

Influence of Curriculum Adaptation on Effective Implementation of Physical Education Programs in Nigeria's Special Schools

JOHN, Rifkatu Pam¹

MUBARAK, Umar¹

SANI, M.U.¹

CHOM, E.J.¹

ZAMANI, B.W².

mubfta@gmail.com

07066660066

¹Department of Human Kinetics & Health Education, Ahmadu Bello University, Zaria, Kaduna State, Nigeria

²Department of Physical and Health Education, Federal University of Education, Zaria, Kaduna State, Nigeria

Abstract

This study investigated curriculum adaptation as a determinant of effective implementation of Physical Education (PE) programmes in Nigeria's special schools. A survey research design was adopted. The study population consisted of 1,177 special schools in Nigeria, comprising 2,354 administrators and 1,177 Physical Education teachers. Using multi-stage sampling, 390 respondents were selected. Data were collected through a validated, self-developed questionnaire with a high internal consistency (Cronbach's alpha = 0.824). Chi-square (χ^2) statistics was used to test the hypothesis at a 0.05 level of significance. The results revealed that curriculum adaptation significantly determines the effective implementation of PE programmes in Nigeria's special schools ($\chi^2 = 119.13$, $df = 27$, $p = 0.000$). The study concludes that curriculum adaptation is a critical driver of successful PE implementation, enhancing inclusivity, motor skill acquisition, and psychosocial learning outcomes among students with disabilities. It is recommended that the Federal and State Ministries of Education redesign adaptive PE curricula, mandate continuous professional development for teachers on inclusive instructional strategies, and allocate dedicated funding for adaptive sports equipment.

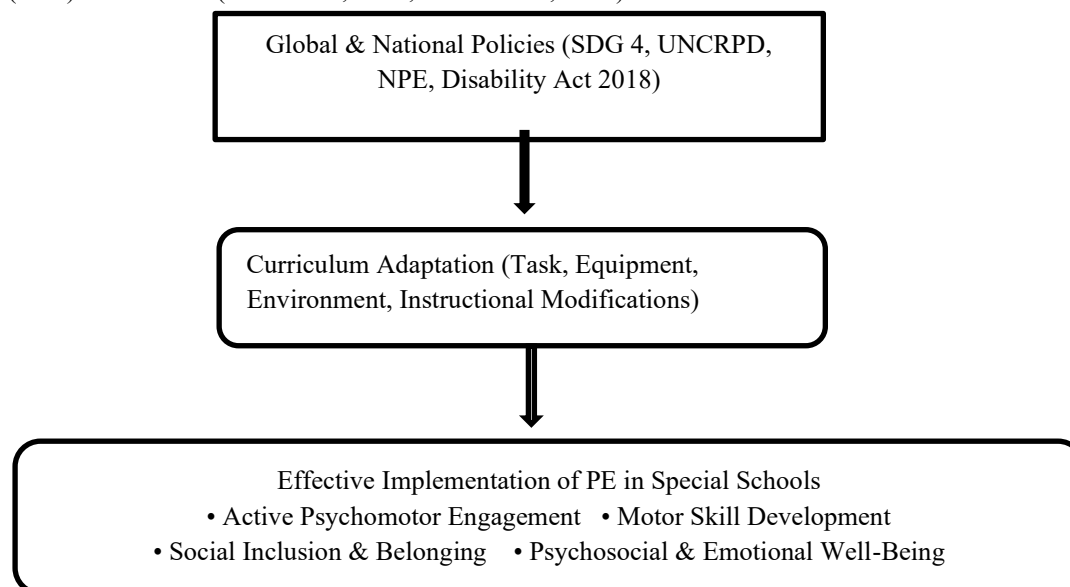
Keywords: Curriculum adaptation, Adapted Physical Education (APE), Special schools, Programme implementation,

