

Language Dimension to Improving Quality Technology Education for National Development: Teacher Educators' Perception of Nigeria's Language Education Policy

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Abstract

Education has been identified as the bedrock of the development of any nation. It is also a known fact that all education programmes always have a language dimension to them hence the need for language education policy. The study, therefore, focused on teacher educators' perception of Nigeria's language education policy on imparting the needed technical vocational skills and pedagogy for graduates' self-reliance, empowerment of semi-skilled practitioners and national development. The study was guided by four research objectives which included: finding out the teacher educators' perception of language education provision on technology education in Nigeria; determining the language to be combined with English in technology education classroom; identifying the challenges in the adoption of bilingual education model for teaching and learning of technology education; and identifying the strategies for the adoption of bilingual education as an alternative model in the teaching and learning of technology education in Nigeria with four corresponding research questions. A survey research design was adopted for the study. The population for the study was 87 technology teacher educators, 10 technologists and 10 technicians from Federal Colleges of Education (Technical) Bichi, Kano who were all selected as

respondents.

The instrument for data collection was a self-designed structured questionnaire. The data for the research was analyzed using mean and standard deviation. It was discovered that combining the Language of the Immediate Community with English in technology education instruction will not only improve the quality of its delivery but will also empower the products with ample opportunity for easy technology transfer between them and the semi-skilled practitioners both when in school and after graduation. It was recommended among others that technology teacher educators should make skillful use of bilingual education approach in their instruction delivery for optimal output.

Keywords: language, technology education, national development, language in education, graduates; self-reliance

Introduction

Language, according to Crystal (2008), is viewed as the abstract system underlying the collective totality of the speech/writing behaviour of a community or the knowledge of this system by an individual. Language is not only an instrument for communicating effectively but also an instrument of thought. This probably accounts for the reason why

Sapir (1921), cited in Adegbite (2003), maintained that language is the only road to thinking.

This implies that most of what man does using his intellect are done in the medium of language, and more often in his mother tongue. Education is about all-round development of a child to become a productive and useful member of the society in which he lives. Closely underlying this kind of education is technology education which, according to Beal (2021), is the study of technology. The author explained further that it is designed to teach students to be prepared for a number of technology-related fields, and to learn about technology within specific fields of study. At the centre of the acquisition, and transmission of technology education, is language education question since no knowledge process is implemented successfully without at least a language of instruction.

Technology education is recognised as a key component of the Nigerian education (FRN, 2014). It should be stressed that technology education is synonymous to technical education in educational context. According to Aghenta (1985) cited in Bappah, Auwal and Yakubu (2021), technology education is a kind of education that is more science-oriented with emphasis on the application of the scientific and mathematical principles as applied in such fields as engineering, electronics, electrical, mechanical and automobile trades. Kumar et. al (1999) posited that technology consists of two primary components: 1) a physical component which comprises of items such as products, tooling, equipment, blueprints, techniques, and processes; and 2) the informational component which consists of know-how in management, marketing, production, quality control, reliability, skilled labour and functional areas. The implication of the above description of technology is that technology education suggests an area of knowledge that focuses on the study of both the physical and

informational components of technology

as well as the pedagogy of imparting such knowledge on individuals which eventually leads to the production of skilled and semi-skilled individuals needed in higher level and middle level areas of a nation's economy. It is always connected with obtaining certain results, resolving certain problems, completing certain tasks using particular skills, employing knowledge and exploiting assets (Lan and Young, 1996).

The issue of improvement in the quality of education generally, and technology education in particular, has attracted scholarly attention especially given the perceived general decline in the quality of education across virtually all levels of education in Nigeria. There have been questions asked about both the quality of the process and products of the education system in the literature (Aduwa-Ogiegbaen and Iyamu, 2006).

