An Assessment of The Impact of Inclusive Education on Learning of Senior Secondary School Biology Students in Niger State, Nigeria.

Dr. Wushishi, Dantani Ibrahim
Federal University of Technology, Minna, Niger State, Nigeria

Bawa, Saratu
Federal University of Technology, Minna, Niger State, Nigeria

Abstract

The study assessed the impact of inclusive education on learning of biology students in Niger state, Nigeria. The sample of the study comprised of 300 students (148 boys and 152 girls) selected from six senior secondary schools in Niger North, Niger East and Niger South senatorial districts of the state. The designs adopted for this research were descriptive and Ex post facto designs. Questionnaires were administered to students and data was collated to answer research questions and test hypotheses. A 30 items Assessment of Inclusive Education Questionnaire (AIEQ) was validated by experts and a reliability coefficient of 0.75 was obtained using Cronbach's alpha reliability formula. The data were analysed using descriptive statistics such as frequency count and percentage methods. The three null hypotheses were tested using Analysis of Variance (ANOVA) statistic after collating the second term biology examination scores of the students from the schools examinations offices. The findings revealed that there was an improvement with positive interaction and participation of students in learning Biology in an inclusive biology class. There was however, a negative response on the provision of special facilities for the learning of students with special needs. Similarly, there was no statistically significant difference in the achievement of normal students and those with special needs. There was no statistically significant difference in the achievement of male and female normal students and those with special needs. Based on these findings, it was recommended that regular and special needs students should be brought together and be educated in an inclusive classrooms and be assisted with technology gadgets such as calculators, reading strips, highlighter tapes, Word prediction software and Laptops to aid their learning.

Keywords: Assessment; Biology Students; Impact; Inclusive Education; Learning; Senior Secondary School.

Background to the Study

Scanned by CamScanner

Education has been identified as a major vehicle for political, economic and societal advancement. To this extent, governments across the world desire education for their citizens. This is evident in the Declaration of the World Education Conference held in Jomtien, Thailand in 1990 with its major focus on Education for All (EFA). A decade was slated for the achievement of EFA goals. The target was that by the year 2000 all countries of the world would have achieved the goals. Before the year 2000, another conference was held in Dakar, Senegal, for the Assessment of EFA achievements by the participating countries.

In fact, in Africa, this universalizing of education, specifically primary education was part of the discourse of the 1961 Addis Ababa conference where a six-year free and compulsory education was endorsed with 100% enrolment to be achieved by the end of 1980. As good as these global efforts, however, the education that would not be discriminatory on the part of those who are students with special needs has not been given the desired attention, except in some developed nations such as the United State of America, Canada, Australia, United Kingdom and others (Osokoya, 2000). Gabriele (2007) noted that persons with disabilities in developing countries such as Nigeria are among the poorest of the poor, too little attention has been paid to them in major development programmes.

In fact, the kind of education Nigeria gives to her students with special needs is still the one, which discriminates against them. They are still accorded a segregated form of schooling where the schools for the handicaps are sited at strategic locations. There are schools for the blind, for the deaf and dumb, even for those with other physical and mental disabilities. To this extent, Nigerian government established a federal teacher training college for special education at Oyo in Oyo State, to produce the needed manpower for those schools. To discourage this discriminatory attitude, the concept of inclusive education is gradually been introduced.

Inclusive education as a concept in education is gaining wide publicity by the day. It is becoming very popular in education because inclusion is the easiest means of fighting discriminatory attitudes towards persons with one special need or the other. Inclusive education according to Osokoya (2000) remains a factor for building strong and self-reliant inclusive communities throughout Nigeria. This is because a well-educated individual will avoid the shame of street begging. Products of inclusive education will be able to make a living and thus will not be nuisance to their communities but assets capable of making their contributions to the development of their communities. It is therefore through inclusive education that education can be made to reach majority of the children if not all (UNESCO, 2000).

In recent years, the debate about inclusive education has moved from high-income countries to a low-income country such as Nigeria, where an official policy of educating children and youth with disabilities alongside their peers without disabilities in ordinary schools has been adopted (FRN, 2004). In Niger state a lot of money has being spent on quality education about fifteen billion (15 billion) naira was spent in the space of six (6) years for free education (Garuba, 2001). With this entire amount spent inclusion is still a problem; the government has totally neglected the children and youth with disability.

