ON SOME FUNCTIONAL CATEGORIES IN ÒGBAHÙ DIALECT OF ÌGBÒ

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Abstract

This paper presents a Minimalist Programme (MP) analysis of some functional categories in Ògbahù dialect of the Ìgbò language. Ìgbò language is one of the three major languages of Nigeria, West Africa. The purpose of this study is to highlight and establish their existence in Ògbahù. These functional categories (functors) are tense, aspect, negation, agreement and question markers. The study reveals that both tense and aspect exist as functional categories in Ògbahù dialect, contrary to earlier works on Ìgbò which claimed that ‘Aspect’ rather than ‘Tense is explicitly marked in Ìgbò. The presence of -lV suffix as the morphological marking of past tense is an indication that Tense and V movement exist in Ògbahù, a dialect of the Ìgbò language. The study further reveals the existence of the E/-A- prefix as a default negative agreement marker in Ògbahù. It occurs because V-movement to TASP is blocked by NEG and leaves T empty thereby allowing a default agreement to surface. This is contrary to the workings in the MP that specify that the DP subject will move from its source position as the specifier of the VP to Spec-AgrsP position. The basic clause structure of Chomsky (1995b) is therefore modified in this study to accommodate idiosyncratic features of the Ògbahù dialect. This is different from English and other European languages where the verb must move to Agrs from T. It is also revealed in this work that there is no semantic or pragmatic difference between the two interrogative structures attestable in the dialect.

A grammatical category is a class of expressions, which shares a common set of grammatical properties (Radford, 1997b). Grammatical categories have been divided into lexical categories and functional categories (Chomsky 1981, 1995b, Radford 1997a and b, etc). The lexical and functional dichotomy is noted in the distinction drawn between two different types of words – namely contentives or content words and functors or function words (Radford, 1997a:45). Contentives are words that have idiosyncratic descriptive contents or sense properties while functors are words, which serve primarily to carry information about the grammatical properties of expressions within the sentence. Content words that belong to the lexical categories are noun, verb,
adjective, adverb and preposition (Radford 1997a:45), while those belonging to the functional categories (functors) are negators, tense, aspect, complementizers, determiners, emphatic markers, imperative markers, focus markers, conjunctions/disjunctions and genitive markers (Awoyale, 1995:115).

In this paper, we shall give a detailed discussion of some of these functors in order to highlight and establish their existence in Ògbahù dialect of Ìgbò.

**Functors in Ògbahù Dialect**
The following functors are found in Ògbahù, dialect of Ìgbò:

(i) Tense
(ii) Agreement
(iii) Aspect
(iv) Question markers
(v) Negation

It has been a subject of controversy whether the functional category ‘Tense’ exists in Ìgbò. Earlier grammatical works on Ìgbò (cf Emenanjo, 1978) have claimed that ‘Aspect’ rather than ‘Tense’ is explicitly marked in Ìgbò. On the contrary, in Ògbahù dialect, both Tense and Aspect exist as functional categories. The existence of both Tense and Aspect as functional projections, as well as Negation (Neg) and Agreement (Agr) in Ògbahù dialect is demonstrated below:

The following data show different verb forms with different inflectional affixes:

1. Òbi gbùlù agū.
   Òbi gbù-IV agū
   Òbi ‘kill –IV (pst) lion
   Òbi ‘killed a lion’.

2. Òbi egbuona agū.
   Òbi e-gbu – o – na agū
   Òbi Agr-kill – Ovs – perf lion
   Òbi ‘has killed a lion’.

3. Òbi egbùhọ agū.
   Òbi e-gbū – họ agū
   Òbi ‘did not kill a lion.’

   Nwa zà-lị un∅
   3pl sweep - IV (pst) house
‘They swept the house’.

5. Nwa ìlàààna nni.
   Nwa à – zà – a – na nni

   3pl Agr-sweep – Ovs – perf house
   ‘They have swept the house’.

