BRIDGING THE GAP IN THEORY AND PRACTICE FOR SKILL ACQUISITION IN AUTOMOBILE TECHNOLOGY

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Abstract

This paper intends to explain the various major short comings that have created a wide gap between theory and practice in the teaching and learning of automobile technology. Automobile technology courses should be taught using theory and practical methods, side by side, as one of the main technical education programmeswhich aimsat skill acquisition.There is the need to bridge the gap between theory and practice. Tothis certain recommendations are made, among which are thatgovernment policy towards provision of infrastructures, such as workshops, and laboratories, student's poor participation and lack of interest. Poor enumeration for teaching and technical staff, late and non adequate provision of equipment and teaching materialsnon recognition of practical works. But emphasizing on theory which have created gap between theory and practice.

Automobile technology is a subject taught and studied in tertiary institutions and schools. Automobile technology is a skill oriented subject taughtwith emphasis on theory and practice, and is concerned how to maintain, manage and repair motor vehicles to enhance their life span. Various skills are taught to students in automobile technology. It combines theory and practical work to achieve its objectives through the use of appropriate instructional materials.

Okorieand Ezeji(1985), asserted that in educational programme, when students will be engaged in practical work or tasks which have to do with repairs of whatever nature, be it individually or in groups, some unique methods of evaluating such activities are required,to determine the existing gap between theory and practice. It is through the evaluations carried out that the individuals, authorities and all those concerned will identify the existing gap and put up needed efforts to bridge it.

Automobile technology teachers in today's classrooms have multiple responsibilities that continually require more knowledge and experience than were needed in the previous years. Since the purpose of the curriculum is to prepare students for maximum vocational and academic skills through the use of the most current equipment and materials,for this gap to be bridged, automobile technology teachers must be proficient in their trade and subject areas and must employ both established and innovative teaching techniques and methods to balance the difference.

Some useful skills for emerging job roles in automobile technology trade would definitely constitute a need to automobile teachers. Supporting this view,Milanosich(1986), stated that being an effective technical teacher today means having knowledge and experience in areas such as: specific skills areas, instructional planning, implementation, and evaluation of classroom and workshop management.

The National Board for Technical Education (NBTE) was established to carry out among other functions, the determination after consulting with the national man power board, the industrial training fund and such other bodies as it considers appropriate, the skilled and middle level manpower needs of the country in the industrial, commercial and other relevant fields for the purpose of planning, training and in particular to prepare and co-ordinate development of theory and practice for

skill acquisition in automobile technology by transferring theory learnt into practical works, which will at the end, enable the individual passing out of school to be self reliant as a skilled person.

Concept of Automobile Technology

Automobile technology is a skill-acquisition based course that requires the application of the three domins namely, affective, cognitive and psychomotor respectively. Practical skills knowledge require the application of psychomotor domain to illustrate the importance, psychomotor domain is concerned with objective that involves application of skills.

This psychomotor domin, according to Okoro (1993) is very useful in technical and vocational education, were the aim of the lesson or course is to impart technology information and development of practical skills.The nature of technical education is such that it involves both theoretical aspect of illustration and practical application being necessary for and therefore, proceeding the practical order of operation. In order words, the theoretical aspect serves as a necessary pre-learning for the practical base. The theoretical base is therefore, regarded as the most, elementary level in the psycho productive classification.

Another characteristic of technical and technology education is that the behaviour in terms of practical aspect are sequential and are logically linked in the sense that one little step must be taken before another and the totality of such steps complete a given task or job. This type according to Gagne (1970) in Adah (2011) is called chaining and is most applicable to technical and technology subjects most especially motor vehicles technology in which motor vehicles technology practical involve one another , since the part are connected to one another in which parts are connected to one after the other. In these chaining methods, several bits of actions or behaviors lead to the output of the entire sequence. The chaining method or process leading to a terminal behavior is illustrated below in a table 1the learner needs an understanding of the scope of what he is expected to do. Therefore, the actual handling and manipulation of instrument in technology disciplines depends on knowledge of terminologies relative to the task or job and the knowledge of the scope of the task and its specification.

There is urgent need to bridge the gap between theory and practice since the automobile technology is a practical-oriented subjects that requires special skills to teach and impart knowledge to the learners.

Table 1: Chaining Method of Cleaning and Replacing Sparkplugs

S/No	Steps in Performing Task	Types of Performance
1.	Note The Plug Location Relative Recall	
	To The Cylinder	
2.	Remove All Spark Plugs	Manipulation
3.	Identify The Types Of Plug	Problem Solving
4.	Decide Whether To Adjust Or	Manipulation
	Replace Plugs	
5.	Clean Plugs If Necessary	Manipulation
6.	Adjust Plugs Appropriate	Manipulation
7.	Replace Spark Plugs In Engine	Manipulation
8.	Connect Ignition Wire Engine To Appropriate Plugs	Recall And Manipulation
9.	Check for Performance	Discrimination.
10	Clean Tools and Equipment.	Manipulation

Source: Major and Beach (1967)

Meaning of Practical Skills

Hornby advanced learners dictionary (1993) defined "practical as concerned with practice and action rather than theory. It also referred to "skill" as ability to do something well. Practical skills are the abilities to observing, hypothesis, analyzing formulation and drawing inferences. Practical skill is much more remembered than theory. Practical skills aim is to make students uses eye to observe and learn how to describe their observation as well as how to find things out for themselves. Automobile technology vehicle are stunted in Nigeria because of the inadequacy in the utilization of practical skills. According to Solomon (1989), practical work brings students beyond knowledge and comprehension to the distinctive character of technical education through the manual work. In any technical subjects, the degree of success is highly dependent on the correct use of practical skills towards productive work.

