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# EXTENT OF SCIENCE TEACHERS' PREPAREDNESS FOR EFFECTIVE CLASSROOM DELIVERY IN THE ERA OF SOCIO - POLITICAL AND ECONOMIC UNCERTAINTY IN AWKA.

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## Abstract

*The study investigated extent of science teachers' preparedness for effective classroom delivery in the era of socio - political and economic uncertainty in Nnamdi Azikiwe University, Awka. The study adopted descriptive survey design. Two research questions guided the study and all academic staff members from the Science Education, Computer Science, Technical and Vocational Education and Human Kinetics Departments at Nnamdi Azikiwe University Awka made up the population of the study. Data collection was done by the researchers using a validated questionnaire on extent of science teachers 'preparedness for effective classroom delivery in the era of socio - political and economic uncertainty (QESTPECDESPEU), consisting of 16 items. The reliability index was determined by administering the questionnaire to 20 academic staff from the Science Education Department at Chukwuemeka Odumegwu Ojukwu University, yielding an impressive coefficient of 0.88 through Cronbach Alpha technique coefficient analysis. Mean and standard deviation analysis provided answers to the research questions that focused on examining the extent of science teachers' preparedness for effective classroom delivery during a period of socio-political and economic uncertainty. Findings revealed that Science Teachers are prepared for effective classroom delivery despite the socio-political and economic uncertainty. Based on the findings of the study, it was recommended that science teachers continually undergo professional development trainings irrespective of socio-political and economic uncertainty.*

***Keywords: Science teachers, preparedness, socio-political uncertainty, economic uncertainty.***

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## Introduction

Education is one of the major tools that boosts the economy of every nation as well as improve the standard of living of the citizens. According to Amobi and Okoli, (2022) Education is a vital instrument in social and economic mobility at the personal level and as an instrument of transformation of society at the national level. Hence, the growth of any nation to the standard of 21st-century technology hinges on the scientific-based knowledge of the citizen which in turn is a measure of advancement in science. Science and Technology has greatly improved the standard of living. Teachers in general and science teachers in particular have been on a quest for innovative pedagogical methods that will be effective in teaching and learning. The readiness of teachers to effectively implement educational practices and meet the needs of students is referred to as teacher's preparedness. It encompasses various aspects such as pedagogic, personal, social and professional competence. This preparedness is of essence following post covid-19 pandemic and era of political and economic uncertainty. Uncertainty which is a state of doubt about the future or about what is the right thing to do or not. In support, Webb, Kohlrabi and Piper (2021) stated that amid a global pandemic, imagine how unprepared teachers felt as they transitioned their teaching and learning processes in an arena where there was and still is uncertainty. Political uncertainty according to Streb (2001) is a composite of low political constraints and low polity persistence. Worraphan, Wisuttorn and Wonlop (2023) are of the view that political uncertainty and partisan conflicts are the problems and crisis which harm economic system of both developed and developing countries. However, the weight of the harm is more pronounced in developing countries like Africa and Nigeria in particular. In the view of Marcella (2016), economic uncertainty refers to a situation in which the future economic environment is difficult to predict, and there is a high degree of risk or unknowns involved. This can be caused by a variety of factors such as political instability, natural disasters, market fluctuations, changes in government policies and pandemic breakout.

Covid – 19 disease was a viral disease that broke out in 2020. The pandemic breakouts became a socio-political issue that led to uncertainty in the world, Nigeria not exempted due to the disruption it brought to educational and other sectors. This is in line with the thought of Webb, et al (2021) whose work reported that educators continued to focus on professional development during the summer of 2020 in preparation for the new academic year, their self-efficacy of using technology to teach online remained high., as well as, being resiliency and adaptable in the face of immediate changes affecting their pre-conceived notions of how a classroom looks and how learning is obtained. To avoid the complete collapse of the education sector during Covid – 19 outbreak, Kwelle et al (2023) wrote that diseases were highly infectious and transmitted through human contact making it invariably incompatible with the physical contact setting of learning and teaching. This incompatibility has brought about a paradigm shift in the traditional practices, processes, and concepts of brick and mortar to the application of information and communication technology in teaching and learning in many nations of the world and Nigeria is not an exception. There is no doubt that the interference of the COVID-19 pandemic has caused many challenges to the job performance of lecturers in Nigerian Universities, affecting their preparedness to deliver effectively in the classroom in the era of socio-political and economic uncertainty.