6. O lìlì nni.
   O lìlì nni
   3sgcl. eat – lV (pst) food
   ‘He/she/ ate food’.

7. O lìēna nni.
   O lì – e – na nni
   3sgcl. eat Ovs – perf. food
   ‘He/she/ has eaten food’.

8. Ò lìhù nni.
   Ò lì – hù nni
   3sgcl. eat – Neg food
   ‘He/she/ did not eat food’.

The presence of –lV suffix as the morphological marking of past tense as in examples 1, 4 and 6 is an indication that Tense and V movement exist in Ògbahù, a dialect of the Ìgbò language.

**Tense Markers**

Tense is the specification of the event to the time of speaking about it. Tense is a grammatical category that relates the time of an event to the moment of utterance. The notion of tense has to do with time relation between the events. Comrie (1985) says ‘tense is a grammaticalised expression of location in time. Lyons (1968:305) observes that:

*The essential characteristic of the category of tense is that it relates the time of an action, event or state of affairs referred to in the sentence to the time of utterance, the time of utterance being now.*

A model can perceive, recall or anticipate an event. Therefore, there are only three possible other relationships between events and any axis of orientation, the axis of orientation being the point of initiation of speech or the point present, the ‘now’ of utterance (Lyons 1968:305). These three other relationships are retrospective point (RP), the time anterior to the time of initiation of speech, anticipated point (AP), the
time posterior to the point of initiation of speech and the point present (PP), the point of initiation of speech (Omamor 1982).

**Tense Markers in Affirmative Sentences in Ògghù Dialect**

Ògghù dialect has lexical items that mark different tenses. Consider the sentences in 1, 4 and 6 above which are reproduced below:

9. Òbi gbù – lù agù.
   'Òbi kill – IV (pst) lion
   ‘Òbi killed a lion’

10. Nwa zà – lì unù
   3pl sweep – IV (pst) house
    ‘They swept the house’.

11. O lì – lì nni
    3sgcl. eat – IV (pst) food
    ‘He/she/ ate food’.

Sentences in examples (9), (10) and (11) are similar. The – IV suffix marks the past tense (-IV(pst)) in each of them. They describe a situation that is definite to the time of utterance.

**Agreement Marker in Sentences**

It is the traditional assumption that the Ìgbò language has no morphologically realized agreement (Agr) marker. However Ògghù dialect has agreement marker (cf Maduagwu 2006). Dechaine (1993) observed that Ìgbò has a default agreement marker E-prefix which occurs only in negative constructs. The default negative agreement marker in Ògghù is the E - /A- prefix which was claimed (cf Maduagwu 2006) to be part of a negative discontinuous morpheme, for instance, ‘e.....gbu....hɔ, a ...ku...hɔ as shown in examples (12) and (13) below:

12. Òbi e – gbù hɔ agù.
    Òbi agr-kill-Neg lion
    ‘Òbi did not kill a lion’.

13. Òbi a – kɔ hɔ ɔkà.
    Òbi agr – plant-Neg maize,
    Òbi did not plant maize’.

The agreement (agr) is in terms of vowel harmony. The vowel harmony group of the verbs stem vowel determines the prefix vowel. The prefix vowel agrees with the stem vowel in terms of vowel harmony. The prefix vowel is ‘E’- if the stem vowel of
[+ATR]) vowel harmony group, but it is the stem vowel if of [-ATR] vowel harmony group, the prefix vowel is ‘A’. The E-/A- prefix therefore, is a default agreement marker because it only occurs with certain kind of subject DPs. It only occurs because V-movement to T is blocked by NEG and leaves T empty thereby allowing a default agreement to surface.

Aspectual Markers

Aspect looks at the internal temporal contour of a situation. It reflects the temporal relationship between either the point of initiation of speech and the internal temporal structure of a specific background situation described by one element and the totality of the situation referred to by another (Omamor 1982:104 – 105). Perfective (perf) aspect will be considered in this paper because it is sometimes erroneously conceived as perfective tense by the Igbo traditional grammarians, using the English parameters.