However, professional associations concerned with the education of people with

Scanned by CamScanner

special needs have been addressing the issue of inclusive education in the country. For instance, inclusive education was one of the major issues examined at the 12th Annual National Conference of the National Council for Exceptional Children held Minna, Niger State, in August, 2002. It was argued that "The old special education system with its restrictive practices cannot successfully address these problems of special needs children. The answer lies in inclusion or inclusive schooling in changing and recognizing the entire school system to accept all children and cater for their varied 'special' or 'ordinary' learning needs and difficulties" (Obani, 2002). This and many more stimulated this research to see how the implementation of inclusive education impact on students of Niger state, Nigeria.

Statement of the Problem

Since the launching of the first National Policy on Education in 1977 in Nigeria, there has been a plethora of activities aimed at improving special education services for children, including: the establishment of additional residential primary schools for children with disabilities in most states of the federation. These have increased attendance of students with disabilities in secondary and higher institutions in the country. There has also been a rise in the number of advocacy organizations of and for people with disabilities. These initiatives have however been met with mixed outcomes; with dually-trained educators (i.e. those holding certification in an area of special education and a subject-matter discipline such as Biology) not properly employed to work with students with disabilities. Other persistent problems over the years include: lack of up-to-date teaching devices, organization and leadership crises that have militated against reform of the special education sector in Nigeria (Eskay, 2009).

At a moment special schools were suffering from neglect and poor funding, students with physical and mental challenges are equally suffering from stigmatisation and social segregation and now prefer to be called "students with special needs" as opposed to students with disability. Interestingly enough, Section 7 of the revised National Policy on Education (FRN, 2004) explicitly recognizes children and youth with special needs to be provided with inclusive education services. The commitment is made to equalize educational opportunities for all children, irrespective of their physical, sensory, mental, psychological or emotional disabilities. Nevertheless, governments at various levels have been implementing this policy directive for some time now including Niger state government. These raise the need to assess the impact of inclusive education particularly as it affect teaching and learning of special subject areas such as biology in Niger state secondary schools.

and Objectives of the study

study was aimed at assessing the impact of inclusive education on the learning of gy in Niger state secondary schools. The objectives to be achieved include:

investigate if inclusive education improves the learning of biology in Senior ondary Schools in Niger state, Nigeria.

To investigate if inclusive education improves interaction and participation of rmal students and those with special needs in an inclusive Biology class.

To find out if there are provisions of special facilities for learning of students with

Scanned by CamScanner

special needs in Niger state Senior Secondary Schools.
4. To compare the achievement of normal students and those with special needs in a biology inclusive class.
5. To compare the achievement between male and female normal students in a biology inclusive class.
6. To compare the achievement between male and female students with special needs in a biology inclusive class.

Research Questions

The study attempted to answer the following research questions:

1. Does inclusive education improves Senior Secondary School students learning of Biology in an inclusive class in Niger state, Nigeria?
2. Does inclusive education improves interaction and participation of normal students and those with special needs in a Biology inclusive class?
3. Are there provisions of special facilities for the learning of students with special needs in Senior Secondary Schools in Niger state?
4. Is there any difference in the achievement of students with special needs and normal students in a Biology inclusive class?
5. Is there any difference in the achievement of male and female normal students in a biology inclusive class?
6. Is there any difference in the achievement of male and female students with special needs in a biology inclusive class?

Null Hypotheses

The following null hypotheses were formulated and tested at 0.05 significant levels.

Ho_1: There is no significant difference in the achievement of normal students and those with special needs in a biology inclusive class.

Ho_2: There is no significant difference in the achievement of male and female normal students in a Biology inclusive class.

Ho_3: There is no significant difference in the achievement of male and female students with special needs in a Biology inclusive class.

Scope of the Study

The study was limited to three (3) senatorial districts of Niger State. They include: Niger North, Niger East and Niger South senatorial districts. The State is bordered by Kaduna State and FCT to the North-East and South-East respectively; Zamfara State bordered it to the North, Kebbi State to the West, Kogi State to the South and Kwara State to the South West. The republic of Benin along Agwara LGA bordered it to North West. The three senatorial districts comprises of seven educational Zones, namely; Bida, Suleja, Kutigi, Minna, Rijau, Kontagora and New-Bussa. The study covered six (6) senior secondary schools located in the three senatorial districts. The Senior Secondary school class two (2) Biology students' results used in the study was limited to the second term 2014/2015 academic session. The variables include: normal and special needs students, academic achievement and gender.