Ndu (1993), opined that the most promoted roles of practical skills entails:

1. to promote effective learning activities.
2. to promote effective manipulative skills
3. to promote effective good memory
4. to promote effective creativity
5. to promote effective organization skills
6. to promote effective communication skill
7. to promote effective power observation
8. to promote relation between form and function
9. to promote effective experimental and drawing inferences.

For the above roles to be achieved and be effectively practicalized by students, the teachers of automobile technology must possess necessary competent skills, abilities and attitudes required to impart knowledge. These include the followings.

a. Adequate updating of their knowledge of modern automobile technology in the changing world.
b. Educational knowledge relating to psychological characteristics of the students
c. knowledge of processes involved in learning and how to promote them.
d. motivation or re-enforcement of learning, to awaken the interest of the student.
e. skills for applying and presentation.

Above all, they must possess technical skills including management and organizational themselves.

Problems of Practical Skills in Automobile Technology

The problem of practical skills in automobile technology cannot be over emphasized.

Some of the common hindrances observed based on experience are enumerated below.

1. lack of adequate tools and equipment,
2. lack of standard workshop and working environment,
3. lack of trained workshop attendant and skilled field personnel.
4. students poor performance,
5. poor management and organization of the technical agents and
6. lack of basic knowledge in automobile vehicles technology.

Automobile technology industries advances daily in their technical attainment between the interval of five and ten years.Therefore, the needs to train and always retrain staff personnel who are expected to teach and impart the knowledge become very necessary. Modern tools and equipment should always be purchase to enable the workshop attendants and students carry out their practical works freely. Students should be motivated and encouraged participating in practical works as they do in theory.

Government Policy

Policy can be defined as a course of action adopted and pursued by a government.Policy can further be defined as the instrument by which the meaning of the law, the current wishes of the people and the requirements of science and act are brought to bear upon the services of education on how to modify and implement new educational programmed.

Federal Government of Nigeria (2004),the national policy on education is aimed towards the study of technologies, related sciences and act and acquisition of practical skills.The policy went on to emphasis the needs to provide the following at pre technical and vocational education level. Enabling youths to have an intelligent understanding of increasing complicity of technology in.

i. General education
ii. Theory and related courses
iii. Workshop practice
iv. Industrial training and production work
v. Small business management and entrepreneurial training.

In the process of implementing government policy on the need to bridge the gap between theory and practice, pre technical and vocational education is to provide a balanced structure of transferring theory to practice based on government policy, such that anything the student might have read through in a paper can be perfectly put into physical practice. This can only be achieve when adequate infrastructure and materials are provided.

Provision of Infrastructures

The mere sight of buildings does not completely interprete that the building is adequatelyequipped.Structures without needed equipment, tools and material do any way make meaning in educational development.

Automobile technology as a course or trade is generally advancing in technological development, such that most of the equipment and tools provided by the government can no longer meet the needs of modern technology in auto mobile cycles.The need to bridge the gap between theory and practice will require a lot of financial implications. Most of the motor vehiclesbeen used now have improved advanced technology systems, electrical to cooling system, lubrication, steering and suspensions.They have all undergo improvements, as such the students and teachers who are to learn and put the above into practice need to have enough knowledge, skills to translate theory to practice.

In an attempt to bridge the gap those who are to use the needed equipment, tool and materials should be contact on what and what to purchase, that will improve and enhance students practical skills.

Summary and Conclusion

Teaching and learning of automobile technology are done by means of theory and practice. To acquired the neededskills in automobile technology.Government policy in formulating curriculum should be self centered, such that the gap the gap between theory and practice is brought to minimum level. Provision of training materials, infrastructures, such as workshops, equipment and training of personel will enhance students in full participation of practical skills. Technical teachers deserve allowances like hazard, overtime andsupervision of student's project. In a situations where training materials are only provided at the end of the semester discourage students participation and will only encourage learning based on theory given by the teacher. Thereby widen the gap between theory and practice. Government attention is therefore, is drawn into the current existing gap between theory and practice in automobile courses

Recommendations

The following recommendations are made towards bridging the gap between theory and practice with view to reduce the gap.

1. Time table- The schools and institutions offering courses in automobile technology should allocate enough time for practical purposes.
2. The workshop environment should be provided with enough space and free gang ways made clear to avoid and reduce accidents by those using them.
3. Staff teaching and assisting in automobile and technical subjects should be motivated encouraged and their salaries enhanced.
4. Provision of training materials, tools and equipment should be made adequate and available as at when due and not at the end of the semester or terms.
5. Government policy on teaching of subjects or courses having practical works should be made compulsory, that before a student moves to the next level, he/ she must have acquired a certain skills.
6. Students offering technical courses must undergo the Students Industrial Working Experience programme(SIWES) for the period of two to four months, to improve on their skill acquisition.

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