

PRE-SERVICE TEACHERS' ATTITUDE AND EFFICACY TOWARDS INCLUSIVE EDUCATION IN NIGERIA: A CASE STUDY OF PRE-SERVICE SCIENCE EDUCATION STUDENTS IN UNIVERSITY OF ILORIN, NIGERIA

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Abstract

In the actualization of sustainable development goals, teachers' positive attitude towards the implementation of inclusive education in their classrooms becomes essential. Hence, this study investigated pre-service teachers' attitudes and efficacy towards inclusive education among pre-service science education students in the University of Ilorin, Nigeria. The study adopted descriptive research of the survey type and a sample of 297 respondents were involved. Three research questions and two hypotheses were raised to guide this study. The research instrument entitled Questionnaire on students' attitude towards inclusive education adapted from Kielblock (2018) was utilized in gathering data for the study. The reliability of the instrument was observed to be 0.74 using PPMC statistics. The research questions were answered using frequency count and percentages while hypotheses were tested using t-test statistics at a 0.05 level of significance. Findings from the study revealed that the majority (72.1%) of the respondents are aware of inclusive education policy in Nigeria. Also, 59.9% of the respondents held a negative attitude towards inclusive education while 47.5% of them have low efficacy towards teaching in an inclusive classroom. Furthermore, it was revealed that gender does not significantly influence students' attitudes and efficacy towards inclusive education. It was therefore recommended that efforts should be intensified in teacher education programmes to impact knowledge on inclusive education among pre-service teachers as this may likely, strengthen their attitude and efficacy towards inclusion.

Keywords: Pre-service Teachers, Inclusive Education, Attitude, Efficacy, Science Education

Introduction

Education is a vital tool that provides solution to the economic and social problems of the world. The poor living standard of the populace and the unemployment rate especially in developing countries can be tackled with quality education. This affirmed the significance of education in improving the living standard of people; jobs creation; economic growth, and socio fairness as was submitted by (Kottmann *et al*, 2019). Education is the process or act of facilitating learning towards helping younger generations to acquire knowledge, skills, and values by more knowledgeable and certified members of society. Smith (2015, 2021) disclosed that education is a process of inviting truth and possibility, of encouraging and giving time to discovery. As such, the process of educating should be purposeful and hopeful; informed, respectful and wise; cooperative and inclusive. It was opined by Dagar (2017) that education is a deliberate activity that is related to a process towards developing a desirable state of mind. For every nation to become developed, it becomes imperative that its citizens regardless of their peculiarities should have access to quality education, and such education is termed to be inclusive.

Education is regarded to be inclusive when it caters to everyone irrespective of their needs and it is premised on the rights of every individual to quality education. Literarily, it requires that people with special needs are integrated into conventional school settings by providing

equal opportunity for all learners. Such education is targeted at bringing together people with learning difficulties, exceptionalities, gifted and talented together with their counterparts in a regular classroom. Inclusive education allows all children regardless of their learning needs, to attend the same school in the same learning environment (Qandhi & Kurniawati, 2018). This corroborates the targets in the fourth (4th) goal of the 2030 United Nations Sustainable Development Goals (SDGs).

Ensuring inclusive and equitable quality education and making youth a lifelong learner is goal number four of the Sustainable Development Goals (SDGs). This goal is targeted towards ensuring that citizens of various countries across the globe have access to inclusive and equitable quality education as well as promoting lifelong learning opportunities for all. In a bid to achieve these goals, ten targets were set which include but are not limited to; eliminating gender disparities in education and ensuring equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations. Also, included in the target is to make provision for building and upgrading education facilities that are child, disability, and gender-sensitive as well as providing safe, non-violent inclusive, and effective learning environments for all. As one of the means of accomplishing sustainable development goals in Nigeria, the Federal Republic of Nigeria (2013) advocated for equitable and inclusive education for all citizens, irrespective of their physical and emotional challenges. This is what the policy tagged Education for All (EFA) advocates. That is, no child must be left out of quality education and for individual and societal development to be actualized. This equality in education should not be restricted to primary and secondary levels, but also extended to higher education.