Research Design

Scanned by CamScanner

The designs used for this study were descriptive and Ex post facto designs. The descriptive design involved the use of survey method using questionnaire administered to students to assess their feedback. A survey method is one in which information is collected without changing the environment. It involves a one-time interaction with groups of people (cross-sectional study) the researcher interacts with the participants and collected the necessary information at one-time (Burden and Bayliss, 2008).

Secondly, Ex post facto design was used. This design is a non-experimental research design in which pre-existing scores of the sample are compared on some dependent variables. It is the type of study that masquerades as a genuine experiment. It involved the use of already made examination scores of the students conducted by their teachers during the second term academic session. This experiment appears to be true experiment because of the way the groups are separated and the way the analysis was performed but still subject to the same limitations as non-experimental research. The assessment of participants to the levels of the independent variable was based on events that occurred in the past (Lammers and Badia, 2005).

Population of the Study

There are One Hundred and Fifty Eight (158) Senior Secondary Schools in Niger State which constitute the population of schools for this study. There are Sixty Three (63) Schools in Niger South with a population of 57,701 students; Fifty Five (55) schools in Niger East with population of 71,155 students and Forty (40) schools in Niger North with a population of 26,500 Students. Therefore, the total population of students for this study is One Hundred and Fifty Five Thousand Three Hundred and Fifty Six (155,356) Senior Secondary School students.

Sample and Sampling Techniques

The sample for this study is Three Hundred (300) students including normal students and those with special needs. This comprised of seventy one (71) students with special needs and two hundred and twenty nine (229) normal students. The selection is gender conscious as it involves one hundred and forty eight (148) male and one hundred and fifty two (152) female. Purposive sampling technique was used to select six (6) co-education senior secondary schools from the three (3) senatorial districts. Then, one hundred and forty eight (148) male and one hundred and fifty two (152) female students were randomly selected for the administration of the questionnaire. The existing second term results of the same sample were used as achievement scores for the purpose of analysis.

Research Instrument

Two instruments were used for this study. The first instrument was an Assessment of Inclusive Education Questionnaire (AIEQ) drawn by the researchers. The AIEQ was divided into two sections, A and B. Section A consisted of bio data of respondents while section B consists of thirty items on the views of the respondents on the impact of inclusive education such as improvement of interaction and participation of normal students and those with special needs; and the provisions of special facilities

Scanned by CamScanner

for learning of students with special needs. All items in this section consisted of items in a four point scale format of; strongly Agree (SA), Agree (A), Disagree (D) and strongly Disagree (SD) with the weight of 4,3,2,1 allocated values respectively. The second instrument used was the Second term Biology Examination question papers for the 2014/2015 academic session whose raw scores from the examination were used as already existing data for manipulation by the researchers. These were collected from the examination offices of each of the schools selected for the research.

Validity of the Instrument

A total of forty-three items were drafted by the researchers which were subjected to screening for correction and reframing by experts from the department of Science Education, Federal University of Technology, Minna. Out of forty three items, thirteen were dropped and thirty items were finally selected. The instrument was certified to have content validity.

Reliability of the Instrument

After the instrument was validated, it was pilot tested outside the study areas. The rationale behind the pilot testing was to ascertain the reliability of the instrument and the efficiency of the research design. The pilot test was administered to 60 students with special needs and normal biology students which were randomly selected from two co-educational senior secondary school in Niger East; namely: Ahmadu Bahago Secondary School and Day Secondary School B, Minna. Thirty students were selected from each school. Cronbach's alpha reliability formula was used to test the reliability of the research instrument. The reliability coefficient of the instrument yielded r= 0.75. This shows that the instrument is reliable.

Method of Data Collection

The researchers visited the six (6) selected co-educational Senior Secondary Schools within two (2) weeks to seek for official permission from the school authority and also commence the training of research assistants. After all the necessary arrangements were made, the Biology teachers who were trained as research assistants assisted the researchers in administering the questionnaire within three (3) weeks in Niger North, Niger East and Niger South senatorial districts respectively. Thus, a total of three hundred (300) questionnaires were administered to the respondents through hand-to-hand approach; the advantage of this process was that all the copies were retrieved after completion. Similarly, during the same period, the same students' second term examination scores for 2014/2015 academic session were collated from the examination officers of each of the selected schools.