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## Statement of Problem

The need to assess the level of preparedness among science teachers in universities for effective classroom delivery in an era of socio-political and economic uncertainty is a necessity. The socio-political and economic conditions influence the teaching environment and pose challenge that can impact the effectiveness of science education. Understanding the preparedness of science teachers in navigating these uncertainties is crucial for maintaining quality education and promoting student learning outcomes. Political and Economic uncertainties have restricted funding for professional development programs for science teachers. This limitation can hinder their ability to stay updated with new teaching methodologies, advances in science, and instructional technologies, reducing their effectiveness in the classroom. It affects the availability of resources for Science Education, such as laboratory equipment, materials, and technology. Inadequate resources which can limit teachers' ability to provide hands-on experiences and practical applications of scientific concepts, impeding student engagement and understanding. Socio-political and economic uncertainties can create stress and anxiety among students, affecting their motivation and psychological well-being. The need for Science teachers to be prepared to address the challenges and provide supportive learning environments to maintain student engagement and academic performance. Socio-political and economic uncertainties may lead to fluctuations in employment opportunities or reductions in funding for faculty positions. This uncertainty can result in the loss of experienced science teachers to area of greener pastures as some are already migrating to other nations, leading to a potential shortage of qualified educators in universities. Hence, the researchers seeks to determine amid this uncertainties how prepared are science teachers for effective classroom delivery.

## Purpose of the Study

The aim of this study is to investigate science teachers` level of preparedness for effective classroom delivery in the era of socio-political and economic uncertainty. Specifically this study investigated the

1. extent of science teachers` preparedness for effective classroom delivery in the era of socio - political and economic uncertainty.

2. challenges that science teachers face as they strive to adapt to the evolving realities of today`s classroom in the era of socio - political and economic uncertainty.

## Research Questions

1. To what extent are science teachers` prepared to deliver effectively in the classroom in the era of socio - political and economic uncertainty?

2. What are the challenges posed to science teachers as they strive to adapt to evolving realities of today`s classroom in the era of socio - political and economic uncertainty?

## Method

The study used a descriptive survey research design. This method is employed because the goal of the study is to collect data systematically to describe the population. The study was carried out in Nnamdi Azikiwe University Awka, Anambra State, Nigeria. The population of the study comprised of all academic staff from Science Education Department, Mathematics, Computer Science, Technical and Vocational Education and Human Kinetics Departments in Nnamdi Azikiwe University Awka. A simple random sampling technique was used to select 120 academic staff for the study. At the end, 100 copies of the questionnaires were returned out of 120 copies distributed.

A questionnaire titled extent of science teachers' preparedness for effective classroom delivery in the era of socio - political and economic uncertainty (QESTPECDESPEU) questionnaire was developed by the researchers. The questionnaire has items related to the study's stated objectives and research questions. The instrument comprised 16 items with four response options of Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE), with values of 4, 3, 2, and 1respectively was used for research question 1 while four response options of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) with values of 4, 3, 2, and 1 respectively was used for research question 2. The respondents were required to check the box next to the column that most accurately reflected their opinions. With the help of two (2) science educators from the Department of Science Education and one (1) measurement and evaluation lecturer from the Department of Educational Foundations, all from NAU the instrument was validated. To establish the reliability of the instrument, copies of the questionnaire were distributed to 20 lecturers from the Science Education Department of Chukwumeka Odumegwu Ojukwu University, Anambra State. The Cronbach Alpha technique was used to assess the data that was gathered from the administered questionnaire. The instrument's reliability was found to be 0.88, indicating that it is quite reliable. The researchers administered the validated questionnaire to randomly selected 120 respondents from Science Education Department, Mathematics, Computer Science, Technical and Vocational Education and Human Kinetics Departments in NAU. To prevent time wastage, late returns, and inaccurate filling of the surveys, all completed questionnaires were immediately collected from the respondents following completion by the researchers. At the end, 100 copies of the questionnaires were returned and used for analysis. The data collected were analyzed, using mean to answer the research questions and standard deviation to determine the closeness or otherwise of the responses from the mean. A cut of point of 2.50 was used as a basis for decision making meaning that, any mean item with a mean score of 2.50 and above indicated agreement with the statement while any mean score of below 2.50 indicated disagreement.