Aspectual Markers in Ògbahù Affirmative Sentences

The items in examples (5) and (7) are perfective aspect markers identified in Ògbahù affirmative sentences. They are exemplified as (14) and (15) below:

   3pl Agr sweep – Ovs-perf house  
   ‘They have swept the house’.

   She-eat-Ovs- perf food  
   ‘She has eaten food’.

Sentences (14) and (15) above indicate present perfective action. Each of them expresses an action which has been completed in the present. It is realized by affixing the marker V-na. The V- (vowel) prefix is either vowel[e] or vowel [a], but the suffix – na is constant. The vowel prefix agrees with the vowel of the verb stem in terms of vowel harmony. If the verb stem vowel is of [+ATR] vowel harmony group, then the prefix vowel will be [e], but if the prefix vowel is of [-ATR] vowel harmony group, the prefix vowel will be [e].
Question Markers

There are two rather different structures attestable in Ògbahù dialect of Ìgbò for this function. One is very much like a \textit{wh} – question in English, the other is a little more than a noun phrase preceded by the interrogative relative clause morpheme \textit{kèdu}.

The two constructions attestable in Ògbahù for questions (other than yes/no questions) are illustrated below:

16. \textbf{Wh-movement:} \textit{gini kà i mèlì?}  
What that you do-(pst)  
What that you did  
What did you do?

17. \textbf{Relative/interrogative Clause:} \textit{kèdu ife i mèlì?}  
What thing you do-(past)  
What thing you did  
What did you do?

There is no semantic or pragmatic difference between the two structures i.e examples (16) and (17) above.

Negation

Negation is a process or construction in grammatical and semantic analysis that typically expresses the contradiction of some of the sentence meaning (crystal, 1980). Consider the following sentences:

18. \textit{Ìzù dʒù - lù ᐃsē Òbi.}  
\textit{Ìzù} ask - lV(pst) well-being Obi  
‘Ìzù asked after Obi’.

19. \textit{Òbi e - gbū - hɔ ᐄgū.}  
‘Obi Agr – kill – Neg lion  
‘Obi did not kill a lion’.

Example (18) asserts that Ìzù asked after Obi but, example (19) says, Obi did not kill a lion. Example (19) is therefore, a negative sentence with an overt negative market hɔ.
Payne (1992:75) notes that negation is a universal category. One of the most striking features of negation in natural language is its syntactic ubiquity. Virtually all linguistic categories from clause to individual word can, in principle be negated; although in practice, individual languages display arbitrary restrictions (Payne ibid). English language possesses a form of standard negation, whose primary function is to negate the positive declarative clauses of the language. In English, standard negation is either the negative particle not following a finite auxiliary verb as in example (20a) below or the bound negative morpheme – n’t attached to a finite auxiliary verb as in example (20b) below:

20(a) Mary is not lazy. 
(b) Mary isn’t lazy.

If no auxiliary verb is present, then the relevant form of the auxiliary do (do, does, or did according to tense and person) is inserted to effect the negation as in example (21) below:

21 (a) I love him. 
(b) I did not/ don’t love him.

In Standard Yorùbá, negation is marked by the following negators: kò/ò, kì, má and kó as shown in the following sentences:

22(a) Wálé kò/ò rí iṣé. 
Wale neg see work
Wale is jobless’.
(b) A kì iṣé 
We neg pron do it
‘We don’t do it’.
(c) Má rà á.
neg buy it
‘Do not buy it’.
(d) Adé kó ni o fun 
Adé neg foc mkr you give’
‘Adé is not the person that you gave’.

