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RELATIONSHIP BETWEEN PRE-SERVICE TEACHERS' DIGITAL SELF-EFFICACY AND THEIR USE OF TECHNOLOGY FOR CURRICULUM IMPLEMENTATION IN SECONDARY SCHOOLS

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ABSTRACT

The purpose of the study was to ascertain relationship between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South-East, Nigeria. Correlation research design was used for the study. The population of the study comprised 3, 260 regular third year students of Faculties of Education in the four Federal Universities who are undergoing their teaching practice in South-East Zone for the 2023/24 academic session. The sample size for this study comprised 400 third year regular undergraduate students (2023/2024 session) drawn via simple random sampling and purposive sampling techniques. Pre-Service Teachers' Extent of Use of Technology for Curriculum Implementation Questionnaire (PTUTCIQ) and Pre-Service Teachers' Digital Self-Efficacy Questionnaire (PTDSEQ) were used for data collection. PTUTCIQ and PTDSEQ were face-validated by three experts. The reliability of PTUTCIQ and PTDSEQ was ascertained using Cronbach Alpha method to yield scores of 0.74 and 0.78. Data were analyzed using Pearson Product Moment Correlation coefficient. The findings of the study revealed that a high positive and significant relationship existed between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South East Nigeria. Based on the findings of the study, it was recommended among others that pre-service teachers should ensure that they continually develop the requisite digital self-efficacy to enhance their use of technology in curriculum implementation.

Keywords*:* Pre-Service; Digital Self-Efficacy; Use of Technology; Curriculum Implementation

Introduction

Technology has made much inroads into the educational system; secondary education inclusive. Expectedly, experts in the secondary educational system consider the use of technology in line with global trend a matter of necessity. Accordingly, the use technology provides an opportunity for the integration of the innovative milestones of online learning to promote classroom engagement and involvement (Islam, Sarker & Islam 2022). Thus, the impact of technology in curriculum implementation is far-reaching. Technology enhances education with respect to the provision of computers, mobile devices, and the Internet (Lawrence & Tar, 2018). The advancement in technology has re-inforced the need for pre-service teachers to prioritize it for use in curriculum implementation especially for modern day students who have become digital natives. The use of technology for curriculum implementation promotes individualized learning and makes learning stimulating, engaging and interactive (Caner & Aydin, 2021). Similarly, the use of

technology for curriculum implementation by the pre-service teacher makes the teaching-learning process a more engaging one for the students. These technologies possess the potential to provide students with vast pieces of information for easy access in a non-sequential format. Umana (2018) noted that these technologies include computers, internet, electronic mail, video conferencing, printing technology and online public access catalogue. They promote effectiveness in the curriculum implementation process.

Self-efficacy is needed for using technology among pre-service teachers for effectiveness in curriculum implementation. Thus, digital self-efficacy beliefs affect human functioning in various ways viz: cognitive processes, motivational processes, affective processes, and selection processes (McMahon, 2021). McMahon added that cognitive processes are impacted by self-efficacy beliefs in that the ability to accurately perceive one's abilities will directly impact the type of goals or challenges that an individual is willing to pursue. Similarly, the lower a person's self-efficacy, the higher the tendency to avoid tasks (Williams-Buffonge, 2021). Pre-service teachers who have a higher digital self-efficacy level may seem to be more persistent and less anxious when using digital resources for curriculum implementation.

In the South-East, Nigeria, being one of the geopolitical zones in Nigeria that consists mainly of the Igbo extraction, the researcher observed that during the teaching practice exercise of pre-service teachers in some public secondary schools, technology was still being used at its lowest ebb by pre-service teachers. This is despite its relevance for curriculum implementation for modern day students who are digital natives. Could it be that pre-service teachers lack the necessary self-efficacy to adopt technology for effectiveness in curriculum implementation? It is in view of the foregoing that the researcher sought to ascertain the relationship between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in secondary schools in South-East, Nigeria.