In making decision, range of values such as follows was used
Response Options for part 1 is;

| Response Options | Range of Values |
|---|---|
| Very High Extent (VHE) | 3.50 – 4.00 |
| High Extent (HE) | 2.50 – 3.49 |
| Low Extent (LE) | 1.50 – 2.49 |
| Very Low Extent (VLE) | 1.00 – 1.49 |

Response Options for part 11 is;

| Response Options | Points |
|---|---|
| Strongly Agree (SA) | 3.50 – 4.00 |
| Agree (A) | 2.50 – 3.49 |
| Disagree (D) | 1.50 – 2.49 |
| Strongly Disagree (SD) | 1.00 – 1.49 |

**Results**

**Research Question 1. To what extent are science teachers` preparedness for effective classroom delivery in the era of socio-political and economic uncertainty?(N = 100)**

| S/N | Items | Mean | SD | Decision |
|---|---|---|---|---|
| **1.** | I received professional development training specifically aimed at equipping me to teach during times of political uncertainty | 2.63 | 0.94 | HE |
| **2.** | I have confident in my ability to navigate teaching challenges during periods of political uncertainty | 3.18 | 0.67 | HE |
| **3.** | I have acquired necessary pedagogical knowledge needed during periods of political uncertainty | 2.80 | 0.80 | HE |
| **4.** | I have acquired necessary digital skills for teaching sciences needed during periods of political uncertainty | 2.89 | 0.69 | HE |
| **5.** | I have access to available teaching materials needed for teaching sciences during periods of political uncertainty | 2.50 | 0.70 | HE |
| **6.** | I incorporate current events related to politics into science instruction | 2.75 | 0.83 | HE |
| **7** | I have modified my teaching materials and activities to accommodate students with limited economic resources | 3.08 | 0.79 | HE |
| **8** | I am able to incorporate discussions on the societal implications of economic uncertainty into my science curriculum | 2.94 | 0.72 | HE |
| **9** | I have ability to provide equitable educational opportunities for students regardless of their economic backgrounds | 3.22 | 0.85 | HE |
| | **Grand Mean** | **3.21** | | |

From Table 1, the responses of the science teachers (science lecturers) in NAU have shown that preparedness of science teachers (science lecturers) in NAU in the era of socio-political and economic uncertainty were high to an extent. Their responses indicated that they have received professional development training specifically aimed at equipping them to teach, have confident in their ability to navigate teaching challenges, acquired necessary pedagogical knowledge needed, acquired necessary digital skills for teaching sciences needed, have access to available teaching materials needed for teaching sciences, incorporate current events related to politics into science instruction, have modified their teaching materials and activities to accommodate students with limited economic resources, able to incorporate discussions on the societal implications of economic uncertainty into their science curriculum, ability to provide equitable educational opportunities for students regardless of their economic backgrounds, with each mean rating from 2.50 to 3.22 and overall mean of 3.21 which are above the mean scores benchmark which was set for this study at 2.50. This study demonstrated that preparedness of science teachers (science lecturers) in NAU in the era of socio-political and economic uncertainty were high to an extent

**Research Questions 2.What are the challenges posed to science teachers as they strive to adapt to evolving realities of today`s classroom in the era of political and economic uncertainty? (N = 100)**

| S/N | Items | Mean | SD | Decision |
|---|---|---|---|---|
| 1. | Political and economic uncertainties affect the availability of resources and materials necessary for effective science instruction | 3.20 | 0.70 | Agreed |
| 2. | I have experienced budget cuts or resource limitations that have impacted my ability to teach science effectively in the current political and economic climate | 3.45 | 0.56 | Agreed |
| 3. | Political and economic uncertainties have affected my ability to plan and implement hands-on experiments and interactive activities in the science classroom adversely. | 3.44 | 0.61 | Agreed |
| 4. | I have faced many challenges in addressing controversial sensitive scientific topics due to the current political and economic climate | 3.25 | 0.70 | Agreed |
| 5. | I am adequately supported by my school administration in terms of providing necessary resources and guidance for adapting to the changing realities of the classroom amidst political and economic uncertainty | 2.65 | 1.07 | Agreed |
| 6. | I have received professional development training opportunities specifically focused on addressing the challenges posed by the current political and economic uncertainties in the science classroom | 2.65 | 1.03 | Agreed |
| 7. | Terrorism is one of the big challenges facing teaching of science in political and economic uncertainties in the science classroom | 2.55 | 0.67 | Agreed |
| | **Grand Mean** | **2.65** | | |