Let us consider some Ògbahù examples using minimalist programme (MP) framework. The structure of the basic clause within the MP is given in (23) below.
Consider the following sentences in view of the discussion so far:

24. ògò gòlò onú

ògò count –IV(pst) mouth

‘ògò took a count of /counted’.
The verb gùlù merges with its DP complement onù ‘mouth’ to form the v-bar gùlù onù ‘counted mouth’. This in turn merges with the D specifier Ìgò to form the VP (25) below, following the VP Internal Subject Hypothesis.

The VP (25) then merges with Tense/ Aspect to form a TASP-bar and the D(P) Ìgò is then raised to become the subject of this TASP¹. Consequently, it leaves behind a trace tj, at the Spec of VP as shown in (26) below.
Each of the lexical items in (26) above contains some grammatical features: head feature and Specifier features, which are stated below:
For convergence to take place, the uninterpretable features will have to be checked and erased. If any of the uninterpretable features fails to be checked, the derivation will crash.

The determiner Õgò checks its complement features at the spec of TASPP and moves from there to the specifier of Agrsp to check its nominative case head-feature leaving behind an immediate trace tj. The head-feature of the verb ãlù ‘counted’ says it is a transitive verb, which must sub-categorise for a DP object. Ònù ‘mouth’; the object of the verb ãlù ‘counted’. The verb ãlù ‘counted’ moves from its position as the head of the VP, adjoins to the Agro to check off its accusative case head – feature with that of the Agro leaving behind a trace tj. Thereafter, it moves from the Agro position adjoins to the TASP to check off its Tense/Aspect features and at the same time check off its specifier features that specify that it must have a DP subject.

The specifier feature is eliminated by the same feature found in the D or its trace tj at the specifier of TASP. The verb leaves behind at the adjoined position an intermediate trace t’j. The derivation is shown in the tree diagram in (27) below:
Revisions of the Minimalist Programme

The E-/A-prefix is a default agreement marker in Ògbahù dialect because it occurs only with a specific type of subject DPs. It occurs because V-movement to TASP is blocked by NEG and leaves T empty thereby allowing a default agreement to surface. This is contrary to the workings in the MP that specify that the DP subject will move from its source position as the specifier of the VP to the Spec – AgrsP position. For this
reason, Ọgbahù dialect of Ìgbò is quite different from English and other European languages where the verb must move to Agrs from T. Because of the unique features of the verb in Ọgbahù dialect, we revise the MP so that the movement of the verb to the Agrs mode is parameterized to languages where the verb does not have agreement features such as Ọgbahù dialect will not mandate the verb to raise to Agrs. Ọnụ ‘mouth’ has only head-features in this derivation. The head features specify that it must check off its accusative case features, hence it moves from its object position to the specifier of AgroP. It is the only position where the accusative case features can be checked and eliminated.

**Modification of Basic Clause Structure of Chomsky (1995b)**

The basic clause structure of Chomsky (1995b) cannot work for Ọgbahù dialect negative sentences. Because of this, the structure of the basic clause of Chomsky (1995b) must be revised to allow for the idiosyncratic features of Ọgbahù dialect. The structure of the basic clause is revised in (28) below to accommodate the idiosyncratic features of Ọgbahù dialect:

28. CP
    Spec
    C₁
    Spec
    C
    Spec
    AgrP
    Spec
    Agrs₁
    Agrs
    TASP P
    Tasp
    AgroP
    Spec
    Agro₁
    Agro
    Neg P
    Spec
    Neg₁
    Neg
    VP
    Subject
    V₁
    V
    Object
The difference between (27) and (28) is that the TASP dominates NegP in (27), while reverse is the case in (28). AgroP dominates NegP. The Minimalist Programme allows bare phrase rather than X-bar, hence there is nothing to tell us that all phrases should have the same structure. Instead, each kind of head might project differently in different sentences. Each lexical item is the minimal projection and it can constitute a phrase by itself (Chomsky, 1995b:242). MP also abandoned the system of modules that characterize PPT. To make up for these, there are economy principles which are motivated by the idea that syntax prefers the minimal way of doing whatever has to be done.