Teachers are major actor in the education process of a nation as they form the fulcrum around which the education lever revolves. The vital place of teachers in the education process is underscored by FRN (2014) when it states that no education system rises above the quality of its teachers. Therefore, the quality of education given to pre-service teachers is a strong determinant of the likely level of progress the country could attain, more especially in the areas of vocational and technology education which emphasise education for individual citizens' and national development. There is, therefore, the need for our technology education programmes to be geared towards the achievement of their core objective which is to promote skills acquisition that leads to wealth creation not only for individual citizens but the country as a whole, hence the need for the present study. There have been two major complaints around graduates of universities in Nigeria from employers of labour: poor mastery of

the English language and lack of requisite job skills (Aduwa-Ogiegbaen and Iyamu, 2006). Despite the fact that the two are key pointers to the poor quality of graduates of not only universities, but also all institutions of higher learning in Nigeria, technology education places much premium on requisite job skills as its emphasis is on acquiring education as a means to a further end, and not as an end in itself. However, most of the technology education graduates in Nigeria's institutions of higher learning who are supposed to be employers of labour after graduation unfortunately end up joining the unending queue of the job -seekers. They cannot compete favourably with their counterparts at the international level. To address this knowledge gap, several solutions have been sought ranging from improving on methodology of teaching, provision of teaching and learning materials to improving the quality of teachers. Little or no attention is paid to language issues as they affect the quality of teaching and learning of technology education hence the need for this study.

Also key to solving an educational problem is drawing on teachers' knowledge of the problem as major stakeholders. Vital as this is, there are very few works on teachers' knowledge of language education policies generally across levels, and specifically language issues in relation to imparting technology education. Therefore, the conduct of this study will not only open up discussion of the nexus between language and technology education but also facilitate the quality and pace of delivery of technology education in Nigeria.

The main purpose of the study is to investigate technology educators' perception of language education policy as a vital determinant of the quality of technology education process, and its products. Specifically, the study sought to:

- 1) Find out the teacher educators' perception of language education provisions on technology education in Nigeria.

- 2) Determine the language to be combined with English in technology education classrooms.

- 3) Identify the challenges in the adoption of bilingual education model for teaching and learning of technology education.

- 4) Identify the strategies for the adoption of bilingual education as an alternative model in the teaching and learning of technology education in Nigeria.

The following research questions guided the study:

- 1) What is the technology teacher educators' perception of Nigeria's language education provision and bilingual education as an alternative model in the teaching and learning of technology education in Nigeria?

- 2) Which language should be combined with English in technology education teaching learning process?

- 3) What are the challenges facing the adoption of bilingual education model for teaching and learning of technology education?

- 4) What are the strategies for the adoption of bilingual education as an alternative model in the teaching and learning of technology education in Nigeria?

Quality is a much talked about concept in the discussion of both the process and products of the Nigerian education system. Quality in the view of Tijjani (2007) is the degree of excellence both in educational inputs and outputs. The vital place of quality in the education offered by various levels of Nigeria's tertiary institutions in terms of the degree of excellence in both the inputs and the relevance of the outputs (products) of the educational system prompted the establishment of Quality Assurance Unit in Universities, Polytechnics and Colleges of education systems with the sole mandate of assuring quality in the entire education process as well as its products.

The concept of technology does not only relate to the technology that embodies in the product but it is also associated with the knowledge or information about its use,

application and the process in developing the product (Bozeman, 2000; Lovell, 1998). The second aspect of the definition above emphasizes technology as a discipline which is here referred to as technology education.

There are as many definitions of technology education as there are specialists in the field. According to Aghenta (1985) cited in Bappah, Auwal and Yakubu (2021), technology education

is a kind of education that is more science-oriented with emphasis on the application of the scientific and mathematical principles as applied in such fields as engineering, electronics, electrical, mechanical and automobile trades. Bappah et al (2021) explained that technology education involves the use of knowledge of science, materials and energy to solve problems, and improve daily lives and our environment. Vital as this type of education is to unlocking the personal and national potentials of citizens and nations respectively, Nigeria has not benefited maximally from the gains inherent in it. Therefore, several questions have been asked around the quality of technology education being provided in Nigeria's institutions of higher learning. One such relevant question is: What role does language play in effective delivery of technology education for optimal output?

According to Igboanusi (2015), language education (used interchangeably with language-in-education) policies in educational context are entirely about educational and ideological regulations of language. It was further explained as referring to the role and use of languages in the educational process of a country either as a subject or as a language of instruction at levels specified by the country's language policy (Salami, 2021). Used in this sense, it refers to the role and use of language in the entire educational process. For a language to function in some roles in the educational process of a country, such roles are usually specified in either a separate language policy document of a country, and or the national policy on education of such

country. While Nigeria does not have its language policies in a separate language policy document, its language policies, language education policies inclusive, are documented in some sections of the 1979 Constitution of the Federal Republic of Nigeria, as amended and the National Policy on Education.