From Table 2, the responses of the science teachers (science lecturers) in NAU have shown that the challenges posed to science teachers as they strive to adapt to evolving realities of today`s classroom in the era of socio-political and economic uncertainty included, socio-political and economic uncertainties affect the availability of resources and materials necessary for effective science instruction, they have experienced budget cuts or resource limitations that have impacted my ability to teach science effectively in the current political and economic climate, socio-

political and economic uncertainties have affected their ability to plan and implement hands-on experiments and interactive activities in the science classroom adversely, have faced many challenges in addressing controversial sensitive scientific topics due to the current socio-political and economic climate, they are adequately supported by their school administration in terms of providing necessary resources and guidance for adapting to the changing realities of the classroom amidst socio-political and economic uncertainty, have received professional development training opportunities specifically focused on addressing the challenges posed by the current socio-political and economic uncertainties in the science classroom, terrorism is one of the big challenges facing teaching of science in socio-political and economic uncertainties in the science classrooms, with each mean rating from 2.55 to 3.45 and overall mean of 2.65 which are above the mean scores benchmark which was set for this study at 2.50. This study revealed that, there were challenges posed to science teachers as they strive to adapt to evolving realities of today`s classroom in the era of socio-political and economic uncertainty.

**Discussion of Findings**

Findings from the results (Table 1) revealed that, the responses of the science teachers (science lecturers) in NAU have showed that preparedness of science teachers (science lecturers) in NAU in the era of socio-political and economic uncertainty were high to an extent. This finding is in consonant with findings of Webb et al. (2021) on teachers' preparedness and professional learning about using educational technologies during the COVID-19 pandemic revealed that educators continued to focus on professional development during the summer of 2020 in preparation for the new academic year

The present study is in discrepancy with the work of Etiubo et al (2018) on Socio-Economic Empowerment of Senior Secondary Science Students in Nigeria and STEM Teachers' Preparedness; and the result showed that STEM teachers were not adequately prepared, lacked competencies and skills for socioeconomic empowerment of their students. The difference in result might be attributed to or as a result of difference in area of study, population of the study and time.

The results (Table 2) indicated that from the responses from the respondents, study agreed that there were challenges posed to science teachers as they strive to adapt to evolving realities of today`s classroom in the era of socio-political and economic uncertainty. This result is in agreement with the work of Webb et al (2021) on teachers' preparedness and professional learning about using educational technologies during the COVID-19 pandemic demonstrated the resiliency and adaptability of K-12 classroom teachers in the face of immediate changes affecting their pre-conceived notions of how a classroom looks and how learning is obtained which means that there were challenges posed to teachers as they strive to adapt to evolving realities of classroom during the COVID-19 pandemic. The present study is inconsistent with the result of Sayed, Singh, Bulgrin, Henry, Williams, Metcalfe, Pesambili, and Mindano (2021), from their workon Teacher support, preparedness and resilience during times of crises and uncertainty: COVID-19 and education, which demonstrate that teachers have been absent from policymaking processes and have not been adequately provided with the necessary professional development (PD) and psychosocial support to navigate the uncertainties and

pedagogical requirements imposed by the COVID-19 pandemic, which is a social-political issue that led to economic uncertainty.

## Conclusion

The study concludes that preparedness of science teachers (lecturers) in NAU in the era of socio-political and economic uncertainty was high to an extent. Also, there were challenges posed to science teachers as they strive to adapt to evolving realities of today's classroom. In light of this, it could be deduced that preparedness by science teachers is essential for effective classroom delivery. This means that when a science teacher keeps preparing his/herself in such an era of socio-political and economic uncertainty irrespective of the challenges encountered will bring about an effective classroom delivery.

## Recommendations

Based on the findings of the study, it is recommended that science teachers (lecturers) continually undergo professional development trainings irrespective of socio-political and economic uncertainty.

Adequate support should be given to science teachers by the school management and the government at large, this supports will enhance efficiency in classroom delivery.

The government should equip security agencies to curb insecurity and terrorism, hence encouraging science teachers to carry out their assignment without fear.

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