Purpose of the Study

Specifically, the study sought to determine:

1. The relationship between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South-East, Nigeria.

Hypothesis

1. There is no significant relationship between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South-East, Nigeria.

Literature Review

Pre-service teachers' self-efficacy is a major contributor to their use of technology for curriculum implementation. For instance, pre-service teachers with high self-efficacy are bound to have lower perceived work stress and strain levels and reported less physiologic stress response. In contrast, a low sense of pre-service teachers' self-efficacy is associated with laziness, depression, anxiety, and helplessness in their use of technology for curriculum implementation. Taştan, Davoudi, Masalimova and Bersanov (2017) stated that self-efficacy is vital in psychological and physical

health outcomes. Being engaged in online teaching during their field experience, pre-service teachers' self-efficacy increased when they experimented with technological tools to design student-centered activities and practices (Cooper et al., 2020; Hampton *et al*., 2020). Pre-service teachers who have a strong sense of self-efficacy participate more readily in tasks and work more diligently when encountering stressful situations (Bozbayindir and Alev, 2019). Bozbayindir and Alev added that since a teacher's self-efficacy influences their actions and behaviors more than their skills and capabilities, it is crucial to foster and develop self-efficacy in pre-service teachers for use of technology in curriculum implementation. Bozbayindir and Alev further stated that if pre-service teachers can attest to how the use of technology promotes students' success and engage, then their confidence and self-efficacy will increase. It is at this point that their perceived sense of efficacy will influence decisions either negatively or positively. More so, the outcome of the performance will be displayed based on the decision made by the teacher. Yerdelen *et al*. (2019) acknowledged that a pre-service teacher's belief is more influential than the teacher's knowledge. Although technology benefits have been overwhelming in other fields, the use of digital resources still has not displayed a tangible impact in the way it should in education (Farjon, Smith & Voogt, 2019).

Much as pre-service teachers are already aware of how the use of technology has been impacting curriculum implementation and have agreed to the empowerment that it provides to both pre-service teachers and their students alike. Teachers can increase their self-efficacy with the use of technology resources by having positive experiences with computers and classroom technologies. Much as teachers accept the value of ICT integration, it may become difficult for them to manipulate ICT into the subject matter (Durff & Carter, 2019). Durff and Carter added that many pre-service and in-service college lecturers lack the ability to use technology to support educational learning because they may not be technologically savvy. Pre-service teachers may further have difficulties following the new technological trends such as blogs, wikis, podcasting, and animation creation. Pre-service teachers today appear to be using technology to promote online communities and allow students to interact with one another and collaborate with others which is a key skill needed later on in the course of curriculum implementation. According to Smith (2020), pre-service teachers are using educational technologies to diversify learning. This diversity will help students be more engaged with subject content, reinforcement of concepts while assisting in problem-based learning through the use of different modalities. Smith added that pre-service teachers now have the option for students' learning to be synchronous and asynchronous. These methods help facilitate learning in various ways, providing a partnership between pre-service teachers, students and knowledge. Pre-service teachers' self-efficacy in the use of technology can promote curriculum implementation.

As pre-service teachers realize that the use of technology has become an integral part of their curriculum implementation process, the teacher's self-efficacy has prevented them from implementing these educational technologies successfully. O'Neil and Krause (2019) shared that teachers' inexperience with technological skills may cause this. O'Neil and Krause added that it is essential for teachers to have technological skills when attempting adoption. O'Neil and Krause further stated that these include both based knowledge, instructional knowledge with digital

resources, and the ability to shadow faculty that are proficient with technology. Karsh (2018) concurred with O'Neil and Krause and expresses that one of the main problems that teachers face during curriculum implementation is their lack of ability to adopt the technology (Durff and Carter, 2019). They further expounded that teachers have even had technology anxiety due to lack of competence and inadequacy with technology training (Karsh, 2018). This impacts their self-efficacy. A pre-service teacher's beliefs can determine whether or not they will adopt the technology for curriculum implementation. Jokisch *et al*. (2020) demonstrated that self-efficacy is influential on the teacher's action to use educational technology tools. Jokisch *et al*. concluded by saying that today's current generation, specifically looking at younger teachers, may be experiencing difficulties with technology adoption. This may be occurring because they have low self-efficacy when attempting to facilitate learning through technology adoption. These teachers do not have the requisite training or any substantial learning to technology within their formative years. However, teachers who successfully used technology for curriculum implementation and adopted it more efficiently within their instructional practice are likely to have a higher self-efficacy level than those that are still having a novel experience in the use of technology for curriculum implementation.