Introduction

Education is universally recognized as a fundamental human right, a catalyst for socio-economic development, and a key mechanism for promoting equity and social inclusion. Global policy frameworks, most notably Sustainable Development Goal 4 (SDG 4) of the United Nations 2030 Agenda, explicitly mandate member states to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UNESCO, 2020). Despite this global mandate, learners with disabilities across developing nations, particularly in Sub-Saharan Africa, continue to face deep structural inequities in accessing quality physical and health education (UNESCO, 2021). Physical Education (PE) plays an indispensable role in holistic child development. It is unique within the educational curriculum as it simultaneously addresses the psychomotor, cognitive, and affective domains of learning (World Health Organization [WHO], 2020). For learners with special educational needs and disabilities (SEND) including individuals with visual impairments, hearing impairments, physical disabilities, intellectual impairments, and neurodevelopmental conditions—regular participation in physical activity is vital. It improves cardiovascular health, enhances functional motor skills, reduces secondary health conditions, builds self-efficacy, and fosters social integration (Block, 2016; Haegele & Sutherland, 2015; Lieberman et al., 2020). However, realizing these benefits depends fundamentally on how the curriculum is designed, modified, and delivered. When a rigid, one-size-fits-all PE curriculum designed primarily for neurotypical and able-bodied learners is imposed in special education settings, students with disabilities are systematically marginalized. Curriculum adaptation—the process of modifying instructional objectives, task complexities, environmental settings, equipment, and assessment strategies to match the unique functional capabilities of each learner—serves as the bridge between theoretical inclusion and meaningful pedagogical practice (Sherrill, 2004; Winnick & Porretta, 2017). In Nigeria, the legal and policy foundation for inclusive education is anchored in the National Policy on Education (Federal Ministry of Education [FME], 2013), which emphasizes equal educational opportunities for all children irrespective of physical, sensory, or cognitive challenges. Furthermore, the passage of the Discrimination Against Persons with Disabilities (Prohibition) Act of 2018 formally institutionalized the right of persons with disabilities to accessible education, public infrastructure, and recreational facilities. At the international level, Nigeria is a signatory to the United Nations Convention on the Rights of Persons with

Influence of Curriculum Adaptation on Effective Implementation of ... John, R. P. Et. al., (2026)

Disabilities (UNCRPD, 2006), Article 30 of which specifically mandates state parties to ensure that children with disabilities have equal access to participation in play, recreation, leisure and sports activities within the school system. Despite these legislative instruments, the implementation of Physical Education in Nigeria's special schools remains severely compromised. Historical analyses reveal that physical education in Nigerian schools has predominantly catered to able-bodied students, utilizing standardized sports rules, conventional facilities, and rigid physical fitness measures (Adewumi & Mosaku, 2019; Amusa & Toriola, 2018). In special schools across the six geopolitical zones of Nigeria, PE instruction often degrades into unstructured free play or passive observation due to the absence of formal Adapted Physical Education (APE) frameworks (Abah et al., 2022; Eze & Anih, 2015).



Curriculum adaptation operates within the theoretical framework of Bronfenbrenner's Ecological Systems Theory and Self-Determination Theory (Deci & Ryan, 2000). According to these frameworks, human development and intrinsic motivation are heavily influenced by the interaction between the individual's micro-environment (the school/gymnasium) and the structural support systems provided (adaptive tools, teacher competence and modified tasks). When task demands exceed a learner's functional ability without appropriate adaptations, frustration, withdrawal, and task avoidance follow. Conversely, when task parameters are adapted (e.g., utilizing sound-emitting balls for visually impaired students, lower basket heights for wheelchair users, or simplified task cues for intellectually challenged learners), students experience enhanced competence, autonomy, and engagement (Lieberman et al., 2020; Rose & Ring, 2016).

Systemic barriers to effective PE implementation in Nigeria's special schools include:

1. **Teacher Competence and Pre-Service Preparation:** A significant proportion of PE teachers deployed to special schools are trained in general physical education and lack specialized skills in Adapted Physical Education (APE) pedagogy (Okafor & Adeyemi, 2019; Yusuf & Ibrahim, 2021).
2. **Resource Constraints and Adaptive Equipment:** Most special schools suffer from a chronic deficit of specialized adaptive sports equipment (e.g., bell balls, guide runners, modified racquets, ramp systems) and accessible physical environments (Adewumi, 2015; World Health Organization, 2021).
3. **Rigid Curriculum Structure:** The centralized national curriculum guidelines often lack explicit modules on task modification strategies, leaving teachers without clear protocols to differentiate instruction for diverse disability categories (Ajayi, 2017; Ajobiwe, 2018).

While empirical studies have examined general barriers to inclusive education in Nigeria (Adewumi & Mosaku, 2019; Ajobiwe, 2018), there remains an empirical gap regarding how curriculum adaptation specifically acts as a primary determinant of overall PE programme implementation across special schools nationwide. This study addresses this gap by investigating the extent to which curriculum adaptation determines the effective implementation of Physical Education programmes in Nigeria's special schools.

Objective of the Study



Influence of Curriculum Adaptation on Effective Implementation of ... John, R. P. Et. al., (2026)

The primary objective of this study was to determine the extent to which curriculum adaptation influences the effective implementation of Physical Education programmes in Nigeria's special schools.