As part of efforts to strive towards accomplishing the target in ensuring quality education for all, Nigeria as a developing nation set aside a national policy on special needs education through the federal ministry of education in 2015. This policy document caters to the education of people with special needs and lays emphasis on the least restrictive environment, zero rejection, total inclusion, and diversification of services beyond school target to ensure best global practices (National Policy on Special Needs Education in Nigeria, NPSNEN, 2015). Therefore, for Nigeria to properly implement this policy, it becomes necessary to equip teachers with the necessary skills to thrive in an inclusive classroom setting. That is, preparing teachers for the diverse students' populations they will be required to teach, especially in secondary schools. Inclusive education at the secondary school level is important because it is at this level that students are prepared for complete learning if they intend to stop schooling and at the same time preparing learners to proceed for further studies in their chosen field of specialization in the university.

In a bid to implement the National Policy on Special Needs Education, the National Universities Commission in 2017 recommended the inclusion of special education as a compulsory course in teacher education programmes in Nigerian universities to ensure that pre-service teachers acquire adequate knowledge about inclusion and implement it in their respective classrooms after graduation. It is apparent that for educational policies such as inclusive education to be successful in Nigeria, the implementers of such policies are required to have a positive attitude towards its implementation. This corroborates the position of Costello and Boyle, (2013) who noted that willingness and ability to implement inclusive education significantly affect teachers' attitude towards it. Therefore, the successful implementation of inclusive education cannot be disconnected to teachers' attitudes, and efficacies towards inclusion in their classrooms.

The effectiveness of inclusive education depends greatly on the teachers' proficiencies in relation to methodology, instructional process, material utilization, motivation, and teaching evaluation methods that were considered to have a high influence on the implementation of

inclusive education curriculum (Abba & Rashid, 2020). As part of efforts towards ensuring total inclusiveness in education around the globe, researchers have embarked on quite a number of studies, some of which are Madan and Sharma (2013); Samawi (2017), Costello and Boyle, (2013); Rabi, Ghazali, Rhoazad and Zulkefli (2018), among others. These researchers' though worked on inclusive education but targeted a different audience. Madan and Sharma (2013) study provided the guideline that could be followed in setting up inclusive education. Their main concern was to uphold what should be done in ensuring inclusive education implementation. These researchers concluded that adequate preparations are required by schools for the feasibility of inclusive education. Samawi (2017) narrowed the implementation of inclusive education to social studies courses of children with special needs in Indonesia. It was reported that inclusive education was easy to apply, it gives room for dynamic classroom activities and the result of visually impaired students was not substandard to that of regular students.

Rabi *et al* (2018) emphasized the need for general classroom teachers to be abreast with the required knowledge and skills of inclusive education for effective class delivery in a study that investigated the readiness of Malaysian pre-service teachers to teach special needs students in inclusive settings. Their findings revealed that respondents show readiness for inclusive education and this was attributed to the training they received on inclusive education. In an earlier study on the attitude of pre-service teachers towards inclusive education by Costello and Boyle (2013), it was reported that pre-service secondary school teachers held a positive attitude towards inclusive education. However, a significant decline in their attitude was established through the years of study with an indication that first-year pre-service teachers showed a more positive attitude towards inclusive education than their counterparts. Apart from the attitudes of pre-service teachers towards inclusive education, their self-efficacy towards adopting inclusive education can also influence the implementation of inclusive education in the classroom.