There are empirical studies on self-efficacy and use of technologies among pre-service teachers. For instance, Falade and Aladesusi (2023) examined the self-efficacy in the use of open-source software for instruction among undergraduate pre-service teachers in Lagos State. The findings indicated that undergraduates have low self-efficacy in the use of open-source software for instruction. Similarly, Oyedapo, Shabi, and Awominure (2019) investigated the impact of self-efficacy on undergraduates' use of e-resources at three Nigerian institutions. The study's findings demonstrated that self-efficacy and the use of e-resources have a statistically significant link. Students with higher levels of self-efficacy are expected to use e-resources more effectively than students with lower levels of self-efficacy. Again, Oyewole and Oladepo (2017) investigated the impact of information demands and computer self-efficacy on undergraduate students' use of electronic reference services at a Nigerian university. The study's findings demonstrated that the majority of undergraduates had a substantial positive association between their computer self-efficacy and their use of an electronic reference service. The more an undergraduate's computer self-efficacy, the more he or she will use an electronic reference service. Going further, Opeyemi, Oluwaseyi and Marcus (2022) examined the information literacy skills, self-efficacy and use of information resources by secondary school teachers in selected secondary schools in Ijebu ode local government, Ogun state. It was revealed that there was low level of self-efficacy among teachers in selected secondary schools. More so, there was no significant relationship between self-efficacy and use of information resources among teachers.

Caner and Aydin (2021) explored the self-efficacy beliefs of pre-service teachers on technology integration in four different teacher education programmes of a state university in Turkey. The findings of the study revealed that pre-service teachers had high self-efficacy in technology integration in general. Additionally, it is found that while technology integration self-efficacy of pre-service teachers showed a significant difference in line with some majors and grade level variables, there found no difference in terms of the gender variable. In similar vein, Baroudi,

Hojeij, Meda and Lottin (2022) examined the predictors for enhancing pre-service teachers' self-efficacy and satisfaction in online teaching and to investigate the association of their self-efficacy beliefs and their satisfaction with online teaching in the United Arab Emirates. The findings of the study revealed that participants reported a high level of self-efficacy and satisfaction in online teaching mainly regarding their abilities to engage students in online classrooms and use of computers/educational technology. Students' technological knowledge was strongly correlated with participants' self-efficacy beliefs. Again, Kent and Giles (2017) investigated elementary pre-service teachers' self-efficacy beliefs regarding instructional technology. The findings of the study revealed that 91% of participants incorporated technology into lessons with 95% of participants reporting some confidence in their ability to select and utilize technology in teaching. Additionally, 90% of participants felt they could integrate technology across the curriculum. Furthermore, Olson and Appunn (2017) looked at the relationship between technology adoption and self-efficacy. The findings of the study revealed that a positive relationship existed between lecturers' technology adoption and their self-efficacy. A cursory look at the foregoing studies reveals that although self-efficacy and teachers' use of technology have featured in extensive researches, none of researches dwelt on use of technology for curriculum implementation. Again, none of the researches have been undertaken specifically in South-East, Nigeria; hence the need for the current study.

Research Method

Research Design. Correlation research design was utilized for the study as it seeks to ascertain relationship between variables (Nworgu, 2015). Correlation design is adjudged necessary for this study because it enabled the researcher ascertain the nature of relationship existing between two variables of pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation.