Spolsky (2004) as cited in Lorente (2017) noted that research in language education policy has expanded to include not just top-down, overt and de jure policies expressed through official documents establishing the rationale and the mechanics of language programs or expressing mission statements or curricular, but also bottom-up policies that are not explicit or not established by authority but are derived or inferred from what people do and what people believe in. This second consideration of language education policy is of utmost concern to this study. Salami (2021) noted that with reference to tertiary education, there is no policy statement with regard to either Nigerian languages to be learnt as subjects by all students or to be used as languages of instruction by lecturers although the NCE Minimum Standards and education policy documents of conventional universities provide for the study of a few Nigerian languages such as Hausa, Igbo, Yoruba as courses of study at those levels. In addition, two or more English courses are included as General English courses for students at tertiary level of education.

FRN (1998, 2004) recommended the use of mother tongue or Language of the Immediate Community as languages of instruction at lower primary schools and a gradual transition to English from upper primary school, and this has been the practice for more than two decades now. However, the exclusive use of English especially from

post-primary schools to universities as the language of instruction has been challenged by a number of studies. For instance, Awobuluyi (2010) described it as being inadequate and insisting that nothing short of using mother tongues or Languages of

Immediate Community up till completion of secondary education can guarantee good education for Nigerian children; Owolabi (2011) accounted for it as the reason for the state of underdevelopment of Nigeria in particular and most African countries in general and that really using indigenous languages combined with English in the development process (educational process inclusive) will be more realistic. Also, Fafunwa, Macauley and Funso Sokoya (1989)

succinctly depicted the problem of non-use of African indigenous languages fully in the country's educational process as spelling underdevelopment for the country when they noted that knowledge and skills are imported almost exclusively in foreign languages while the majority of our

people- farmers and craftsmen- perform their daily tasks in Yoruba, Hausa, Igbo, Nupe, Ijaw etc. In the same vein, Bamgbose (2004) and Essien (2006) commenting on the consequences of the adoption of foreign languages as lingual franca and medium of instruction established that such practice will not foster education that guarantees all-round development of a country. Specifically, Bamgbose (2004) noted We frequently forget that without technological culture, the seed of transferred technology will fall on barren ground and fail to grow. One strategy to foster such a culture is to present Science, Technology, and Mathematics to children in their native language from the start. Also, Essien (2006) in line with Bamgbose's position observed that:

"A people who are limited by the language they consider to be their lingual franca are linguistically undernourished children. Like undernourished children, they cannot grow and develop properly. That, I am afraid, is the reality of our situation".

(Essien, 2006, p 14)

All the works reviewed above point to the vital place of the mother tongues or Languages of the Immediate Community in

the educational process, especially technology education, either as the only languages of instruction at some levels of education, or their concurrent use alongside English especially at secondary and tertiary levels.

2. Material and Methods

The study adopted survey research design. The design, according to Cohen, Manion and Morrison (2007), is efficient, easier and allows anonymity and generalization of information from a large population. The population for the study comprised of 87 teacher educators (lecturers), 10 technologists and 10 technicians all from the School of Secondary Education (Technical), Federal College of Education (Technical) Bichi. Purposive sampling technique was used to select 107 respondents comprising of 87 teacher-educators, 10 technologists and 10 technicians. Nwogu (2006) stated that in purposive sampling, specific elements which satisfy some predetermined criteria are selected. The school and the entire population were purposively selected because technology education which is the focus of the study is domiciled in the school and the population is less than 200 and, therefore, can conveniently be managed. This is in line with Israel (1992) who stated that one approach to drawing a sample is to use the entire population (census) if the population size is 200 or less. Thus, a total of 107 copies of Questionnaire on Language Dimension to Improving Quality Technology Education (QLDIQTE) were administered to the respondents with 100 copies returned. The research instrument was face-validated and content-validated by two chief lecturers, one from the Department of English and the other from School of Secondary Education (Technical), Federal College of Education (Technical) Bichi. The questionnaire comprised of two sections All

the works reviewed above point to the vital place of the mother tongues or Languages of the Immediate Community in the educational process, especially technology education, either as the only languages of instruction at some levels of education, or their concurrent use alongside English especially at secondary and tertiary levels. with section A probing into the respondents' bio-data and section B containing the questionnaire items for the respondents. Copies of the questionnaires were administered and retrieved within one week with the support of two research assistants. The responses were based on five points Likert scale. Data collected was analysed using mean and standard deviation with the support of SPSS version 25. Decisions were reached as follows: items with mean scores of 2.50 and above were accepted while those with less than 2.50 were rejected.