Self-efficacy of pre-service teachers towards implementing inclusive education is an important factor towards addressing the implementation of inclusive education specifically in areas related to effective teaching, positive attitude, and self-confidence development. This becomes apparent as pre-service teachers' self-efficacy on the inclusion of children with special needs is centered on their beliefs about their ability to implement it and this influences how they feel, think and act. Ahsan (2014) noted that pre-service teachers with a high level of self-efficacy for inclusive education show the tendency for positive attitudes and incorporate more efforts towards minimizing the challenges in an inclusive classroom. In literature, numerous studies have examined pre-service teachers' attitudes towards inclusive education, while few studies have investigated their efficacy in including special needs students in their classrooms (Kim, 2012; Tindall, Culhane & Foley, 2016; Zudans-Fraser & Lancaster, 2012).

Kim (2012) determined the effect of firsthand field experience on the efficacy of early childhood pre-service teachers. The outcome from the study revealed that students that were enrolled in the course perceived themselves to be more efficacious than their counterparts that were not enrolled in the course. Tindall *et al* (2016) in another study examined the effect of adapted physical activity programmes on the self-efficacy of pre-service teachers towards teaching children with disability. It was established that there was a reported increase in the efficacy of pre-service teachers that participated in the programme than their counterparts who did not. While Zudans-Fraser and Lancaster, (2012) investigated the effect of embedded course design on the efficacy of pre-service teachers studying inclusive education. It was reported in the study that the efficacy of pre-service teachers increased when the embedded design was applied to a course developed to enable pre-service teachers to build mastery in inclusive pedagogies.

It is evident these studies were conducted to establish the effects of inclusive education-related courses on the efficacy of pre-service teacher and attention were directed to early childhood and special education majors. What is missing is a study focusing on pre-service science education majors with respect to their efficacies towards inclusive education using a survey approach. Having considered the fact that students with special needs are also integrated into science classrooms that are believed to majorly engage learners in hands-on activities in most of their lessons, it is on this premise that the present study, investigated the attitude and efficacy of pre-service science teachers in undergraduate programs in the university. These groups of pre-service teachers are trained to teach sciences (Physics, Chemistry, or Biology) at the secondary school level of education. Therefore, this study investigated pre-service science teachers' awareness of inclusive education policy in Nigeria; their attitude and efficacy towards inclusive education while also considering the influence of gender on their attitude and efficacy.

Research Questions

The following research questions were raised and answered in this study:

- (i) To what extent are pre-service science teachers aware of inclusive education policy in Nigeria?
- (ii) What attitude do pre-service science teachers have towards inclusive education?
- (iii) What is the efficacy of pre-service science teachers towards teaching in an inclusive classroom setting?

Null Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance

- (i) There is no significant difference in the attitude of male and female pre-service science teachers towards teaching in an inclusive classroom.
- (ii) There is no significant difference in the efficacy of male and female pre-service science teachers towards teaching in inclusive classroom

Review of Literature

Every stakeholder in education has a role to play in ensuring equitable and quality education for sustainable development. It is therefore desirable for researchers to explore perceptions of these stakeholders to inclusive education. The adoption of inclusive education is based on several reasons which could be teacher or student related. Some of the teacher related challenges towards adoption of inclusive education include; teachers' readiness to adopt it, lack of experience in teaching people with special needs, no prior training related to educating people with special needs, lack of awareness of policies relating to persons with special needs, teachers' attitude and efficacy towards adopting inclusive education (Rabi, Ghazali, Rohaizad, & Zulkefli, 2018). It was reported in a recent study by AlMahdi and Bukamal, (2019), that there were some apprehensions related to students who show aggressive behaviour towards others and those that requires communicative technologies. It was specified that pre-service teachers needed more time to interact with student with special needs during practicum and need more preparation and knowledge about educational policies that are related to people with special needs. It is on this premise that the present study investigated the awareness of pre-service teachers on inclusive education policy in Nigeria and their attitude towards teaching students with special needs.

