed to implement an effective technology and engineering instruction in the country's tertiary institutions.

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