**Justification for the Application of Minimalist Programme in the Study**

The bedrock of MP is morphological features. These features are associated with tense, case, agreement, negation etc. Radford (1997a) refers to these features as grammatical features and divides them into three: head-features, complement features and specifier-features. We adopt Radford’s terms in our discussion of features checking because of its explicit nature.

We adopt the Minimalist Framework because it leaves open what principles determine the hierarchical ordering of the various XPs of the structure of the basic clause as we have in (27) above. The advantage of this is that the ordering of various XPs is language specific. We also adopt Minimalist Programme because it claims that differences between languages are attributed to differences between the features of lexical items in languages. Therefore, the difference between Ògbahù dialect where AgroP precedes the NegP and that of English, where the TP precedes the NegP has to do with morphological features. There is a default agreement marker in Ògbahù dialect.

Since the primary goal of the Minimalist Framework is the requirement that linguistic theory should provide grammars which make use of the minimal theoretical apparatus required to provide a descriptively adequate characterisation of linguistic phenomena (Radford, 1997b:6), the MP is able to successfully and adequately handle the various forms of each of the functional categories identified without necessarily postulating abstract level of D-structure and S-structure of PPT framework.

**Conclusion**

This study has been able to highlight and establish the existence of some functional categories (functors) in Ògbahù dialect of Ìgbò. These functors are tense, aspect, negation, agreement and question markers. The basic clause structure of Chomsky (1995b) cannot work for Ògbahù dialect negative sentences. It is therefore, revised in this work to accommodate the idiosyncratic features of Ògbahù dialect.
References


THE NEED FOR PRACTICAL AND COGNITIVE SKILLS FOR EMPLOYABILITY OF TECHNOLOGY GRADUATES

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Abstract
In every society be it primitive or modern, people need to develop their knowledge and skills on a continuous basis to enable them live and work meaningfully, to contribute to the development of their society. For technology education and training to contribute to an individual’s personal development, increased productivity and income at work, it follows that technology institutions have to be well equipped to achieve the maximum benefit of Technical and Vocational Education and Training (TVET). If Nigeria is to meet up with the technologically advanced countries and be self-reliant, the content of the curriculum must cover the three basic educational objectives (domains of learning i.e. cognitive, affective and psychomotor). Provision of abundant training materials and quality teaching manpower will be meaningless without the knowledge of practical skill-oriented technical teaching methods. This paper therefore examines some fundamental strategies to be used in the organization of the learning content of technology education to include the cognitive, affective and psychomotor domains. The paper also highlights other practical methods such as experimental, tutorial and discovery. These will promote the ingenuity in the local technicians and indigenous skilled men and women which will further improve the acquisition of practical skills.

In this era of governments’ transformation agenda, rapid technological advancement and emphasis on education for self-reliance, products of technology education requires cognitive and saleable skills to fit in the modern day industries. Such skills are also vital in terms of preparing students of technology education to be
competent job creators rather than job seekers upon graduation. Nuru (2002) stated that as economic, social and technological changes gather pace, people need to develop their knowledge and skills on a continuous basis through technology education so that they can live and work meaningfully in the knowledge society. The term ‘cognitive’ as a domain of the educational objectives refers to intellectual ability which connotes knowledge or thinking (Ezenwa, 1998).

Technology education is defined by the National Policy on Education (Federal Republic of Nigeria [FRN], 2004) as an aspect of the educational process involving in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding, and knowledge relating to occupations in various sectors of economic and social life. In general terms, technology education, vocational education, technical education, industrial technical education and industrial arts are used interchangeably. The slight variations in these terminologies being the degrees in which the educational attributes are acquired at any given level of the educational experience. Okorie (2000) defined skills as expertness, practical ability, dexterity and tact, an organized sequence of actions, competencies and proficiencies executed in carrying out a given task. Skills are displayed in flexible but systematic temporal pattern.