Research Hypothesis

To guide the investigation, the following null hypothesis was tested at the 0.05 level of significance:

H₀₁: Curriculum adaptation does not significantly determine the effective implementation of Physical Education programmes in Nigeria's special schools.

Research Methodology

Research Design

A survey research design was adopted for this study. This design allows for the systematic collection of quantitative data from a representative sample across a wide geographical spread, making it suitable for assessing institutional practices, administrative perspectives and instructional implementation patterns across Nigeria's educational zones (Ali, 2021; Creswell & Creswell, 2018).

Population and Sample

The target population comprised all public and accredited private special schools across the six geopolitical zones of Nigeria. According to institutional records from the National Commission for Special Education and disability administrative registers, the study population consisted of 1,177 special schools, encompassing 2,354 school administrators (principals/headteachers and vice-principals) and 1,177 Physical Education teachers (Disability Rights Commission, 2024). Using Adams' (2020) formula for sample size determination in large populations, a total sample of 390 respondents (comprising 260 administrators and 130 PE teachers) was selected. A multi-stage sampling procedure was executed as follows: Stratified Sampling: The country was stratified into the six geopolitical zones (North-West, North-East, North-Central, South-West, South-East, and South-South); Simple Random Sampling: Two states were selected at random from each geopolitical zone (12 states total, plus the Federal Capital Territory, Abuja); Purposive Sampling: Special schools catering to visual, auditory, physical, and intellectual impairments were selected within each state to ensure representation across major disability categories and Proportional Sampling: Administrators and PE teachers were selected from the sampled institutions.

Instrument for Data Collection

Data were gathered using a structured, researcher-developed instrument titled the "*Determinants of Effective Implementation of Physical Education Programme Questionnaire*" (DEIPEQ). The instrument was divided into two main sections: Section A: Demographic variables of respondents (institutional designation, professional qualification, years of teaching/administrative experience, visual/physical status).; Section B: 28 items measuring dimensions of curriculum adaptation (content modification, equipment adaptation, pedagogical variation, environmental restructuring, and assessment adjustments) rated on a 4-point Likert scale (*Strongly Agree* = 4, *Agree* = 3, *Disagree* = 2, *Strongly Disagree* = 1).

Validation and Reliability

The instrument underwent rigorous validation. Face and content validity were established by a panel of five experts: two professors of Adapted Physical Education, two specialists in Special Education and Curriculum Studies, and one expert in Educational Measurement and Evaluation. Suggestions regarding item clarity, terminology, and domain coverage were incorporated into the final draft. To ascertain internal consistency, the validated instrument was pilot-tested on 40 respondents (administrators and PE teachers) in special schools not included in the final study sample. Reliability indices were calculated using three internal consistency metrics: Cronbach's Alpha (alpha): 0.824; Spearman-Brown Split-Half: 0.828 and Guttman Split-Half: 0.811

All metrics exceeded the standard benchmark of 0.70 (Pallant, 2020), confirming high internal consistency and reliability.

Data Collection Procedure & Data Analysis

Data collection was carried out over eight weeks by the researchers alongside twelve trained field research assistants, including certified sign language interpreters and braille assistants to facilitate communication with hearing-impaired and visually-impaired respondents. A total of 390 questionnaires were distributed, and through persistent follow-up, all 390 copies were retrieved, yielding a 100% retrieval rate. The collected data were cleaned, coded, and analyzed using IBM SPSS Statistics (Version 27.0). Descriptive statistics (frequencies, percentages, means, and standard deviations) were used

Influence of Curriculum Adaptation on Effective Implementation of ... John, R. P. Et. al., (2026)

to summarize demographic data, while non-parametric Chi-square (χ^2) test of independence was computed to test the null hypothesis at the 0.05 level of significance.

Presentation of Results

Hypothesis Testing

Curriculum adaptation does not significantly determine the effective implementation of Physical Education programmes in Nigeria's special schools.

Table 1: *Chi-square (χ^2) Analysis of Curriculum Adaptation as a Determinant of Effective Implementation of PE Programmes*

Variable	N	df	χ^2_{cal}	χ^2_{crit}	p-value	Decision
Curriculum Adaptation	390	27	119.13	40.113	0.000	Ho Rejected

Significance level alpha = 0.05; degrees of freedom (df) = 27.

Interpretation

The statistical analysis presented in Table 1 shows that the calculated Chi-square value ($\chi^2_{cal} = 119.13$) is substantially greater than the critical Chi-square value ($\chi^2_{crit} = 40.113$) at 27 degrees of freedom, with an associated asymptotic p-value of 0.000 ($p < 0.05$). Consequently, the null hypothesis is rejected.