Procedure for Data Analysis

The first three research questions were analysed using descriptive statistics such as frequency count and simple percentage methods. The three null hypotheses were tested using Analysis of Variance (ANOVA) Statistic with the aid of Statistical package for Social Sciences (SPSS) version 20.0 because the instrument is an interval scale type.

Results

Scanned by CamScanner

Overall Responses on Research Question One

Table 1a: Responses of Secondary School Students Learning Biology in an Inclusive Education Class

S/N	Statement	N	SA	A	D	SD
1	All children should be educated in regular class.	300	117	84	59	40
2	Both students with and without disabilities can get academic improvement because of inclusive education.	300	99	97	56	48
3	Inclusive education is likely to have a positive effect on the social and emotional development of students with disabilities.	300	96	97	64	43
4	The needs of students with disabilities can be best being served in special, separate settings.	300	62	59	98	81
5	Inclusive education programs provide different students with opportunities for mutual communication, thus promoting students understanding and acceptance of individual diversity.	300	99	97	68	36
6	I feel comfortable being in an inclusive biology class.	300	78	113	53	56
7	I learn biology faster in an inclusive class.	300	74	96	67	63
8	Children with disability feel comfortable when examples are sighted relating to their disability.	300	78	81	79	62
9	I learn more explaining to a fellow student with disability.	300	76	78	89	57
10	I am very angry when a student with special needs student is slowing down the Pace of teaching.	300	71	79	88	62

Table 1a shows the Overall responses of Secondary School Students Learning Biology in an Inclusive education class.

Answering Research Question One: Does inclusive education improves Senior Secondary School students learning of Biology in an inclusive class in Niger state, Nigeria?

Table 1b: Percentage Analysis of Secondary School Students' Positive and Negative responses on Learning Biology in an Inclusive Education Class

Scanned by CamScanner

S/N	Statement	Positive responses (SA+A)	% Positive Responses	Negative responses (D+SD)	% Negative responses
1	All children should be educated in regular class.	201	67.0	99	33.0
2	Both students with and without disabilities can get academic improvement because of inclusive education.	196	65.4	104	34.7
3	Inclusive education is likely to have a positive effect on the social and emotional development of students with disabilities.	193	64.4	107	35.7
4	The needs of students with disabilities can be best being served in special, separate settings.	121	40.4	179	59.7
5	Inclusive education programs provide different students with opportunities for mutual communication, thus promoting students understanding and acceptance of individual diversity.	196	65.4	104	34.7
6	I feel comfortable being in an inclusive biology class.	191	63.7	109	36.4
7	I learn biology faster in an inclusive class.	170	56.7	130	43.4

Table 1b Shows the Percentage Analysis of Secondary school students' Positive and Negative responses on Learning Biology in an Inclusive Education class. The average percentages were 57.74% and 42.33% respectively. This indicates that students had positive responses on learning Biology in an inclusive education class.

Overall Responses on Research Question Two.

Scanned by CamScanner

Table 2a: Overall Responses of Biology students on their interaction and participation in an inclusive education class

Table 2a shows the overall responses of Biology students on their interaction and participation in an inclusive education class.

Answering Research Question Two: Does inclusive education improves interaction

S/N	Statement	N	SA	A	D	SD
1	I love to interact in an inclusive biology class.	300	97	95	76	32
2	Students who are physically aggressive toward their peers should be in regular classes.	300	77	95	66	62
3	Students who cannot move without the help from others should be in regular classes.	300	112	87	66	35
4	Students whose speech is difficult to understand should be in regular classes.	300	84	86	59	71
5	Students who cannot read standard print and write up in the chalk board should be in regular classes.	300	98	77	64	61
6	Students who cannot hear conversational speech should be in regular classes.	300	79	88	77	56
7	Students who use sign language or communication boards should be in regular classes.	300	99	89	55	57
8	Students who cannot interact properly should be in regular classes.	300	88	76	87	49
9	Students who find it difficult to see the board should be in regular classes.	300	96	89	64	51
10	Students who have one disability or the other make biology class less interactive.	300	99	92	67	42

and participation of normal students and those with special needs in a Biology inclusive class?