Education and training contribute to an individual’s personal development, increased productivity and income at work, and facilitates everybody’s participation in economic and social life. It follows that education and training can also help individuals to escape from poverty by providing skills and knowledge to raise output and generate income. But it is disheartening to note that over the years, the vision of vocational/technical/technology education in Nigeria has been bastardized and eventually derailed resulting in the production of half-baked skilled workers who are job seekers rather than employers of labour (Ogie-Aitsabokhai, 2006). Investing in education and training is therefore an investment in the future whereas knowledge and skills is the engine of economic growth and social development.

The Role of Technical and Vocational Education and Training (TVET) in Learning and Skill Development for National Growth

The effort to provide basic education and literacy for all children and adults will underpin the economic and social development of countries by ensuring the capacity of people to learn and provide the foundation for their employability and access to decent work. Technical and vocational education and training (TVET) at both secondary and tertiary education levels is mainly focused on producing readily employable skilled personnel for the labour market. This is why many people, both in the developing and developed world, recognize the important role that TVET plays in equipping individuals with relevant skills and hence enabling people to effectively participate in social,
economic and technological innovation processes. TVET also implies lifelong learning and preparation for responsible citizenship. It is imperative to note that TVET in its broadest definition includes technical education, vocational education, vocational training, on-the-job training or apprenticeship training, delivered in a formal and non-formal way (Netherlands Organization for International Cooperation in Higher Education [NICHE], 2010). A basic requirement for driving the engine of industrial and economic growth is a skilled workforce and TVET holds the key to building this type of entrepreneurial workforce (Afeti, 2009).

Quality TVET helps to develop the individual’s knowledge of science and technology in a broad occupational area requiring technical and professional competencies and specific occupational skills. National TVET system needs to develop the knowledge and skills that will help the workforce become more flexible and responsive to the needs of local labour marketers, while competing in the global economy. Some countries like India, Korea and Japan have introduced TVET reforms that endeavour to integrate work-place-base learning and training into vocational education curriculum. TVET system must also be open and all inclusive to give even the most underprivileged access to learning and training. The opportunity for people in urban and rural communities to equip themselves to lead productive and satisfying lives will undoubtedly be critical to the prosperity and well-being of the community.

In a time of continuous economic, social and technological change, skills and knowledge become quickly out-of-date. People who have not been able to benefit from formal education and training must be given opportunities to acquire skills and knowledge that will give them a second chance in life and at work. Providing all individuals with learning opportunities throughout their lives is an ambitious but necessary undertaking. An all-inclusive lifelong learning system calls for mobilization on increased public and private resources for education and training and for providing individuals and enterprises with the incentives to invest in meeting their learning and skill development needs.

Unesco’s Recommendations on TVET

The Revised Recommendation Concerning Technical and Vocational Education 2001 was adopted by United Nation’s Educational, Scientific and Cultural Organization (UNESCO’s) General Conference at its 31st organization’s session in 2001. The conclusion concerning human resources training and development were adopted by the International Labour Conference at its 88th session in 2000. These texts present internationally acknowledged sound policies and practices on TVET and continuous, lifelong learning and training. The policy strategies are the outcome of extensive consultations between the organization’s Member States, federations of professional associations, employers’ and workers’ organizations, and non-governmental
organizations, their statements have the ambition to guide national decision-makers to develop effective, relevant and equitable policies of education and training. They also seek to engage other stakeholders in TVET including the social partners, in partnerships that support these policies and practices. For instance, one of these recommendations stipulates that education policies should be directed to both the structural and the qualitative improvement of technical and vocational education. In addition, all governments carry the primary responsibility for technical and vocational education; and in a modern market economy technical and vocational education policy design and delivery should be achieved through a new partnership between government, employers, professional associations, industry, employees and their representatives, the local community and non-governmental organizations (NGOs). Furthermore, TVET should serve as the means by which people develop talents, interests, practical and entrepreneurial skills leading to an occupation in various sectors or to further education (UNESCO, 2001). As the titles of these statements suggest, UNESCO’s concern in centred on technical and vocational education which the organization considers an integral part of the global education for all initiative.

