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# Prospects of Implementation of Mathematics Curriculum for Inclusive Basic Education System in Niger State, Nigeria

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## Abstract

*Inclusive basic education is a type of education for all categories of learners without discrimination. This paper discusses the prospect of the implementation of mathematics curriculum in inclusive basic education in Niger State. The study adopted a Cross-sectional descriptive survey research method. The population of the study constituted of all over three thousand lower basic and middle basic (primary schools) school's teachers and administrators from the three senatorial zones in Niger State. Stratified random sampling procedure was employed to obtain three hundred and thirty teachers, and forty-two administrators which constitute the sample for the study. A structured questionnaire titled "Mathematics Education and Inclusive Basic Education Questionnaire MEDIBEQ" was used for data collection. The questionnaire was validated with reliability coefficient of 0.635 using Cronbach alpha-20 ($\alpha_{20}$). The questionnaire was analyzed using percentages (%), means and standard deviation to answer the research questions. Some of the prospects of inclusive basic education are discussed. It was recommended that Communities and parents should be enlightened on the importance of inclusive education in Niger State as means of fostering unity in diversity, enhancing tolerance among learners and improvement of education for all categories of learners and that all children with disabilities should be admitted in public schools in order to encourage and motivate them towards their education.*

**Keywords:** Inclusive education, Basic Education, Primary Schools, Mathematics, Prospects.

## Introduction

Education is an instrument for the achievement of national consciousness, patriotism and unity, social mobility, a potent factor in national development and social engineering. It is all about love, transformation, integrity, discipline, and a life worthy of emulation (Ocheido, 2020). Nigerian constitution emphasizes the right to education for all school age children to acquire at least free basic education as enshrined in the National Policy on Education (FRN, 2013). Basic education is the education meant for children within the age range of 6years plus to 15years plus for duration of 9years spread across three stages as lower basic (1-3); middle basic (4-6) and upper basic (JS1-3). The combination of lower and middle basics is the primary school (1-6). Primary schools are the institutions established for the education of children between the ages of 6 and 11 years plus (FRN, 2013).

Primary school is an institution which provides the intellectual, social and moral experiences through which the learners develop the skills, knowledge, attitudes and interests that shape their abilities to function effectively in the society (Sadiq, 2020). It is meant to be inclusive according to Federal Republic of Nigeria (2013) that all necessary facilities that would provide easy access to education shall provide inclusive education in ordinary/public schools under the UBE scheme. Inclusive education entails an educational system which allowed all students irrespective of their physical and cognitive disabilities to receive instruction in the same educational setting (Attah, n.d). This is because inclusive education connotes an equitable environment of learning where learners with diverse learning and physical abilities stay in the same classroom to learn side by side (Onwuzurike, n.d). The concept of inclusion promotes the active participation of the learner as the primary aim rather than simple placement in the classroom. It also emphasizes the need for changes within the education system and the school to accommodate the learner (National Policy on Inclusive Education, 2017).

Therefore, deliberate attention needs to be given to inclusive basic education schools to enable the pupils acquire the necessary skills, knowledge, attitudes and values for their general development as stated in the policy establishing them. This calls for Niger state government and other stakeholders in the stated to be interested in seen to it that every children of school age go to school for the success of the scheme and meet the goals of inclusiveness of basic education.

The goal of inclusive education as outlined by Attah (n.d) are: To build supportive school community that is able to identify and minimize barriers to learning and participation; To provide education for all

children with diverse learning needs within their structured schools community; To ensure successful learning and social experience competence; To empower children who are hitherto excluded or isolated; To educate more children better; and To enable students to participate in mainstream education to the best of their abilities, and so on. These can only happen when every child of school age is admitted into inclusive basic schools where all children are taught same subjects throughout their study of mathematics is a major subject.

Mathematics is offered to all learners including those with specific learning needs. Inclusive education policy encourages learners with or without ability to acquire literacy, numeracy, and manipulative skills, develop self-expression, self-discipline, self-reliance, develop socialization and attitude, and so on (Nwangi, 2008; Duff, 2022; Awoyale and Niyi, 2023). This is what makes mathematics education a part of an inclusive basic education.