Table 2b: Percentage Analysis of Biology Students' Positive and Negative Interaction and Participation in an Inclusive Education Class

Table 2b shows the Percentage analysis of Biology students' Positive and Negative

Scanned by CamScanner

interaction and participation in an inclusive education class. The average percentages were 60.14% and 39.95% respectively. This means that students had positive interaction and participation in an inclusive biology class.

Overall Responses on Research Question Three.

S/N	Statement	Positive responses (SA+A)	% Positive responses	Negative responses (D+SD)	% Negative responses
1	I love to interact in an inclusive biology class.	192	64.0	108	36.0
2	Students who are physically aggressive toward their peers should be in regular classes.	172	57.4	128	42.7
3	Students who cannot move without the help from others should be in regular classes.	199	66.4	101	33.7
4	Students whose speech is difficult to understand should be in regular classes.	170	56.7	130	43.4
5	Students who cannot read standard print and write up in the chalk board should be in regular classes.	175	58.4	125	41.7
6	Students who cannot hear conversational speech should be in regular classes.	167	55.7	133	44.4
7	Students who use sign language or communication boards should be in regular classes.	188	62.7	112	37.4
8	Students who cannot interact properly should be in regular classes.	164	54.7	136	45.4
9	Students who find it difficult to see the board should be in	185	61.7	115	38.4

Table 3a: Overall Responses of Biology students on the Provisions of Special Facilities for the Learning of Students with Special Needs in Senior Secondary Schools

Scanned by CamScanner

S/N	Statement	N	SA	A	D	SD
1	There are no any trained special teachers to teach student with special needs d students.	300	108	97	55	40
2	There are many special trained teachers in the school to teach student with special needs d students.	300	49	65	99	87
3	Teachers need to be trained on how to teach special students.	300	98	99	55	48
4	In my school we have guidance and counseling units for student with special needs students.	300	42	69	97	92
5	Students who cannot read standard print are provided with Braille machine	300	59	49	94	98
6	In regular class, normal students assist the physically challenged students.	300	85	99	55	61
7	Physically challenged students need to have special settings for their learning.	300	93	87	62	58
8	The special teachers only come once in a while in the school.	300	47	66	99	88
9	The special teacher is always in the school.	300	36	67	99	98
10	The special teacher comes around whenever the lesson is going on to explain to the students using sign code methods of teaching.	300	56	72	86	86

Table 3a shows the overall responses of Biology students on the provision of special facilities for the learning of students with special needs in Senior Secondary Schools.

Answering Research Question Three: Are there provisions of special facilities for the learning of students with special needs in Senior Secondary Schools in Niger state?

Table 3b: Percentage Analysis of Biology Students' Positive and Negative Responses on the Provisions of Special Facilities for the Learning of Normal Students and those with Special Needs

Table 3b shows the Percentage analysis of Biology students' Positive and Negative

Scanned by CamScanner

S/N	Statement	Positive Responses (SA+A)	% Positive Responses	Negative Responses (D+SD)	% Negative Responses
1	There are no any trained special teachers to teach student with special needs d students.	205	68.4	95	31.7
2	There are many special trained teachers in the school to teach student with special needs d students.	114	38.0	186	62.0
3	Teachers need to be trained on how to teach special students.	197	65.7	103	34.4
4	In my school we have guidance and counseling units for student with special needs students.	111	37.0	189	63.0
5	Students who cannot read standard print are provided with Braille machine	108	36.0	192	64.0
6	In regular class, normal students assist the physically challenged students.	184	61.4	116	38.7
7	Physically challenged students need to have special settings for their learning.	180	60.0	120	40.0
8	The special teachers only come once in a while in the school.	113	37.7	187	62.4
9	The special teacher is always in the school.	103	34.4	197	65.7

responses on the provisions of special facilities for the learning of student with special needs in Senior Secondary Schools. The average percentages were 48.12% and 51.93% respectively. This indicates that there is no provision of special facilities for the learning of Biology students with special needs in Senior Secondary Schools in Niger state, Nigeria.