3. Results and Discussion

Research Question 1: What is the technology teacher educators' perception of NPE and 1999 Constitution of the Federal Republic of Nigeria's language education provision and bilingual education as an alternative model in the teaching and learning of technology education in Nigeria?

Table 1: Teacher educators' perception of NPE and 1999 Constitution of the Federal Republic of Nigeria's language education provision and bilingual education

ITEM	Mean	SD	Decision
The National Policy on Education and 1999 Constitution of the Federal Republic of Nigeria provide for the use of English as the sole medium of instruction for technology education instruction at secondary and tertiary levels of education.	3.70	.460	Accepted
The National Policy on Education and 1999 Constitution of the Federal Republic of Nigeria as amended provide for progressive use of English alongside Language of Immediate Community (LIC) for technology education at both secondary and tertiary education levels.	3.25	.891	Accepted
There is no provision for language of instruction for technology education for both secondary and tertiary levels of education.	2.82	1.32	Accepted
I am not aware of any such provision.	2.82	1.32	Accepted
I use English as the only medium of instruction for teaching students or conducting practical in my courses.	3.24	.783	Accepted
I combine LIC (Hausa) with English to clarify some concepts or imparting some practical knowledge to the students.	2.92	.740	Accepted
I use LIC (Hausa) because it is more convenient for me and makes students understand better.	2.79	1.05	Accepted
I use LIC (Hausa) because I do not know it is against the language education provision at this level.	2.44	.795	Rejected
The combined use of English and LIC (Bilingual education model) in technology education will make the country advance better technologically.	3.64	.772	Accepted
Adopting bilingual education approach to technology education will create more access to technology transfer from formal to informal sector and vice versa.	3.42	.818	Accepted
Bilingual approach to technology education will enhance skills acquisition and development in preservice teachers.	3.64	.777	Accepted

Table one presents technology teacher educators' perception of NPE and 1999 Constitution of the Federal Republic of Nigeria language education provisions and their views on adoption of bilingual education as an alternative model in the teaching and learning of technology education in Nigeria. A total of 11 items were formulated to address the research question. Of this number, a total of 10 items affirmed that most of the technology teacher-educators were aware of NPE and 1999 Constitution of the Federal Republic of Nigeria language education provisions and supported the use of bilingual education as an alternative model in the teaching and learning of technology education in Nigeria. The above position is in line with Canagarajah (2013) that contends that, in the teaching learning process, talks do not have to be in a single language. The author further submitted that two languages can be used across diverse norms and codes usefully in

an instructional encounter. This is also in tandem with Adegbite (2003) that, when giving his recommendation on education in Nigeria, suggested that both Mother Tongue and Second Language be taught as subjects at all levels of the education system; that a collaborative bilingual medium of instruction be recommended for all levels of education either severally or integratively, in interpreting, translation, or code switching, and that where some indigenous languages do not yet have capacity for higher level of education, a progressive use of such languages should be devised from the lower levels, based on the rate of development.

Research Question 2: Which language should be combined with English in technology education teaching learning process and in what degree?