Inclusive mathematics education acknowledges human diversity and involves supporting the diverse learning needs of all students in general mathematics. Therefore, the mathematics curriculum and instruction need to be adaptable so that it is relevant to the specific students' needs in the class. This can take the form of welcoming students' uses of their preferred language, and engaging students in choosing topics to study using mathematics (creating more inclusive learning environments in mathematics Gaille, (2019); Momozoku, Audu, Job and Awoyale (2024). Improving mathematics literacy across diverse populations can lead to better economic outcomes, more informed decision-making, and the development of talent in fields like science, technology, and engineering(Banerjee & Lahiri, 2019; Vasyliev, n.d; Momozoku et al, 2024). This can only be achievedwhere children in inclusive basic education receive all necessary support from everyone to learn mathematics.

**Supportive Services offered to Learners with Specific Learning Difficulties in Inclusive Basic Education Mathematics Classrooms:** Supportive services offered to learners with specific

learning difficulties (SLD) in inclusive basic education aim to provide tailored assistance that enables these students to access the curriculum and succeed in the classroom. In inclusive education settings (Das, 2021; Momozoku, Audu, Tijjani & Ibrahim, 2024). These services may include the following:

Provisions of Individualized Education Plans (IEPs), Special education teachers, Speech and Language Therapists, Peer support and collaboration programs or team work, Counseling and Psychological

Services: Parental Involvement and Training; Assistive technology and so on. Other supportive services are: *Visualization* which can be done with pictures, symbols, diagrams, pictograms, instead of using plain text. Visual is important for children with hearing impairments and intellectual disabilities. *Scaffolding* is a process that allows children solve a problem, complete a task, or achieve a goal that is beyond their individual efforts or capabilities. This method relies on the teacher's help and support through: *Verbal* – Encouragement, praises or positive reward. *Non-verbal* – Facial expression, gestures, body language, and so on. *Physical* – Writing, drawing with students (https://inclusivesolutions.com/). In addition, Laboratory method, *Games, Assignment* which encourages each students to learn independently. It enable students to learn to do things on their own. Conducting *remedial lesson* for slow learners', encourages them to constantly read their books, discourage absenteeism, encourage them to do simple exercises, ; use *educational resources* to facilitate understandings, and so on (Das, 2021; https://inclusivesolutions.com/)

***Barriers to Inclusive Education****:* Despite efforts to implement inclusive education, several factors continue to prevent children from attending school. These barriers range from socioeconomic status of parents, Poverty, stigma and discrimination, distance to schools, lack of knowledge about inclusive practices can discourage families from enrolling their children; other costs associated with schooling can be prohibitive for families; Limited parental education**:** Lack of awareness about the benefits of education, especially for children with disabilities, can hinder school enrollment; Lack of school infrastructure; Language barriers may exist in some areas; Fear, shame and ignorance are reasons for refusal to enroll and bullying ((Weduc, 2022; Moya et al, 2020; Hunt, 2020; Holder, 2017); Lack of guidance can be barrier for school enrollment; and Lack of Understanding of Inclusive Principles preventing them access to mathematics education.

Despite the earlier mentioned barriers and challenges to inclusive basic education in Niger state, there are several rooms for developing inclusive basic education in Niger state presently. The Niger state government of Nigeria has put in place several efforts to promote and improve inclusive basic education, including:

**Prioritizing digitalization**: The state Universal Basic Education Board (NSUBEB) is prioritizing digitalizing the teaching and learning process.

**Standardizing Schools**: NSUBEB is standardizing schools to meet the diverse needs of learners.

**Providing Teaching Materials**: NSUBEB is providing appropriate teaching and learning materials for all learners.

**Collaborating with Stakeholders**: The government is collaborating with the private sector and international development partners to improve governance and service delivery.

**Improving Teachers capacity**: The government is improving the pedagogical and leadership capacities of teachers and principals.

