



IN-SERVICE TRAINING AND ENVIRONMENTAL EDUCATION STUDENTS' ACADEMIC ACHIEVEMENT IN THE UNIVERSITY OF CALABAR-NIGERIA

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ABSTRACT

This study examined the impact of in-service training on the academic achievement of Environmental Education students at the University of Calabar, Nigeria. In-service training serves as a vital mechanism for professional development, enabling lecturers to enhance their pedagogical skills, subject mastery, and use of innovative teaching strategies, which directly influence students' learning outcomes. The study adopted an ex-post facto research design, which is suitable when variables cannot be manipulated as their effects have already occurred. The population consisted of all 35 lecturers in the department, representing diverse academic qualifications and demographics. Given the manageable size, a census sampling technique was employed, ensuring that the entire population was studied. Data collection relied on a structured instrument titled the Teachers Professional Development Questionnaire (TPDQ), consisting of 20 items on a four-point Likert scale. The instrument measured dimensions of professional development including mentorship, seminars, conferences, and in-house trainings. In addition, students' academic performance was measured using their Cumulative Grade Point Average (CGPA) obtained from the Exams and Records Unit of the department. Findings revealed that lecturers' participation in in-service training significantly enhanced their instructional competence and motivation, which translated into improved student engagement and higher academic achievement. The study concluded that institutional investment in professional development is essential for promoting academic excellence. It recommended that universities promote regular in-service training programs, align training with contemporary educational demands, and encourage faculty participation to strengthen teaching quality and learning outcomes.

Keywords: In-service, Environmental Education, Academic performance, Students, University of Calabar.

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BACKGROUND

Stakeholders in Environmental Education have raised serious concern about the quality of Education given to our students. People are alarmed at the deployable level of academic performance of students in Environmental Education Department University of Calabar basically because students' performance appear to be dwindling.

In today's society, schools are being held accountable for every aspect of students performance. The success of the entire educational system depends on the quality of the teachers. If the teaching man power is weak the products are likely to be weak graduates. This will in-turn affect the nation economically, socially and morally. Emeh and Agba (2010) buttressed the assertion that qualitative products of teaching are significantly related to the quality of teaching personnel. Education being a necessary instrument for the transmission of knowledge is largely dependent on the teachers who are saddled with the responsibility of delivering the core contents of education.

Over the years, the Department of Environmental Education in the University of Calabar has been producing students with fair results graduating second class upper downward which reflects the kind of teaching and learning activities that occur in the Department. Though these results seem okay, it does not seem to be compared to other departments or its contemporaries in same faculty where the competition for first class has been the order of the day. In 2024 University of Calabar Convocation, many departments were seen graduating with first class students who will be automatically employed after their youth corps as assistant lecturers. Yet none of the 32 first class graduands were from the Department of Environmental Education.

According to Aduke (2007), quality education cannot be obtained without quality teachers. The author further avers that the future of a nation or society depends greatly upon the quality of education provided for its citizens and upon inspired, satisfied and dedicated teachers. Thus, any meaningful development in the educational system is associated with well-trained and dedicated teachers who are enthusiastic to put in their best into the teaching profession. Agbor et al. (2025) observed that to make the society better and to help the teachers to possess the necessary emotional, psychological and intellectual competencies expected of a good teacher, the teacher has to be well trained and developed. This is because the training determines the capabilities of the teacher which in turn set the boundaries for educational attainment in the society (Giwari, 2025)

In recognition of the importance of teacher education, Ukeje (1985) and Lawal (2003) state that the teacher is the hub of any educational system because the school cannot be better than its teachers. According to them, it is upon teachers' quality and devotion to teaching that the effectiveness of an educational system can be tested. In studies conducted by Pillai (2001) and Ololube (2005), they recommended that teachers should be well-prepared for their duties through appropriate teacher education programmes.