Table 2: Languages in technology education teaching learning process and their proposed degree of usage

ITEM	Mean	SD	Decision
Language of Immediate Community (LIC)	3.64	.77 2	Accepted
Any native language spoken in the community where a school or an institution is situated.	3.70	.46 0	Accepted
English and LIC should be used for teaching and learning of technology education in the classroom in equal degrees (50% each).	3.56	.49 8	Accepted
English should be used in higher degree of at least 70% -75% with LIC or any native language having 25-30% use for instruction in technology education.	3.24	.74 0	Accepted
The LIC or native language should be used in higher degree by technologists and technicians during practical sessions in workshops.	3.12	.844	Accepted
No other language should be used apart from English.	1.77	.565	Rejected
Students should also be afforded opportunity for interaction in the LIC or native language during pair or group tasks.	3.02	.619	Accepted

As shown in table 2, a total of seven items were formulated to address the question on the

languages to be combined with English in technology education teaching learning process and in what degree? Of the seven items, six were accepted while only one was rejected. This result indicated that most of the participants agreed that technology educators should make use of Language of Immediate Community, or any native language spoken in the community where a school or an institution is situated, and in such cases, the two languages should be used for teaching and learning of technology education in the classroom in equal or varying degrees with preference for 50% or higher use of English by teacher educators as shown by the mean scores for items 3 and 4 in Table 2, 3.56 and 3.24 respectively; and the LIC or native languages to be used in higher degree by technologists and technicians as shown by the mean score for item 5 in Table 2. It is instructive to note that the rejected item is on the use of English as the sole language of instruction in technology education. The result therefore shows that there is high preference for bilingual education medium for technology education instruction that will combine the use of English and Language of Immediate Community or any mother tongues mostly spoken in areas where schools or institutions are located.

The above position is supported by Adegbite (2003) when he notes that:

“ the promotion of indigenous technology such as blacksmithing, dyeing, carving and pot making, and adaptation of foreign technology to African situation are the norm in a

bilingual-bicultural context, rather than technology transfer in the sense of direct importation of both hardware and software from abroad”

(Adegbite, 2003, p 163)

The author noted further that the language of science and technology ought to be accessible to the majority of their practitioners... There is no doubt, he further maintained, that foreign languages will still provide a means of accessing modern technology, exposure to modern technology should be accompanied by the attitude of adaptive consumerism instead of wholesale dependent consumerism. The position is also supported by Mazrui and Mazrui (1998) that linked Africa's intellectual and scientific dependence to its linguistic dependence on the West and, therefore, recommended, in addition to the linguistic quest for

liberation of Africa as a whole, the promotion of African languages, especially in academic, as one of the strategies for promoting greater intellectual and scientific independence from the West.

Research Question 3: What are the challenges facing the adoption of bilingual education model for teaching and learning of technology education?

Table 3: Challenges facing the adoption of bilingual education model for teaching and learning of technology education

ITEM	Mean	SD	Decision
Many of the technology teacher educators may not be proficient in the language of Immediate community or other native languages of the students.	3.25	.821	Accepted
Use of LIC or mother tongue may hinder the students' English skills and this may affect their performance in examinations where they will be required to write in English.	3.29	.573	Accepted
Most Nigerian languages are yet to be developed to serve in that role.	3.32	.839	Accepted
Misunderstanding can easily set in especially when teacher's proficiency in the language(s) is not guaranteed.	3.24	.830	Accepted
Adoption of bilingual approach to technology education may restrict students and teachers to their locality.	3.05	1.03	Accepted
It may also restrict the recruitment and deployment of manpower from one part of the country to another.	3.82	.519	Accepted
It may also hinder national integration effort.	3.63	.485	Accepted

Table 3 presents challenges facing the adoption of bilingual education model for teaching and learning of technology education. A total of seven questions were formulated in relation to the challenges facing its adoption for teaching and learning. The mean scores show that all the seven items are challenges to the adoption of bilingual education approach to teaching and learning of technology education as they are all above 2.50.

The finding of the study is in line with the positions of language scholars that challenged the exclusive use of English from upper primary school to university as the language of instruction: as being inadequate (Awobuluyi, 2010), as accounting for the

state of underdevelopment of Nigeria in particular and most African countries in general (Owolabi 2011) and that really using indigenous languages combined English in the development process will be more realistic (Fafunwa, Macauley and Funso Sokoya, 1989). The challenge is made more vivid by Essien (2006) that notes: "A people who are limited by the language they consider to be their lingual franca are linguistically undernourished children. Like undernourished children, they cannot grow and develop properly. That, I am afraid, is the reality of

our situation”.

(Essien, 2006, p 14)

Research Question 4: What are the strategies for the adoption of bilingual education as an alternative model for the teaching and learning of technology

education in Nigeria?