Review of empirical research showed that pre-service teachers in colleges of education have positive attitude towards inclusive education (AlMahdi & Bukamal, 2019; Qandhi & Kurniawati, 2018) whereas their attitude varied based on their gender, academic year and areas of specialization. It was revealed in the works of Goddard and Evans (2018) that pre-service

teachers held positive attitude towards inclusive education and this is strengthened across training years. Though, they varied according to demographic characteristics, constructs and areas of inclusion. In a contrary opinion, Krischler and Pit-ten Cate (2019) who investigated attitudes of pre-service and in-service teachers towards students with two types of special education needs (challenging behaviours and learning difficulties) reported that teachers held negative attitude towards inclusion of students with these specified special needs. Findings from their study further revealed that there was no significant main effect on special education needs type or professional status (pre- or in-service teachers) and there was no interaction effect of special need type and teachers' professional status.

Studies have established the influence of teachers' demographic characteristics such as gender, age, qualifications and experience on their attitude towards inclusive education, one of such study is that conducted by Shane and Christopher (2013) that investigated pre-service teachers' attitude towards inclusive education. The variation in the attitude of males and female as well as the difference in the year of study of pre-service teachers were determined in the survey. Findings from the study revealed that first year pre-service teachers showed more positive attitude than their senior counterparts did. Unlike Shane and Christopher's study that focuses on undergraduate and post-graduate pre-service secondary education teachers' attitude towards inclusion, the present study focused on the attitude of pre-service science education teachers towards inclusive education.

Ajuwon (2012) investigated attitude towards inclusive education using Attitude towards inclusion in Africa scale (ATIAS). Findings from the study established that respondents were tolerant of diverse behaviours of students within inclusive settings. However, they were less confident about their ability to manage the behaviour of the students. This was attributed to possibility in lapses related to inclusive practices in their training. Haug (2010) provided an insight to how inclusive education could be practiced by schools and associated investors. The researcher deliberated on two ways of researching on inclusive education, one of which is studying how school environment is structured (macro orientation) to ensure its implementation. Other way is venturing into what teachers and students does (micro orientation) to ensure its actualization. Having established the guideline for the implementation of inclusion, there is the need to establish teachers' readiness towards ensuring a smooth transition from regular to inclusive education. It is based on this backdrop that the present study investigated pre-service teachers' efficacy towards inclusive education.

Pre-service teachers' efficacy is an essential factor in the implementation of inclusive education. Previous studies have revealed that trainee teachers who possess a high level of efficacy for inclusive education tends to show more positive attitudes towards implementing inclusive education (Zundans-Fraser & Lancaster, 2012; Sharma & Deppeler, 2012). In a study by Loreman, Sharma and Forlin (2013) that examined pre-service teachers' efficacy for inclusive education in four countries, it was found that international differences existed among pre-service teachers' efficacy in the selected country. Teachers in Hong Kong had lower levels of teaching efficacy. The study also considered gender as a variable and findings revealed that gender had no impact on the teaching efficacy of pre-service teachers in an inclusive setting. Sharma and Deppeler in another study investigated pre-service teachers' perceived teaching efficacy, attitudes and concerns about inclusive education. Findings from the study revealed that efficacy is correlated to pre-service teachers' attitude. That is, teachers with a high efficacy shows less concern and positive attitude towards inclusion. As part of the study, influence of gender was determined and it was revealed that there was no significant difference in pre-service teachers' efficacy towards teaching in inclusive settings. However, the females showed more positive attitude than their male counterparts.

Methodology

Descriptive research of the survey type was adopted for this study. Out of a target population of seven hundred (700) pre-service who were in their third and fourth year respectively. A total 300 respondents comprising of 174 males and 123 females were randomly selected for this study. The respondents were made up of pre-service teachers studying Biology education, Chemistry education, and Physics education in the proportion of 106, 85, and 106 respectively. A questionnaire on students' attitudes towards inclusive education adapted from Kielblock (2018) was used to gather data for this study. The questionnaire consists of four sections labeled A-D. Section A consists of general data of the respondents such as; gender, department, and level. Section B of the instrument addresses information about awareness of inclusive education policy in Nigeria while, section C is a 4-point Likert scale ranging from Strongly Disagree to Strongly Agree. This section elicited information about the attitude of pre-service teachers towards inclusive education in classrooms. Section D that is also a 4-point Likert scale response, gathered information about the efficacy of pre-teachers towards inclusive education. The reliability of the instrument was carried out using the test-retest method within an interval of two weeks. A reliability index of 0.74 was obtained using the Pearson Product Moment correlation statistics. A total of 300 copies of the questionnaire was distributed, out of which 297 were properly completed and analyzed in the course of this study. The researchers assured the respondents of the confidentiality of their responses. The questionnaires were returned immediately after they were completed.