The International Labour Organization (ILO) focuses on training for employment, decent work and welfare of workers in the context of global employment addenda. However, the two organizations are aware that education and training are rapidly becoming inseparable, especially as the notion of a job for life is being replaced by the necessity for lifelong learning. TVET is considered a very useful aspect of the education system because of the occupation content it offers the trainees. The emphasis is on acquisition of practical skills for direct-employment. But unfortunately, for years and until very recent times, Nigeria has not given the desired attention to TVET system to enable the sector contribute effectively towards national human resource development for a productive workforce. The issue of practical oriented education therefore should be given proper attention in technology education programmes.

The Need for Adequate Practical Content of Technology Education Programmes

The ideas planted concerning technical and vocational education are still much around the education sector. Though various governments since independence in 1960 tried to emphasize technical education for economic development of the nation, many of the country’s tertiary institutions, colleges of technology and polytechnics still lack adequate practical content in their curriculum (Nkom, 1999). The Federal government has placed much importance on technology education to the well-being of the economy of the country and this is clearly manifested in the National Policy on Education (Federal Republic of Nigeria [FRN], 2004).

Two main aims in the policy’s Article relating specifically to practical content of technology education are:

1. providing the technical knowledge and vocational, technical practical skills necessary for agricultural, industrial, commercial and economic developments; and
to give training and impart the necessary skills leading to the production of craftsmen, technicians, technologists, and other skilled personnel who will be enterprising and self-reliant, respectively (pp. 30 – 31).

This article is concerned with polytechnics, monotechnics, colleges of education (Technical); the universities of technology and their equivalence. These are the tertiary (post-secondary) institutions that truly offer technological programmes.

Technical education programmes are fundamentally practical skills oriented, and hence adequate provision should be made for the practical content of its curriculum and also allowance of improving same. According to Ezenwa (1998) vocational/technical/technology subjects best render themselves to the three domains of knowledge, viz: cognitive, affective and the psychomotor (psychoproductive). He went further to emphasize that the psychoproductive domain dominates the vocational/technical subject and that indeed according to McCloy (1999), seventy five percent (75%) of the technical/technology subjects are of a practical nature; which require technical skill, therefore it is necessary to sustain and improve the practical content of the technology fields of the study.

Having established the importance of practical content in technology education, there is the need to make sure that everything possible is done to ascertain that all the criteria to sustain and improve the practical content are effected, so that it can meet the objective of increasing employability of graduates.

**Improvisation**

The term improvisation has been defined differently by several scholars. Maduabum (1989) defined improvisation as the “act of raising alternative materials or equipment obtainable from local environment or designed and constructed by the teacher to facilitate instruction. According to Ango (1990), improvisation means substituting, replacing, altering a technical material or apparatus for a particular function. To Ada and Okwu (2001), improvisation simply means to provide, make or do something quickly in time of need using whatever is available.

From all the definitions that have been put forward, improvisation means making equipment and materials available in time of need. Therefore, where certain appropriate tools and materials are not available these can be improvised. This aspect can arouse the ingenuity in the local technicians and indigenous skilled men and women and further promote improvement on practical skills.
Delivery System

Perhaps the most potent way of enhancing and improving the practical content in technology/skill education is the appropriateness of the method of teaching workshop practice or the delivery system. Kennedy (2011) listed, “demonstration”, “project method” among others as basic technology teaching methods requiring the use of tools and materials in the practical classes. Technical institutions teaching technology education must produce projects with attendant practical requirements.

However, a well-known set of student-centered technology teaching methods at the tertiary level is the family of workshop practice knows as “instruction sheets”. Instruction sheets were originally developed and used in connection with vocational/technical classes under the title of “job sheets”. The content of the sheets are organized for the purpose of analyzing and presenting instruction in jointed form to enable the learner proceed with less personal attention from the teacher. This methodology is very effective for productive purposes and for the production of functional job or items. There are seven types of instruction sheet-job sheet, project sheet, student plan sheet, operation sheet, assignment sheet, information sheet and programmed instruction sheet. Their names are descriptive. These instruction sheets help the students perform more practical work in the workshop on their own. Students cannot perform practical work without acquiring technical skills.