Procedure. The study's population was made up of 3, 260 regular third year students of Faculties of Education in the four Federal Universities who are undergoing their teaching practice (Michael Okpara University of Agriculture, Umudike, Alex Ekwueme University, Ndufu-Alike Ikwo, Ebonyi State, Nnamdi Azikiwe University, Awka, Anambra State and University of Nigeria, Nsukka, Enugu State) in South-East Zone for the 2023/24 academic session. The subjects for the study comprised 400 third year regular undergraduate students (2023/2024 session) of Faculties of Education in Anambra and Enugu States. Simple random sampling and purposive sampling techniques were used to compose the sample for the study. Simple random sampling technique was employed to draw two Federal Universities out of the four Federal Universities that have Faculties of Education in South-East, Nigeria. Thereafter, 20 public secondary schools in each of Anambra and Enugu States where third year regular undergraduate students were undergoing their teaching practice were drawn. Finally, purposive sampling technique was employed to draw all the 10 third year regular undergraduate students posted for teaching practice in the 40 schools to give rise to the sample size. Data collection was done using Pre-Service Teachers' Extent of Use of Technology for Curriculum Implementation Questionnaire (PTUTCIQ) and Pre-Service Teachers' Digital Self-Efficacy Questionnaire (PTDSEQ). PTUTCIQ is a 23-item questionnaire constructed by the researcher from literature in such a way that the respondents responded by opting for one of the four response categories viz: Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). PTDSEQ was adapted from Chibisa, Tshabalala

and Maphalala's (2021) Pre-Service Teachers' Computer Self-Efficacy and the Use of Computers (PSTCSEUC) which has eight constructs of demographic influence (DI), social influence (SI), basic computer skills (CS), access to computers (AC), perceived ease of use (PEOU), perceived usefulness (PU), computer self-efficacy (CSE), and actual computer use (AU). PSTCSEUC is a 60-item scale that was constructed in such a manner that the respondents responded by opting for one of four response categories viz: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree. PTUTCIQ and PSTCSEUC were subjected to face validation by three experts in Faculty of Education, Nnamdi Azikiwe University, Awka. The reliabilities of PTUTCIQ and PSTCSEUC were ascertained using Cronbach alpha method. This was done by administering the PTUTCIQ and PSTCSEUC to 20 pre-service teachers in the course of teaching practice in Delta State which is outside the study area. The internal consistency of the items in PTUTCIQ and PSTCSEUC were determined using Cronbach statistics. The alpha coefficients obtained were 0.74 and 0.78. These values were adjudged adequate and the instrument deemed reliable since they fall in line with the recommendation of Shrestha (2021) that the adequate threshold value for Cronbach alpha should be >0.70.

Data Analysis. Data were analyzed with the use of Pearson Product Moment Correlation by finding the relationship between each pair of variables. In view of the suggestions of Nwana (2007), correlation coefficients, r will be interpreted thus:

0.8 – 1.0 = Very high relationship
0.6 – 0.8 = High relationship
0.4– 0.6 = Moderate relationship
0.2 – 0.4 = Low relationship
0.0 – 0.2 = Very low relationship.

In finding the significance of the hypotheses, p-value was used. Where the calculated p-value is less than the stipulated level of significance (0.05), the null hypothesis was rejected. Whereas the null hypothesis was accepted where the calculated p-value is greater than or equal to the stipulated level of significance (0.05). All analyses were done both manually and with the aid of the Statistical Package for Social Sciences (SPSS) version 22.

Presentation of Results

Table 1: Pearson r on Relationship between Pre-Service Teachers' Digital Self-Efficacy and their Use of Technology for Curriculum Implementation

Source of Variation	N	R	p-value	Remark
Digital Self-Efficacy Use of Technology for Curriculum Implementation	400	0.604	0.01	High Positive Relationship

Data in Table 1 show that there is a high positive relationship between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South-East, Nigeria. This is evident by the size of Pearson's Correlation Coefficient r, which is 0.604. In addition, the

analysis shows that there is a significant relationship between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South-East, Nigeria. The calculated r (0.604) has *p*-value <0.05. The null hypothesis was therefore rejected.