**Filling Teachers Vacancies:** The government is filling teacher vacancies with qualified teachers.

**Improving Teachers Welfare:** The government is improving teachers' welfare to make the teaching profession more attractive.

**Encouraging Community Ownership:** The government is encouraging community members to take ownership of educational facilities and ensure their maintenance.

**Prospects of Inclusive Basic Education in Niger State**

Despite the previously mentioned challenges, there are several opportunities for developing inclusive education in Niger State. The Niger State Government has made commitments to promoting inclusive education some of which are listed below:

**Enlightenment/Sensitization Campaign:** The government has embarked on sensitization of the populace about inclusive basic education and also encouraging them to send their children or wards to schools. This awareness is been through the mass medias and engaging the traditional rulers (emirs, district heads, village heads, ward heads); religious leaders (Imams, Islamic scholars, pastors, bishops); parents, guidance, community leaders; youth leaders and their organizations, teachers and school heads; and non-governmental organizations calling on them to assist in enrolling their children of school age in schools and bringing the out-of school children back to school. This is going to improve the number of educated Niger State indigenes, improve economic fortune of the state and reduces the number of street beggars, hawkers, food vendors, almajiris and others.

**Funding**: Niger State government has secured loan to fund basic education in the State. This is meant to improve infrastructure, facilities, instructional materials, training and recruitment of qualified teachers to schools (Commissioner for education and Executive secretary, Niger State Universal Basic Education Board).

**Collaboration with International development partnership and Non-Governmental Organization***:* The government recognizes their assistance to the establishment of schools, providing funds, training and providing materials and so on. Their contributions to towards basic education have greatly facilitated the rapid development and growth of the state economically.

The of *provision free* uniform, writing and reading materials, exemption from paying any fee what so ever will in no small way boost enrolment, attendance and completion rate of basic school from primary school to junior secondary schools.

***Incentives****:* Government has promised to assist communities, schools and organizations who assist in bringing back to school out-of-school children or those who may assist in advocacy awareness of bringing children of school age to school and schools that register more children will be given some incentives or award.

***Training and Renovation***: Government has embark on the training of teachers on special education and recruitment of more qualified personals to boost inclusive basic education, build more schools to accommodate more learners; renovate and furnished the existing schools with relevant up-to-date furniture's to attract more learners to schools.

***Basic Schools***: Presently, there are over three thousand schools under Niger State Universal Basic Education Board (NSUBEB) spread across the twenty five local government area of the state. This will absorb the teaming population of children of school age. Expansion of existing schools and establishment of schools where there is none will attract stakeholders, parents and guidance to send their wards or children to such schools when completed.

**Research Questions:** The following research questions were formulated to guide the study:

1. How ready are learners in inclusive basic education classrooms to learn mathematics?

2. What are the support services offered to learners with specific learning difficulty in inclusive basic education mathematics classrooms?

3. Why out-of-school children are still common in Niger State with inclusive education in place?

**Methods**

The study adopted a Cross-sectional descriptive survey research method. The population of the study constituted of all lower basic and middle basic (primary schools) schools teachers and administrators from the three senatorial zones in Niger State which comprises of over three thousand basic schools. The Multi-stage stratified random sampling procedure was employed to obtain three hundred and thirty teachers, and forty-two administrators which constitute the sample for the study. A structured questionnaire titled "Mathematics Education and Inclusive Basic Education Questionnaire MEDIBEQ" was used for data collection. A four point Likert's rating scale of Strongly Agree (SA=4), Agree (A=3), Disagree (D=2) and Strongly Disagree (SD=1) was used in measuring the response of the respondents. The questionnaire was validated by three experts in Mathematics, Science and Education department respectively from Federal College of Education, Kontagora-Niger State. The reliability coefficient of the instrument of 0.635 was obtained using Cronbach alpha-20 ($\alpha_{20}$). The questionnaires were administered, collated and data obtained from the respondents were analyzed using percentages (%), means and standard deviation to answer the research questions.