Hypothesis One (Ho_1)

Scanned by CamScanner

There is no significant difference in the achievement of normal students and those with special needs in a biology inclusive class.

Table 4: ANOVA Comparison of the Mean Achievement Scores of Normal Students and those with Special Needs

Ns=not significant

Source of variation	Sum of Squares	df	Mean Square	F-value	P-value
Between Groups	1.015	1	1.015	.008	.928
Within Groups	37035.902	298	124.282		
Total	37036.917	299			

Table 4 Presents ANOVA results of the Mean Achievement scores of normal students and those with special needs. The results yielded an F-value of 0.008 and a P-value of 0.928 (P> 0.05). Therefore, hypothesis one (Ho_1) was not rejected. This implies that the students with special needs are competing favourably with their normal students counterparts despite their disability. Thus, this comparable performance may be attributed to teachers' commitment, responsibility and a sense of contribution toward students with special needs.

Hypothesis Two (Ho_2)

There is no significant difference in the achievement of male and female normal students in a Biology inclusive class.

Table 5: ANOVA Comparison of the Posttest Mean Achievement Scores of Male and Female Normal Students in Biology Inclusive Class

Source of variation	**Sum of Squares**	**df**	**Mean Square**	**F-value**	**P-value**
Between Groups	187.711	1	187.711	1.533	.217
Within Groups	27792.473	227	122.434		
Total	27980.183	228			

Ns= Not Significant at 0.05 level

Table 5 Presents ANOVA results of the Mean achievement scores of male and female normal students in a Biology inclusive class. The results yielded an F-value of 1.533 and a P- value of 0.217 (P> 0.05). Hence, hypothesis two (Ho_2) was not rejected. This indicated that there was no statistically significant difference in the mean achievement of Male and Female normal students. It further implies that inclusive education setting does not affect the performance of male and female normal students in a Biology inclusive class.

Hypothesis Three (Ho_3)

There is no significant difference in the achievement of male and female students

Scanned by CamScanner

with special needs in a Biology inclusive class.

Table 6: ANOVA Comparison of the Posttest Mean Achievement Scores of Male and Female Student with Special Needs in a Biology Inclusive Class

Source of variation	Sum of Squares	df	Mean Square	F-value	P-value
Between Groups	24.880	1	24.880	.190	.664
Within Groups	9030.839	69	130.882		
Total	9055.718	70			

Ns= Not Significant at 0.05 level

Table 6 Presents ANOVA results of the Mean achievement scores of male and female students with special needs in a Biology inclusive class. The results yielded an F-value of 0.190 and a P- value of 0.664. Hence, hypothesis three (Ho_3) was not rejected. This indicated that there was no statistically significant difference in the mean achievement of Male and Female students with special needs. It further implies that male and female students with special needs compete favourably with each other in an inclusive education setting.

Summary of findings

From the findings of this study, it was concluded that:

1. Inclusive education improves Senior Secondary School students learning of Biology in an inclusive class in Niger state, Nigeria?
2. Inclusive education improves interaction and participation of normal students and those with special needs in a Biology inclusive class?
3. There are no provisions of special facilities for the learning of students with special needs in Senior Secondary Schools in Niger state?
4. There is no significant difference in the achievement of normal students and those with special needs in a biology inclusive class.
5. There is no significant difference in the achievement of male and female normal students in a Biology inclusive class.
6. There is no significant difference in the achievement of male and female students with special needs in a Biology inclusive class.

Discussion of Findings

The findings showed that students had positive responses regarding learning biology in an inclusive education class. It further indicated that both normal students and those with special needs are comfortable learning together in such setting. This finding is in agreement with the earlier findings of Tanti (2010) and de Graaf and Haveman (2013) whose research findings shows that children who experience disability who are included into mainstream educational settings demonstrate better academic and vocational outcomes when compared to children who are educated in segregated settings. Similarly, children who experience disability who are included

Scanned by CamScanner

into mainstream settings have better achievement tests and perform closer to grade average than children who are in non-inclusive settings.

It was also in agreement with Vianello and Lanfranchi, (2009) whose research provides evidence of positive outcomes of inclusive education for social, academic, cognitive and physical development in children who do and do not experience disability. The research studies discussed here involve a diverse range of children, including children labelled with 'mild' through to 'severe' intellectual, sensory and physical impairments or multiple impairments. Additionally, it has been argued that inclusive education stimulates learning in that more time is spent on academic learning in mainstream schools than in segregated settings. This is based on the fact that children who are included in mainstream schools are given opportunities to engage at higher academic levels and to achieve outcomes that may not otherwise be possible in special schools (Dessemontet & Bless, 2013).