Lawal (2003) maintained that teacher education shall continue to be the key to educational development in Nigeria. Thus, education is nothing without quality teachers. Perhaps, this must have informed Nigeria's National Policy on Education to articulate the objectives of Teacher Education as follows (FRN, 2014:38):

- To produce highly motivated, conscientious and efficient classroom teachers for all levels of our educational system.
- To encourage further the spirit of inquiry and creativity in teachers.

- To help teachers to fit into the social life of the community and society at large and enhance their commitment to national goals.
- To provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations.
- To enhance teachers' commitment to the teaching profession.

To achieve the aforementioned objectives, the Federal Republic of Nigeria (FRN, 2014) recommends that Teacher Education Programmes shall be structured to equip teachers for the effective performance of their duties and that Teacher Education shall continue to take cognizance of changes in methodology and in the curriculum.

What emerges from these views and the objectives of Teacher Education is the emphasis on quality and professional competence of a teacher. The teachers are the core in the education process and this has always been stressed by various scholars, committees and conferences in the history of educational development in Nigeria. For instance, The Semode Committee of 1971 notes that promising development programmes have founded due to lack of trained teachers and concluded that it is a short-sighted policy, waste of time, energy and resources to embark on the improvement or the expansion of programmes without adequate provision being made for the production of well-trained teachers (Adesina, 1977)

Similarly, the Third National Development Plan reiterates that the quality of the teaching staff is probably the most important determinant of educational standard at all levels. Supporting this assertion, Agbor et al. (1992) opined that it is upon the staff number, their quality, efficiency and effectiveness that the success of the educational system and indeed the future of the nation depends.

Quality has to do with the degree of goodness or worth of a person or thing or that which distinguishes a person or thing. Thus, Quality Teacher Education refers to the worth and functionality of Teacher Education in relation to the overall educational system. According to Hillard (1971:72), teacher education requires that the beneficiary should not only have certain basic academic knowledge but in addition should acquaint himself with specified amount of education theory (principles and methods of teachings, drawing upon education psychology, philosophy and sociology) and efficiency practice in the application of the knowledge so gained through training to meet these requirements, teachers development must become due process.

There has been a greater awareness and realization that teachers who were prepared some few years ago are not adequately equipped to perform effective teaching today except completed by in-service training. Changes in technology and life styles demand continuous updating of knowledge, skills and interests. In-service education may serve as the process by which practicing teachers improve upon their knowledge and therefore their performance in the classroom. It is the process of continuing learning and retraining of teachers as the needs arise in the course of their teaching. It is viewed as one means for continued professional growth which encourages the extension of technical assistance by teachers educators.

A common feature of the in-service programme is the emphasis on the improvement of instruction as well as encouragement for professional growth. This emphasis has been a result of the sustained desire by teacher educators either as individuals or through various educational organizations (National Policy on Education 2014, Awokoya 1980, Curriculum Organization of Nigeria, CON 1984, Cross River State Government 1979 and 1985 and Uche 1981, etc.) to improve teachers and the quality of instruction in schools.

The essence of keeping abreast with new techniques, and knowledge today requires a continuous process of education and re-education which must include both the subject matter and evolving methodologies. It was noted that no matter the efficiency of the pre-service training teachers received, there will still be areas of inadequacy (FRN, 2014).

The rate of academic development and the increasing demand with regards to knowledge-based economy and technology advancement require a constantly and regularly update of teaching workforce. Thus, teachers that are professionally trained and have acquired skills are expected to expose to recurrent training due to the changing in job content and environment. To meet these requirements, teachers' development must become a life-long process. Also effective and efficient curriculum planning and implementation involves professionally trained teachers because they constitute the vital force as part of the implementers of the curriculum at every stage of the educational programme. Therefore, teachers are important factor in educational development. The quality of teachers determined the quality of their output. As such, no educational system can be consolidated without the development of the teachers that will implement the programme.