**Result**

The data collected from the study was analyzed using percentages (%), descriptive statistics of means and standard deviation to answer the research questions. The details of the analyses were as follow:

**Research Question 1**: How ready are learners in inclusive Basic education classrooms to learn Mathematics?

***Table 1: Readiness of Learners in Inclusive Basic Education Classrooms to Learn Mathematics***

| Item | A (%) | D (%) | Mean | Std. Dev |
|---|---|---|---|---|
| They are ready to learn mathematics by possessing relevant learning materials. | 292 **(88.5)** | 38 **(11.3)** | 3.8 | 0.7 |
| Their performance in Mathematics is encouraging | 286 **(86.7)** | 44 **(13.3)** | 3.7 | 0.9 |
| Learners attend mathematics classes regularly | 288 **(87.3)** | 42 **(12.7)** | 3.7 | 0.8 |
| Frequent absenteeism from classroom by learners | 123 **(37.3)** | 207 **(62.7)** | 2.6 | 1.8 |
| Learners participated in group work as and when due | 253 **(76.7)** | 77 **(23.3)** | 3.3 | 1.3 |
| **Average Mean** | | | | **3.4** |

Table 1 shows the results of the respondents on items 1, 2, 3 and 5 having percentage ranging from 76.7 to 88.5 with respective corresponding mean that ranges from 3.3 to 3.8 of the readiness of learner in inclusive basic education in classroom to learn mathematics leading to better performance; possesses relevant learning materials and the learners do participates in group work as and at when due. They disagreed in item 4 that learners do absent themselves from classroom frequently with percentage of 37.3 and mean of 62.7.

**Research Question 2**: What are the supportive services offered to learners with specific learning difficulties in inclusive basic education mathematics classrooms?

***Table 2: Supportive Service offered to Learners with Specific Learning Difficulties in inclusive basic education mathematics classrooms***

| Item | A (%) | D (%) | Mean | Std.Dev |
|---|---|---|---|---|
| Adapting the curriculum to better serve all learners in the classroom | 291 **(88.2)** | 39 **(11.8)** | 3.8 | 0.6 |
| Determining and understanding the needs of learners with disability | 276 **(83.6)** | 54 **(16.5)** | 3.7 | 0.7 |
| Breaking learning tasks into small steps for easy delivery | 254 **(77.0)** | 76 **(23.0)** | 3.3 | 1.4 |
| Present information visually and verbally | 254 **(77.0)** | 76 **(23.0)** | 3.5 | 1.1 |
| Create a sense of community in the classroom by involving all the learners in each task | 287 **(87.0)** | 43 **(13.0)** | 3.7 | 0.7 |
| Provide independent practice through individual attention to learners | 280 **(84.8)** | 50 **(15.1)** | 3.6 | 0.9 |
| **Average Mean** | | | | **3.6** |

The result in table 2showed that all the respondents are inagreement with the supportive services offered to learners with specific learning difficulties in inclusive basic education in mathematics classrooms. The results for items 1, 2, 3, 4, 5, and 6 have percentages ranges from 88.2% to 77.0% with means ranges from 3.8 to 3.3. Since their mean response is respectively greater than 2.5, then we concluded that their response is in support of the entire item in the table 2.

**Research Question 3**: Why Out-of-School children are still common in Niger State with inclusive education in place?

***Table 3: Reasons for Out-of-School Children with Inclusive Education in Place***

| Item | A (%) | D (%) | Mean | Std.Dev |
|---|---|---|---|---|
| There is no school sited in the remote and rural areas for children to attend | 206 **(62.4)** | 124 **(37.6)** | 3.2 | 1.0 |
| The population of school age children in the urban areas outnumbered the available established public schools | 251 **(76.1)** | 79 **(23.9)** | 3.5 | 0.9 |
| The location of available schools are far away from children residence | 243 **(73.6)** | 87 **(26.3)** | 3.4 | 1.0 |
| Parents are not interested in the education of their children | 204 **(61.8)** | 126 **(38.2)** | 3.2 | 1.1 |
| The fear of being attacked (insecurity, banditry, kidnapping, and so on) | 257 **(77.9)** | 73**(22.1)** | 3.5 | 1.0 |
| Parent's economic status (begging, hawking, orphan, and so on) | 265 **(80.3)** | 65**(19.6)** | 3.5 | 1.1 |
| **Average Mean** | | | | **3.4** |

Table 3 indicates the responses of respondents agreeing with statements in items 1, 2, 3, 4, 5, and 6. The listed statements in the table are some of the observed reasons why we still have out-of-school school aged children in Niger state.