Also, the finding showed that students had positive interaction and participation in inclusive education class. The key to this positive interaction was that the normal students are psychologically, socially and attitude wise ready to assist their colleagues with special needs. Therefore, these attitudes are capable of increasing participation of students with special needs and reduce their exclusion from the curricula, cultures, communities of neighborhood and mainstream classrooms. The finding is in agreement with Spencer-Cavaliere and Watkinson, (2010) whose research studies indicated positive results on mainstream students supporting other students with special educational needs through peer tutoring and physical activities which provided an entry point for play and friendship and created a sense of legitimate participation.

The research indicates that there is no provision of special facilities for the learning of Biology students with special needs in Senior Secondary Schools in Niger state, Nigeria. The finding was in agreement with the earlier finding of Orodho and Eunice (2014) who revealed that the secondary schools that have embraced inclusive education were experiencing a myriad of interrelated constraints ranging from lack of physical and instructional facilities suitable for inclusive education. It was also in agreement with Tshabalala (2013) whose study also reveals that the integrated units in ordinary schools face a multiplicity of challenges which include lack of equipment such as gadgets used in integrated units to enable teachers to teach, for example, projects hearing aids; Braille machines, speech mirrors and others become a problem to the specialist teacher.

There was no statistically significant difference in the achievement of normal students and those with special needs. The finding is in agreement with the findings of Schmidt and Cagran (2008) who found no statistically significant differences between the class with integrated students, on the one hand, and the class without them, on the other; however, the finding contradicts the finding of Ekeh and Oladayo (2013) whose study revealed that significant difference existed in the academic achievement of regular and special needs students in inclusive classroom setting in favor of the regular pupils; also significant difference existed in the academic achievement of special needs pupils in inclusive and non-inclusive classrooms in

Scanned by CamScanner

favor of those raised in inclusive classrooms.

The result also indicated that there was no statistically significant difference in the mean achievement of Male and Female normal students. This finding is in agreement with the finding of Bello and Abimbola (2010) who revealed that there is no statistically significant difference in the achievement of male and female average scoring students. The researchers also concluded that the achievement of low scoring students did not differ significantly.

There was also no statistically significant difference in the mean achievement of Male and Female students with special needs. This finding contradicts the finding of Mowat (2010) who revealed that male and female students with EBD had large academic deficits relative to their normal group. The authors found that male and female students experienced deficits in all content areas. In fact, "the academic achievement levels of students in the sample remained stable in reading and written language.

Conclusion

Inclusive education improves learning, interaction and participation of normal students and those with special needs; and there were no significant differences between their learning of biology in all respect irrespective of gender. There is need for the provision of facilities for the learning of special needs students.

Recommendations

Based on the results of this study the following recommendations were made:

1. Regular and special need students should be brought together and be educated in an inclusive classrooms.
2. Regular and special education teachers should be employed to teach students in inclusive classrooms and workshops and trainings should be organized for academic and non-academic staff in inclusive schools.
3. Assistive technology gadgets such as Calculators, Reading strips, Highlighter tape, Book stands, Raised line paper, Word prediction software and Laptops should be provided to aid learning of students with special needs. Indoor and outdoor sporting facilities should be provided in inclusive schools to motivate and encourage students with special needs.
3. To further promote inclusive education in Niger state, peer supports, utilizing classmates to provide support via paired reading, quiz review, presentations, and group activities are some of the quick ways that enhance the learning of both the student with and without disability.
4. Inclusive education practice should become an integral part of education and training for allied health, education leaders and other education support professionals. As such, Policy makers, government, school heads and teachers should strive to use working examples that are practical by utilizing the available resources to achieve meaningful inclusion.