Teachers' professional developments are activities that develop the skills, knowledge, expertise and other characteristics of a teacher. It entails activities that enhance a teacher's skills, knowledge and expertise to improve their teaching practices, including adapting to new technologies like AI among others (Ananyi & Nwosu, 2023). According to Cambridge International, Teacher Professional Development (TPD) "involves a continuous process of reflection, learning and action to further a teacher's knowledge and skills, leading to enhance teaching practices that positively impact on students learning. The imperative role of teachers' professional development programmes in the attainment of quality education cannot be underestimated. Teachers are the nub and drivers of any education system because the school cannot be better than their teachers. Akpan et al. (2008) asserted that it is upon teachers' quality devotion to teaching and their continuous development that the quality of education can be tested. This implies that teacher should be well prepared for their duties through regular and appropriate teacher development programmes.

In support of their above, the National Policy on Education (Federal Republic of Nigeria (FRN) 2014); section 8, in - service training shall be developed as an integral part of continuing teacher education and shall also take care of inadequacies. The policy laid emphasis on the significance of in - service training and further stated that efforts towards the improvement of quality education at all levels include regular in-service training programs for teachers. These two policy statements draw attention to the necessity of consistent development of teachers for improving the Nigerian educational system that will enhance the quality of education offered to learners at all levels. Therefore, it should be denoted at this point that the education of teachers is not delimited to the training at the college, but a continuous and lifelong process.

From the perspective of learning outcomes, Guskey (2022) defined Teacher Professional Development (TPD) as systematic approach of bringing about change in the classroom practice of teachers, in terms of attitude, skills, knowledge and beliefs and in the learning outcomes of students. Also, the functionalist perspective and described TPD as technical processes that help teachers to provide better service to students. The aspect of teacher's professional development that will be investigated in this study include; teachers' mentorship, teacher seminars, teachers' conferences and teachers in-house training (Ololube, 2009).

Purpose of the Study

This research work is aimed at investigating teachers' provisional development on Environmental Education students' academic performance in the University of Calabar, Calabar, Nigeria. Specifically, the study seeks to:

- Determine the impact of teachers' mentorship on environmental educational academic performance
- Evaluate the impact of teachers' seminars on environmental education academic performance
- Examine the impact of teachers' conferences on environmental educational academic performance
- Investigate teachers in-house training and environmental educational academic performance

Hypotheses

Based on the objectives stated, the following hypotheses were formed:

- There is no significant impact of teachers' mentorship on environmental education student academic performance.
- Teacher seminar does not significantly impact environmental education students' performance.
- There is no significant impact of teachers' conferences on a environmental education student academic performances.
- Teachers' in-house training does not significantly impact environmental education students' performance.

LITERATURE REVIEW

Mentoring and Students Academic Performance

Mentoring has direct relevance to teachers' effectiveness (Nolan, 2022). As the tool for addressing social exclusion, it means that teachers need to liaise with mentors to gain inclusion in the body of professionals. Mentoring is essential as it brings about changes in pedagogical practices. Though mentoring teachers are guided, supported and taught to transform their classroom practices. This transformation improves mentees preparations, teaching quality and learning environment leading to teacher effectiveness. Mentoring transform mentees classroom practices compared to those who are not mentored. This is supported by Clark and Byrness (2019) who explained that mentors rated the mentoring experiences they had are more helpful as compared with those mentees who were not provided mentoring support.

Mentoring processes guide mentees to develop their talents, skills, knowledge and to change attitude toward teaching. It is a liberating approach to teaching couched in an art of cognition not in the transfer of information. According to Ololube (2009), the most valued mentoring skill is giving encouragement. This includes giving your mentoring partners recognition and sincere positive verbal feedback. As mentees are guided, supported and taught,

they transform the way they teach. The observations, interactions and practices they make improve teacher effectiveness. Mentees who are not mentored will continue to teach the same way they were taught in universities, meaning there will not be transformed to effective teachers as their classroom practices will not be improved.