This statistical outcome indicates that curriculum adaptation significantly determines the effective implementation of Physical Education programmes in Nigeria's special schools.

Discussion of Findings

The primary finding of this study demonstrates that curriculum adaptation is a fundamental determinant of successful Physical Education programme implementation within special education settings in Nigeria. Rejection of the null hypothesis ($\chi^2 = 119.13$, $p = 0.000$) underscores that when instructional activities, equipment, rules, and learning environments are modified to align with learners' functional profiles, the implementation quality of PE improves. This result corroborates the empirical findings of Ajayi (2017), who established that special schools that systematically incorporate curriculum modifications demonstrate significantly higher levels of student participation, skill acquisition, and sustained physical activity engagement. Similarly, Okafor and Adeyemi (2019) asserted that structural flexibility in instructional delivery remains the single most important predictor of educational inclusion for learners with special needs. Without deliberate curricular modifications, physical education classes risk deteriorating into spaces of physical exclusion and psychological frustration. The findings also support the theoretical work of Winnick and Porretta (2017) and Lieberman et al. (2020) regarding Adapted Physical Education (APE). These scholars emphasized that curriculum adaptation is not merely an optional instructional strategy, but a fundamental prerequisite for equitable pedagogical delivery. Modifying game parameters such as using audible balls for students with visual impairment, lowering nets and baskets for wheelchair users, reducing field dimensions, and utilizing visual task schedules for students with autism spectrum disorders directly removes participation barriers. Furthermore, the results align with Yusuf and Ibrahim (2021), who highlighted that while systemic bottlenecks such as inadequate funding, poor facility maintenance, and limited teacher training persist across public institutions in Nigeria, effective curriculum adaptation by competent teachers can attenuate these constraints. As noted by Eze and Anih (2015), adapted physical activities serve as a catalyst for motor development, emotional regulation, and social skill building among learners with neurodevelopmental disorders such as autism and intellectual disabilities. However, the field observations from this study reveal a disparity between theoretical awareness of curriculum adaptation and its daily practical application in Nigerian classrooms. While administrators and teachers recognize its importance, practical implementation is often constrained by lack of specialized APE pre-service training, absence of standardized adaptive assessment tools, and a lack of basic adaptive sports equipment (Abah et al., 2022; Adewumi & Mosaku, 2019). This underscores the imperative for systemic interventions led by government bodies and educational policymakers.

Conclusion

Based on the empirical findings, this study concludes that curriculum adaptation is an indispensable determinant of effective Physical Education implementation in Nigeria's special schools. A rigid, standardized PE curriculum fails to serve the diverse physical, sensory, and cognitive needs of students in special education institutions. Tailoring curricular content, pedagogical approaches, instructional equipment, and evaluation metrics empowers learners with disabilities to participate actively, acquire functional motor skills, and experience the physical, psychological, and social benefits of structured physical activity. Achieving the inclusive education targets set by SDG 4 and upholding Nigeria's Disability



Influence of Curriculum Adaptation on Effective Implementation of ... John, R. P. Et. al., (2026)

Rights Act of 2018 require transitioning from theoretical commitments to practical curricular adaptation across all special and inclusive schools nationwide.

Recommendations

Based on the findings and conclusion of this study, the following recommendations were made:

1. **Curricular Reform & National APE Standardization:** The Federal Ministry of Education (FME), in collaboration with the Nigerian Educational Research and Development Council (NERDC) and the National Commission for Special Education, should review and revise the national Physical Education curriculum. The updated curriculum must embed explicit, standardized Adapted Physical Education (APE) modules, complete with guidelines for task differentiation across various disability categories.
2. **Pre-Service & In-Service Professional Teacher Development:** Teacher training institutions (Universities and Colleges of Education) across Nigeria should make Adapted Physical Education (APE) a compulsory core course for all undergraduate physical education and special education majors. Furthermore, State Universal Basic Education Boards (SUBEBs) should organize continuous professional development workshops to train in-service teachers on modern adaptive instructional strategies, assistive technology integration, and modified sports rules.
3. **Provision of Adaptive Equipment and Accessible Infrastructure:** State Ministries of Education and school administrators should allocate dedicated budgetary resources for acquiring specialized, low-cost adaptive sports equipment (e.g., sound-emitting balls, tactile boundary markers, modified sports wheelchairs, ramps, lightweight oversized racquets). School grounds and sports facilities must also be renovated to comply with accessibility standards (ramps, smooth pathways, tactile paving).
4. **Multi-Disciplinary Support and IEP Implementation:** Special schools should adopt Individualized Education Programs (IEPs) for PE delivery. Physical educators should collaborate with physiotherapists, occupational therapists, special educators, and healthcare professionals to tailor physical activities to each student's functional capability profile.