Table 4: Strategies for the adoption of bilingual education as an alternative model for the teaching and learning of technology education in Nigeria.

ITEM	Mean	SD	Decision
Strengthening the English Language component of General Studies programme in order not to allow gap in students' English proficiency that may arise from combined use of English and LIC or native language	3.37	.691	Accepted
Collaboration between technology education faculty or school in each institution with Nigerian Languages Department for support in implementing bilingual education programme involving those languages	3.37	.691	Accepted
Engagement of experts in Languages and Linguistics in language development exercises that will make the languages better suited for delivering technology education instructions	2.98	1.11	Accepted
Making at least one of the three major Nigerian languages compulsory to be offered and passed at credit level, and a requirement to higher education	2.98	1.11	Accepted
Making the native languages of communities both subjects and languages of instruction at Basic education level, especially in primary schools	3.42	.496	Accepted
Development of language learning materials for teaching Nigerian languages other than the national ones	2.97	.673	Accepted
Strengthening research in Nigerian languages by improved advocacy and creating regional offices for the National Institute for Nigerian Languages	3.70	.460	Accepted

Table 4 shows seven-item strategies for the adoption of bilingual education as an alternative model for the teaching and learning of technology education in Nigeria. All the seven items were accepted by the

participants as strategies for the adoption of bilingual education and all of them will be geared towards improving the quality of technology education that will be imparted on preservice technology education teachers.

Striving to achieve this is vital, and in agreement with Bamgbose (2004) that underscores the importance of developing technological culture and stresses that one way of achieving that is to introduce Science, Technology and Mathematics in the child's own language at the earliest stages of education.

4. Conclusion

The study has underscored the important place of language as an instrument per excellence for effective delivery of technology education for the attainment of national development. The study also identified Nigeria's language education policy and implementation gaps that slowed down learners' skills acquisition pace through technology education. It, therefore, proposes bilingual technology education approach as an alternative to be embraced in all aspects of technology education programme for optimal output in both the trained personnel and products' development.

The following recommendations are hereby put forward in the light of the findings of the study:

- Technology teacher educators should make skillful use of bilingual education approach in their instruction delivery for optimal output.
- More language development efforts should be made on Nigerian languages in order to make them perfectly fit in their new role of combining with English as languages of instruction even at higher level of education.
- Concerted effort should be made by linguists and language experts at translating as many as possible materials on technology and engineering education.
- More avenue should be created for workshops, seminars and exhibitions for both technology teacher educators and students to allow for cross-fertilization of ideas on the both subject content and

pedagogy.

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Declaration of Interest Statement

The author declares that he has no conflict of interests.

References

- Adegbite, W. (2003). Multilingualism and national development. In Oyeleye, L. and Olateju, M. (2003) (Eds.). *Readings in language and literature*. Obafemi Awolowo Press Ltd. 153- 167.
- Aduwa-Ogiegbaen, S.E., Iyamu, O.S. (2006). Factors affecting quality of English language teaching and learning in secondary schools in Nigeria. *College students' journal*. Online version.
- Awobuluyi, O. (2010). Linguistics and nation building. A paper presented at The Professor Ayo Bamgbose Personality Lecture Commissioned by the Linguistics Students Association (LINSAs), University of Ibadan Branch, 23 June, 2010.
- Bamgbose, A. (2004). 'English and inequality: African perspective'. In Segun Awonusi and A. Babalola (Eds.). *The domestication of English in Nigeria (a festschrift in honour of Abiodun Adetugbo)*. University of Lagos Press, Pp 1 – 14.
- Bappah, I. J., Auwal, G. and Yakubu, A. B. ((2021). Technical vocational education and training in Nigeria: Insights from secondary school