Mentees who have not undergone transformation largely use transmission methods of teaching, which lack the 21st century approach (Nabwire 2015). It places too much emphasis on academic learning and passing examinations at the expense of appropriate knowledge and skills needing for solving real life problems. The strong stand in the mentor's perception of their role was that of looking at themselves as learners who would also grow as a consequence of the mentoring interactions (Halai, 2018). These studies provide evidence of mentors' knowledge enhancement of how teachers learn developing or refining skills of working collaboratively with teachers as well as the development of their subject knowledge.

Anyanwu and Abe (2023) investigated the influence of mentoring on teachers' instructional delivery and students' academic performances in secondary schools in Obio/Akpor Local Government Area, Rivers State. Two research questions guided the study. The research design used for the study was descriptive survey design. A sample of three hundred and twenty (320) teachers were used for the study. A questionnaire was used for data collection. Mean and standard deviation were the major statistical tools used for data analysis. Major findings revealed that the one-on-one Mentorship Programme was common amongst secondary school teachers in Obio/Akpor local government area, and that mentoring has a great influence on beginning teacher service delivery and also on students' academic performances. Based on this, it was recommended that, government and other stakeholders in the Education industry, take the implementation of mentoring programs in secondary school seriously as this will help enhance the instructional service delivery.

Teachers' Seminars and Students' Academic Performance

Seminar is a veritable method of gaining knowledge through active participation on the outline programs of action. Seminar is a gathering of professionals in a particular area of Interest who have the single purpose to bring solution to immediate and future challenges that bedevils their profession. Asagba (2024) pointed out that in seminar, experts and experienced personnels (staff) in a particular field organized to teach the junior workers during seminars on how to do the job for inputs and output in their field.

Seminar according to Akpomi (2021) is a meeting of academics, professionals or people with common interest to study, brainstorm or discuss a particular topic so as to find solutions to the issue raised. The researcher went further to state that seminar has to do with a meeting of group of persons or students and their lectures in college or university to study and examining particular issues, or problems that are topical and current in their programme areas. It is believed that seminar is an academy where experience, ideas and knowledge are shared in order to assist the less experienced, low ideas and green horns to become intellectual giants. Ezechukwu (2015) found out that those lecturers who are regular in seminar attendance are efficient in effective classroom teaching. The attendance of seminars by lecturers has been reported to bring about enhanced students commitment. Seminar is also an academic forum organized in a college or University to give research students the opportunity of presenting and defining The Blueprint of their proposed research. Akpomi (2021)

Amie-Ogan and Unachukwu (2021) examined the relationship between staff development programs and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State. The correlational research design was adopted to examine the relationship between staff development programmes and students' academic performance. The total population for the study was 2,055 respondents consisting of 105 principals and 1950 teachers. A sample of 693 respondents was drawn using the multi-stage sampling technique. Two instruments titled; "Staff Development Programmes Questionnaire" and "Students' Academic Performance Questionnaire" were used to elicit information from respondents. The questionnaires were coded using the 4-point Likert scale of strongly agree, agree, disagree and strongly disagree.

The instrument was validated by experts in the Department of Measurement, Evaluation and Educational Management, all in the Faculty of Education, Rivers State University. The test-retest reliability method was employed in testing the reliability of the instrument and correlated using Person Products Moment Correlation Coefficient which yielded a reliability coefficient of 0.82. The research questions will answered using Person Products Moment Correlation Coefficient Statistics, while the null hypothesis were tested using t-Transformation statistics at 0.05 level of significance with a critical value of +1.96. Results showed high and positive relationship between coaching/mentoring, computer-based programs and students' academic performance in public secondary schools in Port Harcourt Metropolis of Rivers State. It was recommended that coaching and mentoring of teachers should be adopted by school administrators as well as by professionals in educational institutions. Government should also adopt more innovative computer-based programs for public senior secondary school teachers for improved, effective and efficient results in instructional delivery.