**Discussion**

The study was conducted to investigate the Prospects of implementation of Mathematics curriculum for Inclusive Basic Education system in Niger State, Nigeria. Based on the analyses of findings, the results of the study showed that mathematics education has great impact at basic education level.

The finding shows that learners' in inclusive basic education classrooms are ready to learn Mathematics as learners attend mathematics classes regularly. This is in line with Vasyliev (n.d); Momozoku et al (2024) and Banerjee and Lahiri (2019) agreed that inclusive education enhance overall student

performance and comprehension, students feel supported, included, and valued, as such actively participate and enjoy learning and frequently attend school. This can lead to improved self-esteem and a positive attitude towards mathematics.

Based on the analyses of the results of the study, it found that supportive services offered to learners with specific learning difficulties include: breaking learning tasks into small steps for easy delivery and create a sense of community in the classroom by involving all the learners in each task. The finding is in agreement with Momozoku et al (2024), Students experience Network (2020) and Inclusive solution (2015) who listed the supportive services rendered include modified teaching strategies, lesson adjustments, alternative assessment methods, special education professionals that that address each student's unique needs; pairing of students with and without learning difficulties which encourages collaboration and mutual assistance; and provision of remedial instruction or provision of extra support during or after school hours, offering learners personalized attention in mathematics.

The results of the study indicated that there are still many children who were not in school despite its inclusiveness either due to parents' economic status, school location and so on. This is in agreement with Weduc (2022) and Holder (2017) which stated that implementation of inclusive basic education is often inconsistent, particularly in rural areas than urban areas as there was no funding or resources to support these policies in practice which creates disparities in access to quality inclusive education across the country. Lack of awareness of the existence of inclusive basic education by parents and communities were these schools were established. Moya et al., (2020) concluded that discipline issues in Inclusive Mathematics Classrooms such as bullying, absenteeism, and others increases the rate of out of school children in inclusive basic education.

**Conclusion**

Basic education is the bed rock on which higher education and other professionals are built. This type of education is known as primary education. Its inclusiveness is to all children of school age 6-11+ to whether able or disable in whatever form. Inclusive education is a system of education that provide equal educational (mathematics) opportunities for all children, including those with special needs, helping them achieve social integration, and provide effective support for their future development. Inclusive education foster unity within and outside the school environment, contributes to a more

harmonious, and will also enable those who acquired it, lead a useful life and equitable society. Inclusive education has the potential to raise people productivity, creativity, and improve income distribution. Inclusive education faces several challenges which can be resolve if the government, schools, administrators, teachers, communities, families and parents come together to embrace it leading to its success and progress. The prospects of inclusive basic education are very enormous for Niger State. This is one of the reasons why the state government is transforming basic education through Niger State Universal Basic Education Board (NSUBEB) in recent time.

**Recommendations**

Inclusive education practiced in Niger State presents a unique opportunity and strengths to all Niger state children to be gainfully educated. Based on the study the following were recommended:

1. Inclusive education demands a lot of special facilities, instructional materials and expertise personnel in the field of special education. Niger state government should provide sufficient fund and putting these variables in place to facilitate the provision of these infrastructures and training of teachers to meet the demand of all categories of learners in this respect.
2. Communities and parents should be enlightened on the importance of inclusive education in Niger state as means of fostering unity in diversity, enhancing tolerance among learners and improvement of education for all categories of learners.
3. All children with disabilities should be admitted in public schools in order to encourage and motivate them towards their education.

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