Scanned by CamScanner

References

Bello, G. & Abimbola, I. O. (2010). Gender influence on biology students' concept mapping ability and achievement in evolution. *Journal of Science Teaching and Learning*, 3 (1 & 2), 8 - 17. Retrieved from http://www.unilorin.edu.ng/publications/abimbola/GENDER%20INFLUENCE%20ON%20BIOLOGY%20STUDENTS.htm

Burden, R. & Bayliss, P. (2008). A survey into mainstream teachers' attitudes towards the inclusion of children with special educational needs in the ordinary school in one local education authority. *Journal of Educational Psychology*, 20 (2):191-215.

de Graaf, G., Van Hove, G., & Haveman, M. (2013). More academics in regular schools? The effect of regular versus special school placement on academic skills in Dutch primary school students with Down syndrome. *Journal of Intellectual Disability Research, 57*(1), 21–38.

Dessemontet, R. S., & Bless, G. (2013). The impact of including children with intellectual disability in general education classrooms on the academic achievement of their low-, average-, and high-achieving peers. *Journal of Intellectual & Developmental Disability, 38*(1), 23–30.

Eskay, M. (2009). Special education in Nigeria. Koln, Germany: Lambert Academic Publishing.

Ekeh and Oladayo (2013) Academic Achievement Of Regular And Special Needs Students In Inclusive And Non-Inclusive Classroom Settings. *European Scientific Journal 9(8), 141-150*

Federal Republic of Nigeria (FRN) (2004) National Policy on Education (4th Edition). Yaba, Lagos.

Garuba A. (2001). Provision of Services for the Student with special needs d in Nigeria. *Dougirei Journal of Education 1995; 5:17-23.*

Gabriele, W. (2007) Inclusive Development: The Right of persons with Disabilities to Equal Participation. Adult Education and Development – international

Lammers, W. J, & Badia, P. (2005). Fundamentals of Behavioral Research. Wadsworth: Belmont, CA.

Mowat, J. (2010). Inclusion of pupils perceived as experiencing social and emotional behavioural difficulties (SEBD): Affordances and constraints. *International Journal of Inclusive Education*, 14(6), 631-648.

Scanned by CamScanner

Obani, T. (2002) Prospects of Special Education in Children in the 21st Century. Keynote address at the 12th Annual Conference of the National Council for Exceptional Children (NCEC), Minna, Nigeria. August 6-9, 2002.

Orodho, J. A., and Eunice, L. A., (2014). Effective Provision of Inclusive Education: Coping with Constraints in Public Secondary Schools in Rongo District, Migori County, Kenya. Journal of Education and Practice 5 (18), Pp. 5-18

Osokoya, I. O. (2000) Educating Children and Youth with Special Needs within the Context of Universal Basic Education in Nigeria. ISCHE 29 Children and Youth at Risk: Approaches in the History of Education. University of Hamburg, 2007.

Schmidt, M., and Cagran, B. (2008). Self-Concept of Students in Inclusive Settings. *International Journal of Special Education* 23 (1), pp. 8-17

Spencer-Cavaliere, N. & Watkinson, E. J. (2010). Inclusion understood from the perspectives of children with disabilities. *Adaptive Physical Activity Quarterly, 27,* 275–293.

Tshabalala, T. (2013). Effectiveness of Inclusive Education Provision (Integrated Units) in all Schools in Zimbabwe Schools. *Greener Journal of Educational Research* 3 (9), pp. 424-431

Teemant, A. (2005). Evaluating socio-cultural pedagogy in a distance teacher education program. *Teacher Education Quarterly, 32(3)* 49–62.

Tudge, J., & Scrimsher, S. (2003). Lev S. Vygotsky on education: A cultural-historical, interpersonal, and individual approach to development. In B. J. Zimmerman & D. H. Schunk (Eds.), *Educational psychology: A century of contributions* (pp. 207–228) Mahwah, NJ: Erlbaum.

UNESCO (2000) World Declaration on Education for All. Paris, France.Office of the United Nations Commissioner for Human Rights, http://www2.ohchr.org/english/law/crc.htm.

Vianello, R., & Lanfranchi, S. (2009). Genetic syndromes causing mental retardation: deficit and surplus in school performance and social adaptability compared to cognitive functioning. *Life Span and Disability, 12*(1), 41–52.

Vygotsky, L. S. (1997). *The collected works of L. S. Vygotsky, Vol. 4: The history of the development of higher mental functions (R. W. Rieber*, Vol. Ed; M. J. Hall, Trans.). New York: Plenum Press.

Scanned by CamScanner