Teachers' Conferences and Students' Academic Performance

Conference is an elaborate gathering of expertise where papers and research findings are presented in order to find lasting solution to common problems. In a conference gathering, conferees come from different institution of learning to bring about their own perspective on the theme of issues at hand in order to find a lasting solution to it. Through conference attendance, it is believed that lecturers that are active will smile home distinguish with new knowledge. This is one of the design programs that can enhance teachers' skills and knowledge on the areas of specialization. This is the assemblage of scholars who have intention to share knowledge, ideas and experience on how to tackle most challenging educational programs and activities. Scholars gather under this umbrella to make meanings suggestions on the best approach in tackling contemporary educational programs. Conferences must be designed to have themes and sub-themes to enable the participants make meaningful and cogent contributions.

According to Asiabaka and Emenalo (2021), conference is mostly a gathering of individuals with common interest for the purpose of sharing knowledge that would contribute to local, national and International Development. Conference is highly required by teachers for them to have rapid growth and development in their profession. The requisite confidence to Conference affords teachers the opportunity to embrace new knowledge, skills, attitudes which they utilize in running their schools effectively and efficiently (Okeh, 2019). A conference always ends with the communique on the arrived at by the conference. In the conference, advanced notice is always given to enable some facilitators to prepare their papers for delivery or

presentation (Okeh, 2019). Conferences are highly required and encouraged for teachers and other facilitators of knowledge to attend in order to grow in their career areas.

Eze (2016) examined the impact of training and retraining on teachers' productivity in Enugu State. It is survey research. A 20-item questionnaire designed by the researcher was used to collect data from the respondents. A sample of 256 teachers in secondary schools was used. Questionnaire was distributed by the help of two train research assistants. Result show that training and retraining enhanced teachers' productivity to a great extent. It also revealed that the perception of male (2.30) and female (2.94) deferred on the impact of training and retraining on teachers' productivity. It was concluded that teachers need to be trained and retrained regularly in order to enhance their productivity on the job. Babaita in Ezeani and Oladele (2023) observing the impact of conferences on teachers noted that it has become a driving Force for investment in training and management development. He therefore recommended the it is vital that teachers, and principals, as well as receive training. Conferences enhance the job performance of teachers. Quartey in Ojimhenkele (2014) contented that, the more teachers are trained and are satisfied with their job an environmental condition, the more it helps to enhance their organizational performance.

Enamul et al. (2022) in their own study found significant impact of train gang conferences on teacher's professional development activities on school improvement. They also found that maximum School improvement via better academic performance of students can be achieved if schools put more emphasis on teachers' conferences, in service train and classroom observation. Relationship exists between training, retraining and productivity. Bassey, Bassey, Ojua and Ottong (2021) establish a significant relationship between conferences attendance of teachers and their productivity as manifested in terms of their punctuality, organizing extra lessons for students, timely submission of examination grades and finally in participation in extracurricular activities in school. All these effects of training on teachers invariably have direct input towards better academic performance of students. In studying the perception of teachers to train and retaining and their attitude to work, Akpan and Ntukidem (2018) noted a significant positive relationship. Obi-Anike and Ekwe (2014) in their own study indicated that there is a positive relationship between training/retraining an organizational effectiveness and also increased interpersonal and teamwork.

Teachers' In-House Training and Students' Academic Performance

The need for in-house training in schools is getting more attention for teachers to equip with new knowledge and skills for them to face new challenge and reformation in education. In-house training can enhance the professionalism of teachers who can contribute to the organization to achieve its goals. In-house training is a professional and personal educational activity for teachers to improve their efficiency, ability, knowledge and motivation in their professional work. In this aspect, in-house training for teachers is the driving force behind much change that has occurred in the area of teaching and learning. It is vital that teachers keep up to date on the most current concepts, thinking and research in their field and also promote professional growth among teachers in order to promote excellent and effective teaching and learning environment for students. To Ololube (2009), in-house training for teachers enables the teachers to be more systematic and logical in their teaching style.