- education system. *Bichi journal of vocational education*, 2 (1), 66-78.
- in Nigeria: Insights from secondary school education system. *Bichi journal of vocational education*, 2 (1), 66-78.
- Beal, V. (2021). Technology education (EdTech). Retrieved from <https://www.webopedia.com/definitions/technology-education/>
- Bozeman B. (2000). Technology transfer and public policy: A review of research and theory. *Research Policy* 29, 627-655.
- Canagarajah, S. (2013). Translingual Practice: Global English and Cosmopolitan Relation. Routledge.
- Cohen, B. Manion, C. and Morrison, A. (2007). Essentials of Education and Social Science Research Methods. Masalp Publisher.
- Crystal, D. (2008). A Dictionary of Linguistics and Phonetics. Blackwell Publishing.
- Essien, O. (2006). "Language and the Nigerian reforms agenda". In Ozomekuri Ndimele, Clara
- I. Ikekeonwu and B. M. Mbah (eds.) *Language & economic reforms in Nigeria*. M & J Grand Orbit Communications Ltd & Ernhai Press.
- Fafunwa, A. B., Macauley, J. I. and Funso Sokoya, J. A. (eds.) (1989). *Education in mother tongue: Ife primary education research project*. University Press Limited.
- Federal Republic of Nigeria (1998). *National policy on education, fourth edition*. NERDC.
- Federal Republic of Nigeria (1999). *The constitution*, Federal Government Press.
- Federal Republic of Nigeria (2004). *National policy on education, fifth edition*. NERDC
- Federal Republic of Nigeria (2014). *National Policy on Education, sixth edition*. NERDC.
- Igboanusi, H & Peter, L (2015). The language- in-education politics in Nigeria. *International journal of bilingual education and bilingualism*, 1 (1), 1-16.
- Israel, G. D. (1992) Sampling the Evidence of Extension Programme Impact: program evaluation and organizational development. IFAS, University of Florida.
- Kumar, V. , Kumar, U. and Persaud, A. (1999). Building technological capability through importing technology: The case of Indonesian manufacturing industries. *The Journal of Technology Transfer* 24,81-96. DOI: 10.1023/A:1007728921126.
- Lan, P., & Young, S. (1996). International Technology Transfer Examined at Technology Component Level: A Case Study in China. *Technovation*, 16 (6), 277-286. [http://dx.doi.org/10.1016/0166-4972\(96\)00005-3](http://dx.doi.org/10.1016/0166-4972(96)00005-3).
- Lorente, B. P. (2017). Language-in-education policies and mobile citizens. In *The Routledge handbook of migration and language*. Routledge, 486-500.
- Lovell, S. A. (1998). Technology transfer: Testing a theoretical model of the human, machine, mission, management and medium components. Unpublished M.Sc. thesis. College of Aeronautics, Cranfield University.
- Mazrui A.A. & Mazrui A. M. (1998). *The power of bable: Language and governance in the African experience*. James Currey.
- Israel, G. D. (1992) Sampling the Evidence of Extension Programme Impact: program evaluation and organizational development. IFAS, University of Florida.
- Kumar, V. , Kumar, U. and Persaud, A. (1999). Building technological capability through importing technology: The case of Indonesian manufacturing industries. *The Journal of Technology Transfer* 24,81-96. DOI: 10.1023/A:1007728921126.
- Lan, P., & Young, S. (1996). International Technology Transfer Examined at Technology Component Level: A Case Study in China. *Technovation*, 16 (6), 277-286. [http://dx.doi.org/10.1016/0166-4972\(96\)00005-3](http://dx.doi.org/10.1016/0166-4972(96)00005-3).
- Lorente, B. P. (2017). Language-in-education policies and mobile citizens. In *The Routledge handbook of migration and language*. Routledge, 486-500.

Lovell, S. A. (1998). Technology transfer: Testing a theoretical model of the human, machine, mission, management and medium components. Unpublished M.Sc. thesis. College of Aeronautics, Cranfield University.

Mazrui A.A. & Mazrui A. M. (1998). *The power of bable: Language and governance in the African experience*. James Currey.

Nwogu, B. G. (2006). Educational research, basic issues and methodology. Windom Publisher.

Owolabi, K. (2011). 'Using Africa's indigenous languages as tools for Sustainable development: A pragmatic approach'. A Lead Paper Presented at the 24th Annual Conference of the Linguistic Association of Nigeria, Kano.

Salami H. (2021). "Bridging the gaps in the formulation and implementation of language-in- education policies". Bichi Journal of vocational education 2 (1), 23-33.

Tijjani, I. (2007). "Consolidating teacher production for quality education". A paper presented at the 5th National Conference of Federal College of Education (Technical) Bichi, Kano State, 26th June.