Organization of Subject Matter in the Teaching of Technology Subjects

This aspect of the delivery system for improving the practical content of technology education at the tertiary level is teacher/lecturer/instructor centred. It is a fundamental pre-requisite to the technology teaching methods enumerated under delivery system stated above. Okelola (1987) itemizes and subdivides them into:

i. The unit method: subject matter unit, experience unit, and resource unit.

ii. Basic unit teaching plan: the unit plan, the project plan, the daily plan and the weekly plan.

Fundamental to all these strategies is the organization of the content for a given course, and the determination of the objectives of the course followed by booking down the objective into desired behaviour at each point. A ‘Unit’ is seen as major sub-division of a course or subject matter which is complete in itself and can be taught as a whole. The unit method of teaching technology subjects is the fundamental principle usually behind the construction of the syllabus of technology subjects using the behaviour pattern, indicating skills to be acquired and the overall practical content of the course or project. These could be planned in the timetable on a daily or weekly basis as listed in (ii) above. There is also the need to approach these methods through concise lesson plans and scheme of work.
The experience (competency-oriented) method in workshop practice entails the following:

i. Designing, sketching and drawing the project to be produced.
ii. Full list of hand and machine tools to be used
iii. Cutting list of material required.
iv. Sequence of operations, construction, and completion of the project

Other practical methods include the experimental, tutorial and discovery methods. Ezenwa’s competency-based project-oriented method of workshop classes is a typical example of comprehensive practical skills organization system of teaching.

**Linkage with Industry**

No country is an island on its own says Bill Clinton former President of the United States of America, during a session marking the fiftieth anniversary of United Nations. In the same vein, no technological institution is infinitely fully equipped to acquire all the desired practical skills, without reaching out in Nigeria. The main linkage between technological institutions and the industries is through the Students Industrial Work Experience Scheme (SIWES), a supervised practical training period and an on-the-job scheme for various durations undertaken in relevant industries by students. It is funded by the industrial training fund (ITF) and supervised by the institution. The objective of SIWES is “to expose the students to work methods not taught in the institution and to provide access to projection equipment, materials and practical skills not normally available in the college environment”. Indigenous to successful SIWES industries where supervisors are cooperative, students enjoy the opportunity of using advanced modern tools or materials to acquire new skills which are invariably transferred back to the college.

**Conclusion**

Technology education is the most capital intensive of all types of education. The resources to improve the practical content in the system, such as tools and raw materials, cannot be obtained without adequate funding. Adequate funds should be externally and internally generated. Both the public and private sectors of the economy must fund technology education adequately.

The need for tertiary institutions to improve on the practical content of technology education cannot be over emphasized. There is the need to produce basic and secondary needs, if Nigeria is to catch-up with the technologically advanced countries and be self reliant and, this cannot be achieved without practical skills. There is the need for appropriate workshop delivery system or technical teaching methods as the main strategies that would allow for adequate use of tools and qualified technical staff in a conducive workshop/laboratory atmosphere. Abundance of training materials
and qualified teaching manpower will be meaningless without the knowledge of practical, skill-oriented technical teaching methods.

However, there should be an improvement in practical content through appropriate delivery system at the tertiary level of the educational system, so that the practical content is not just only on paper, but actually taught in the institutions and it will enhance employability of technology graduates in Nigeria.

The era of holders of National Diploma (ND), Higher National Diploma (HND) or first or second degrees in technology without practical skills content or competence must stop. Functional technology education remains the fulcrum of economic advancement globally.

References


The Need for Practical and Cognitive Skills for Employability of Technology Graduates –
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