In-house training is a planned process whereby the effectiveness of teachers collectively or individually is enhanced in response to new knowledge, new ideas and changing

circumstances in order to improve, directly or indirectly the quality of pupils' education. In-house training can also change the attitude and skills of teachers and further increase the performance of students. It also can help to change the procedures, approaches and practices teacher teach, the way student learn and would also help to create an excellent school culture in schools. According to Fredrick and Stephen (2018), during the in-house training, teachers will be taught schools management skills, evaluation techniques and master wider content areas of their subjects. For this reason, teachers and educational experts should increase their effort in fostering and implementing in-house training in schools so as to improve the effectiveness of development in schools.

A study by Cohen and Hill (2018) found that teachers whose in-house training were focused on the curriculum can teach well when what has been learnt were applied in the classroom. The study also showed that students' achievements are usually good if their teachers participated in training that focused on the curriculum. Similarly, Garet, Porter, Desimone, Birman and Yoon (2022) studies teachers' involvement in an in-house training that emphasized on mathematics and science subjects. They discovered that teachers were more prepared to implement changes in teaching practice as well as improve their knowledge and teaching skills when the training was much related to daily experiences and parallel to assessment thus leading to better academic performances of the students.

METHODOLOGY

The study employed an ex-post facto research design, which is appropriate when variables cannot be manipulated because their effects have already taken place. The employed design was used the researchers have no direct control over the independent and dependent variables, because they were already established and cannot be altered. In this context, the researchers merely observed the existing conditions, collects relevant data, and makes generalizations about the population based on the findings.

The research was conducted in the Department of Environmental Education, Faculty of Science Education, University of Calabar. The department is located within the former Faculty of Law building and is managed by the Head of Department, supported by 11 non-academic staff. The academic staff strength consists of 35 lecturers, ranging from professors to assistant lecturers. The department also has a student population of approximately 146 undergraduates, distributed across four levels: Year 1, Year 2 (A/B), Year 3, and Year 4 (final year).

The population of the study comprised all 35 lecturers in the Department of Environmental Education, representing diverse academic qualifications, gender, and religious backgrounds. Given the manageable size, the researcher employed a census sampling technique, thereby including the entire population as the study sample.

Data collection was carried out using a structured questionnaire titled *Teachers Professional Development Questionnaire (TPDQ)*. The instrument was divided into two sections: Section A captured respondents' demographic information such as gender and teaching experience, while Section B contained 20 items aligned with the study variables. Items 1-5 measured teachers' mentorship, items 6-10 assessed participation in seminars, items 11-15 examined conference attendance, and items 16-20 focused on in-house training programs. Responses were rated on a four-point Likert scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

To measure students' academic performance, data on their Cumulative Grade Point Averages (CGPAs) were obtained from the Exams and Records Unit of the department. These academic performance scores were subsequently correlated with the independent variables captured through the questionnaire to establish the relationship between lecturers' in-service training and students' achievement.

RESULTS

The 0.05 level of significance was used for the statistical testing of each hypothesis:

Hypothesis One: There is no significant impact of teachers' mentorship on environmental education students' academic performance.

The independent variable involved in this hypothesis is teachers' mentorship, while the dependent variable is environmental education students' academic performance. Independent t-test analysis was employed to test this hypothesis. The result of the analysis is presented in Table 1.

Table 1: Independent t-test analysis of the impact of teachers' mentorship on environmental education students' academic performance (N=35)

Teachers' mentorship	N	Mean	SD	t-value
Mentored	23	29.35	1.98	8.43*
Not mentored	12	26.21	2.06	

*Significant at .05 level, critical $t=1.96$, $df=33$

The result in Table 1 revealed that the calculated t-value of 8.43 is each higher than the critical t-value of 1.96 at 0.05 level of significance with 33 of degrees of freedom. With this result the null hypothesis that there is no significant impact of teachers' mentorship on environmental education students' academic performance was rejected. This implies that there is a significant impact of teachers' mentorship on environmental education students' academic performance in the University of Calabar.