Results

This section presents the analysis of data gathered from the study. Out 297 pre-service teachers whose response were analyzed in this study, 174 (58.6%) were males and 123 (41.4%) were females. Meanwhile, 106 (35.7%) Biology education pre-service teachers, 85 (28.6%) were Chemistry education pre-service teachers and 106 (35.7%) were Physics education pre-service teachers.

Question One: To what extent are pre-service science teachers aware of inclusive education policy in Nigeria?

As revealed in Table 1, the majority (72.1%) of the pre-service teachers are aware of inclusive education policy in Nigeria while 27.9% of the participants were not aware.

Table 1: Pre-service teachers' awareness of inclusive education policy in Nigeria

Awareness	Frequency	Percentage
Not Aware	83	27.9
Aware	214	72.1
Total	297	100.0

Question Two: What attitude do pre-service science teachers have towards inclusive education?

The scores of each respondent on attitude held towards teaching in inclusive education were estimated and subjected to percentage analysis. Since there were 38 items on attitude structured in a four-response-type, the minimum, maximum, and range scores of respondents were 38, 152, and 114 respectively. The range was divided by two, that is, $114/2=57$. Thus, pre-service teachers whose scores fell within 38 – 95 and 96 – 152 scores were categorized to hold negative and positive attitudes respectively. The statistics of respondents' scores are summarized as presented in Table 2.

As revealed in Table 2, the majority (59.9%) of the pre-service teachers did not hold a positive attitude towards teaching in inclusive education while 40.1% dispensed a positive attitude towards teaching in inclusive education

Table 2: Pre-service teachers' attitude towards teaching in inclusive education in Nigeria

Attitude	Frequency	Percentage
Negative	178	59.9
Positive	119	40.1
Total	297	100.0

Question Three: What is the efficacy of pre-service science teachers towards teaching in an inclusive classroom setting?

The scores of each respondent on self-efficacy in inclusive education were estimated and subjected to percentage analysis. Since there were 18 items on self-efficacy which were structured in a four-response-type, the minimum, maximum and range scores of respondents were 18, 72 and 54 respectively. The range was divided by 3 levels i.e. $54/3=18$. Thus, pre-service teachers whose scores fell within 18 – 36; 37– 54 and 55 – 72 scores were categorized as those with low, medium and high level of self-efficacy in teaching inclusive education respectively. The statistics of respondents' scores are summarized as presented in Table 3.

As revealed in Table 3, the majority (47.5%) of the pre-service teachers had low self-efficacy for teaching in inclusive classroom settings, while 22.2% were of moderate level and 30.3% of the pre-service teachers showed high level of self-efficacy. Hence, a larger percentage of the respondents have low self-efficacy.

Table 3: Level of pre-service teachers' self-efficacy towards teaching in inclusive classrooms in Nigeria

Efficacy Level	Frequency	Percentage
Low	141	47.5
Moderate	66	22.2
High	90	30.3
Total	297	100.0

Hypotheses Testing

Independent t-test was used to test the hypotheses at 0.05 level of significance

Hypothesis One: There is no significant difference in the attitude of male and female pre-service science teachers towards teaching in inclusive classroom

As revealed in Table 4, the t-value .14 is obtained with a p-value of 0.68 computed at 0.05 significant level. Since the p-value of 0.676 is greater than 0.05 level of significance, the null hypothesis one was not rejected. Therefore, there was no statistically significant difference in the attitude of male and female pre-service teachers towards teaching in inclusive education ($t_{295} = .137, p>0.05$).