References

- Abah, L. O., Okwutu, M. E., & Usman, S. A. (2022). Challenges of implementing adapted physical education in special schools in North-Central Nigeria. *Journal of Disability Policy and Special Education*, 5(1), 34–48.
- Adams, A. O. (2020). *Sample size determination and sampling techniques in quantitative educational research*. University of Lagos Press.
- Adewumi, O. (2015). Physical activity levels of Nigerian children and adolescents with intellectual disabilities. *International Journal of Environmental Research and Public Health*, 12(3), 120–135. <https://doi.org/10.3390/ijerph120300120>
- Adewumi, O., & Mosaku, T. O. (2019). Inclusive education and physical activity for students with special needs in Nigeria: Policy versus practice. *African Journal of Special and Inclusive Education*, 4(2), 87–101.
- Ajayi, T. (2017). Curriculum adaptation as a determinant for the implementation of Physical Education programme in Nigeria's special schools. *African Journal of Education and Practice*, 2(4), 18–31.
- Ajobiewe, T. A. (2018). *Management of special education in Nigeria: Current trends and future directions* (2nd ed.). Eni-Oluwa Printers.
- Ali, T. (2021). *Research methodology in education and social sciences: Principles, practices, and prospects*. Cengage Learning.
- Amusa, L. O., & Toriola, A. L. (2018). Physical education and school sport in Africa: Challenges and prospects for the 21st century. *African Journal for Physical Activity and Health Sciences (AJPHES)*, 24(3), 210–228.
- Block, M. E. (2016). *A teacher's guide to adapted physical education: Including students with disabilities in general physical education* (4th ed.). Paul H. Brookes Publishing.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Disability Rights Commission. (2024). *National directory and statistics of accredited special schools and rehabilitation centers in Nigeria*. DRC Publications.
- Eze, C. A., & Anih, C. O. (2015). Adapted Physical Education programme: A catalyst for the development of social skills of children with autism in Nigeria. *European Journal of Physical Education and Sport Science*, 1(8), 45–58.
- Federal Government of Nigeria. (2018). *Discrimination Against Persons with Disabilities (Prohibition) Act, 2018*. Federal Republic of Nigeria Official Gazette.



- Influence of Curriculum Adaptation on Effective Implementation of ...* John, R. P. Et. al., (2026)
- Federal Ministry of Education. (2013). *National policy on education* (6th ed.). NERDC Press.
- Haeghele, J. A., & Sutherland, S. (2015). The perspectives of individuals with disabilities towards physical education: A qualitative meta-synthesis. *Adapted Physical Activity Quarterly*, 32(3), 255–273. <https://doi.org/10.1123/apaq.2014-0086>
- Lieberman, L. J., Grenier, M., Brian, A., & Arndt, K. (2020). *Universal design for learning in physical education*. Human Kinetics.
- Okafor, K., & Adeyemi, L. (2019). Curriculum flexibility and inclusion in special needs education. *Nigerian Journal of Educational Research*, 16(2), 90–103.
- Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). Open University Press.
- Ring, E., & Rose, R. (2016). Framing the inclusion agenda: Policy and practice in special education in international contexts. *International Journal of Inclusive Education*, 20(7), 720–735. <https://doi.org/10.1080/13603116.2015.1102339>
- Rose, R. (2016). *Promoting inclusion in education: Systems, structures, and student outcomes*. Routledge.
- Sherrill, C. (2004). *Adapted physical activity, recreation, and sport: Crossdisciplinary and lifespan* (6th ed.). McGraw-Hill.
- UNESCO. (2020). *Global education monitoring report 2020: Inclusion and education—All means all*. UNESCO Publishing.
- UNESCO. (2021). *Making the case for inclusive Quality Physical Education (QPE)*. UNESCO Publishing.
- United Nations. (2006). *Convention on the Rights of Persons with Disabilities (CRPD)*. United Nations Treaty Series, vol. 2515, p. 3.
- Winnick, J. P., & Porretta, D. L. (Eds.). (2017). *Adapted physical education and sport* (6th ed.). Human Kinetics.
- World Health Organization. (2020). *WHO guidelines on physical activity and sedentary behaviour*. World Health Organization. <https://apps.who.int/iris/handle/10665/336656>
- World Health Organization. (2021). *World report on disability*. World Health Organization.
- Yusuf, H., & Ibrahim, A. (2021). Challenges of implementing inclusive Physical Education in Nigerian schools. *Journal of Educational Development Studies*, 9(1), 45–59.