Hypothesis Two: There is no significant impact of teachers' mentorship on environmental education students' performance.

The independent variable involved in this hypothesis is teachers' seminars while the dependent variable is environmental education students' performance. Independent t-test analysis was employed to test this hypothesis. The result of the analysis is presented in Table 2.

Table 2: Independent t-test analysis of the impact of teachers' seminars on environmental education students' academic performance (N=35)

Teachers' seminars	N	Mean	SD	t-value
Attend	28	27.77	2.09	7.21*
Never attended	7	25.89	2.22	

*Significant at .05 level, critical $t=1.96$, $df=33$

The result in Table 2 revealed that the calculated t-value of 7.21 is each higher than the critical t-value of 1.96 at 0.05 level of significance with 33 of degrees of freedom. With this result the null hypothesis that teachers' seminars does not significantly impact environmental education students' performance was rejected. This implies that teachers' seminars significantly impact environmental education students' performance in the University of Calabar.

Hypothesis Three: There is no significant impact of teachers' conferences on environmental education students' performances.

The independent variable involved in this hypothesis is teachers' conferences while the dependent variable is environmental education students' academic performance. Independent t-test analysis was employed to test this hypothesis. The result of the analysis is presented in Table 3.

Table 3: Independent t-test analysis of the impact of teachers' conferences on environmental education students' academic performance (N=35)

Teachers' conferences	N	Mean	SD	t-value
Attend	32	27.94	2.07	3.74*
Never attended	3	26.26	2.15	

Significant at .05 level, critical t=1.96, df=33

The result in Table 3 revealed that the calculated t-value of 3.74 is higher than the critical t-value of 1.96 at 0.05 level of significance with 33 of degrees of freedom. With this result the null hypothesis that there is no significant impact of teachers' conferences on environmental education students' academic performances was rejected. This implies that there is a significant impact of teachers' conferences on environmental education students' academic performance in the study area.

Hypothesis Four: Teachers in-house training does not significantly impact environmental education students' performances.

The independent variables involved in this hypothesis is teachers' in-house training, while the dependent variable is environmental education students' academic performances. Independent t-test analysis was employed to test this hypothesis. The result of the analysis is presented in Table 4.

Table 4: Independent t-test analysis of the impact of teachers' in-house training on environmental education students' academic performance (N=35)

Teachers' in-house training	N	Mean	SD	t-value
Yes	27	28.79	2.02	7.68*
No	8	25.86	2.11	

Significant at .05 level, critical t=1.96, df=33

The result in Table 4 revealed that the calculated t-value of 7.68 is higher than the critical t-value of 1.96 at 0.05 level of significance with 33 of degrees of freedom. With this result the null hypothesis that teachers' in-house training does not significantly impact environmental education students' academic performances was rejected. This implies that there is a significant impact of teachers' conferences on environmental education students' academic performance.

DISCUSSION OF FINDINGS

Teachers' mentorship and students' academic performance

The result of hypothesis one revealed that, there is a significant impact of teachers' mentoring on students' academic performance in the study area. The findings of the hypothesis is in line with the view of Ololube (2009) who averred that teachers mentorship allows new and novice teachers to acquire on-the-job-experience that help them become better and efficient teachers in the course of their duty. The author further noted that novice teachers viewed their mentors as models who help in the understanding of their own strengths and weakness, as well as acquired problem solving skills, thereby filling the gap created by limited practices and experiences not covered during teacher training.

Also in tandem with the findings of this hypothesis is Nabwire (2015) who posited that the assistance given to teachers helps build their confidence, improve their teaching and help teachers to improve their effectiveness and efficacy in guiding learners' achievements. Insisting more on the effectiveness of teachers' mentorship, the authors maintained that, helping teachers to improve their effectiveness and build teachers' confidence in teaching and students' learning. In this way, mentorship helps strengthen teachers' classroom practices in schools.