Table 4: t-test statistics showing the difference in the attitude of male and female pre-service teachers towards teaching in inclusive education

Gender	N	Mean	SD	df	t-value	Sig	Remark
Male	174	107.93	12.37	295	0.14	.68*	Not Rejected
Female	123	107.73	12.37				

*p>0.05

Hypothesis Two: There is no significant difference in the efficacy of male and female pre-service science teachers towards teaching in inclusive classroom.

As revealed in Table 5, the t-value 1.49 was obtained with a p-value of 0.22 computed at 0.05 significant level. Since the p-value of 0.22 is greater than 0.05 level of significance, the null hypothesis one was not rejected. Therefore, there was no statistically significant difference in the efficacy of male and female pre-service teachers towards teaching in an inclusive classroom ($t_{295} = 1.49, p > 0.05$).

Table 5: t-test statistics showing the difference in the efficacy of male and female pre-service science teachers towards teaching in inclusive classroom

Gender	N	Mean	SD	df	t-value	Sig	Remark
Male	174	51.78	8.68	295	1.49	.22	Not Rejected
Female	123	49.29	9.17				

*p>0.05

Discussion

The present study determined the attitudes of pre-service science teachers towards inclusive education. The study further examined pre-service science teachers' efficacy towards inclusive education. Findings from this study revealed that majority (72.1%) of the respondents are aware of inclusive education policy in Nigeria. This is an indication, that pre-service teachers are conversant with education policies in their country. Findings also, indicated that respondents held negative attitude towards inclusive education. This finding could be attributed to the type of experiences pre-service teachers are exposed to during training. This finding is similar to the findings of Krischler and Pit-ten Cate (2019) who reported that pre-service teachers hold negative attitude towards teaching students with special education needs. However, this finding is in contrary to the findings of AlMahdi and Bukamal (2019) and Qandhi and Kurniawati (2018) that reported that pre-service teachers held positive attitude towards inclusive education.

Findings from this study further revealed that majority of the pre-service teachers had low efficacy towards implementing inclusive education. This could probably be attributed to their exposure towards inclusive education in their teacher training programmes. This finding provided more insight to the submission of Ahsan (2014) that stated that a high level of efficacy towards inclusive education shows tendency of positive attitude towards it. Hence, one can infer that the negative attitude reported in this study had correlation with their low level of efficacy. The finding from this study differs from the findings of Zundans-Fraser and Lancaster (2012) who reported a high level of efficacy among pre-service teachers towards inclusive education.

This study also, revealed that there was no significant difference between male and female students' attitude towards inclusive education. This could be attributed to the fact that both male and female pre-service teachers have the same exposure in their teacher training programmes. This finding is contrary to the findings of Shane and Christopher (2013) who reported that gender has significantly influence pre-service teachers' attitude towards inclusive education. Lastly, this study revealed that there is no significant difference between male and female pre-service teachers' efficacy towards inclusive education. This finding is similar to the findings of Loreman, Sharma and Forlin (2013) and Sharma and Deppeler (2012) who reported that pre-service teachers gender does not have impact on their efficacy towards teaching in inclusive setting.

Conclusion

The study concluded that majority of the respondents (72.1%) are aware of the policy on inclusive education in Nigeria. Also, Majority of the respondents held negative attitude towards inclusive education. Furthermore, this study concluded that a high percentage of the respondents had low efficacy. It was concluded from the findings of this study that there was no significant difference between male and female students' attitude towards inclusive education. Finally, there was no significant difference between male and female students' efficacy towards implementing inclusive education.

Recommendations

It is therefore, recommended that more awareness be created among pre-service teachers on inclusion. Furthermore, efforts should be intensified in teacher education programmes to impact knowledge on inclusive education among pre-service teachers. This may likely, strengthen their attitude and efficacy towards inclusion. Lastly, both male and female pre-service teachers should be acquainted with similar experience towards learning about inclusion.

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