Teachers' seminars and students' academic performance

The result of this hypothesis indicates that teachers' seminars significantly impact environmental education students' performance in the University of Calabar. The findings of this hypothesis is in consonance with the view of Asagba (2024) who noted that in seminar, experts and experienced personnel (staff) in a particular field are organized to teach the junior worker during seminars on how to do the job for higher input and output in that field. The author went on to note that, seminar is an academic where experiences, ideas and knowledge are shared in order to assist the less experienced, low ideas and green horns to become intellectual giants. Eze (2016) corresponding agreed that teachers' seminars is very important to both the teachers and the academic learning processes of students, bearing in mind that experience shared during seminars helps the teachers to become versatile especially in the art of teaching. The Eze's idea is that teachers who participate in staff development programmes such as seminars are more effective in their job performance than those who did not, in terms of knowledge of subject matter, classroom management, teaching methods and evaluation of student's work.

Teachers' conferences and students' academic performance

The result of the third hypothesis showed that, there is significant impact of teachers' conferences on environmental education students academic performances in the study area, the finding of this hypothesis is in line with the view of Asiabaka and Emenalo (2021) that,

conference is mostly a gathering with common interest for the purpose of sharing knowledge that would contribute to local, national and international development. Interestingly, the authors maintained that teachers that attend conferences often are always updated on the recent happens, pedagogy-wise and other newly introduced methods that would make the process of teaching and learning seemly, which at the end translates into student's academic performances. Babaita in Ezeani and Oladele (2023) observing the impact of conferences on teachers noted that it has become a driving force for investment in training and management development. He therefore urged that it is vital that teachers and principals as well as receive training.

Teachers' in-house training and students' academic performance

The result of the final hypothesis showed that teachers' in-house training significantly impacts environmental education students' performances in the study area. The result of this hypothesis is in line with Agbor et al. (2025) who posits that in-house training plays a major role to improve the teachers' performance in school. In-house training can also change the attitude and skills of teachers and further increase the performance of students. It also can help to change the procedures, approaches and practices teachers teach, the way student learn and would also help to create an excellent school culture in schools. Ololube (2009) noted that when teachers undergo in-house training, they feel more confident in their abilities. Confident teachers are more likely to deliver lessons effectively, engage students and adapt to challenges in the classroom. This increased confidence directly influences student performance by fostering an environment where students feel motivated and supported.

Also, in tandem with the findings of this study, Fredrick and Stephen (2018) averred that teacher in-house training helps educators stay updated on new trends, research and educational tools. Knowledge and motivated teachers tend to inspire their students, making learning more interesting and relevant. When teachers are motivated to implement innovative strategies, students benefit by receiving more dynamic and effective instruction. When teachers undergo training in emotional intelligence, conflict resolution and communication, they are better equipped to create a positive and supportive learning environment. A positive atmosphere encourages students to actively participate, take risks in learning and perform better academically.

CONCLUSION

Based on the results of the study the following conclusions were reached; there is a significant impact of teachers' mentorship on environmental education students' academic performance. Teachers' seminars significantly impact environmental educational students' performance. There is a significant impact of teachers' conferences on environmental educational students' academic performances. And finally, teachers' in-house training significantly impact environmental education students' performance.

Recommendations

Based on the finding of the study the following recommendations were made:

- The government and school administrators should ensure that new and young building teachers undergo mentorship by experienced teachers, who would teach them the rudiment of not just classroom management, but other facets of teaching which would at the end translate into good students' academic performance.
- Teachers should be encouraged to attend seminars and conferences regularly. This could be in form of the government or the school administrators funding such seminars/conferences in part or wholly so that issues of financial burden would not be a stumbling block.
- Teachers knowing that impact of conferences should on their own strive to be part of it as will help them stay updated on their area of professional competences and thus helps them to produce students with sound knowledge of subject matter.
- The government should make in-house training a compulsory part of teaching job so that teachers on the job could learn from those that are ahead of them, as it is often said that "experience is the best teacher".

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