Discussion

The finding of this study is that a high positive relationship existed between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South-East, Nigeria. This shows that an the more self-efficacious pre-service teachers are, the more likely they will use technology for curriculum implementation and vice versa. This may not be separated from the fact that a good number of pre-service teachers are modern day students who are digital natives, to whom, the use of technology has become an extension of their fingers. As such, it is not unexpected for them to deploy technology in matters of lesson preparation, lesson delivery, evaluation of students as well as administration of feedback. The finding of the current study is in line with that of Oyewole and Oladepo (2017) that the majority of undergraduates had a substantial positive association between their computer self-efficacy and their use of an electronic reference service. Thus, the more an undergraduate's computer self-efficacy, the more he or she will use an electronic reference service. Similarly, Olson and Appunn (2017) found a positive relationship between lecturers' technology adoption and their self-efficacy. This is a pointer to the fact that technology adoption among educators can hardly be separated from their digital self-efficacy. The finding of the present study further agrees with that of Kent and Giles (2017) that 91% of teachers incorporated technology into lessons with 95% of participants reporting some confidence in their ability to select and utilize technology in teaching. In other words, majority of teachers have favourable disposition towards the use of technology for curriculum implementation. In a similar vein, Baroudi, Hojeij, Meda and Lottin (2022) found a high level of self-efficacy and satisfaction in online teaching mainly regarding their abilities to engage students in online classrooms and use of computers/educational technology. This is a depiction of the fact that a self-efficacious teacher has a sense of satisfaction in the utilization of technology for curriculum implementation. Further collaboration of the finding of the current study, Caner and Aydin (2021) observed that pre-service teachers had high self-efficacy in technology integration. The finding of the current study is however contradicted by that of Falade and Aladesusi (2023) who found that pre-service teachers had low self-efficacy in the use of open-source software for instruction. This apparent contradiction may be linked to disparity in sample characteristics in the different areas of study.

The finding of the study further showed that a positive and significant relationship existed between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation. In other words, self-efficacy has a strong impact on pre-service teachers' tendency to use technology for curriculum implementation. Consistent with the finding of this study, Oyedapo, Shabi, and Awominure (2019) found a significant link existed between self-efficacy and their use of e-resources. Students with higher levels of self-efficacy are expected to use e-resources more effectively than students with lower levels of self-efficacy. In contrast, Opeyemi, Oluwaseyi and Marcus (2022) found that no significant relationship existed between self-efficacy and use of information resources among teachers. The contrast could be linked to the peculiarity of the subjects in the disparate areas of study as well as the time gap between the studies.

Conclusion

Apparently, digital self-efficacy has a high tendency of predisposing pre-service teachers to the use of technology for curriculum implementation inclusive. Furthermore, pre-service teachers as digital natives are bound to be digitally self-efficacious in the use of technology. Based on the findings of the study, it was concluded that a positive relationship existed between pre-service teachers' digital self-efficacy and their use of technology for curriculum implementation in South-East, Nigeria.

Recommendations

In line with the findings, the following recommendations were made:

1. Pre-service teachers should ensure that they continually develop the requisite digital self-efficacy to enhance their use of technology in curriculum implementation.
2. School administrators should ensure that pre-service teachers are digitally self-efficacious to use technology in curriculum implementation.

REFERENCES

Baroudi, S., Hojeij, Z., Meda, L. & Lottin, J. (2022) *Examining elementary pre-service teachers' self-efficacy and satisfaction in online teaching during virtual field experience, Cogent Education*, 9:1, 2133497, DOI: 10.1080/2331186X.2022.2133497**.** https://doi.org/10.1080/2331186X.2022.2133497.

Bozbayindir, F., and Alev, S. (2019). An analysis of the relationship between the general self-efficacy perceptions of teachers and their political skill levels. *International Journal of Progressive Education, 15*(2), 65–77. http://files.eric.ed.gov/fulltext/EJ1219211.pdf.

Caner, M. & Aydin, S. (2021). Self-efficacy beliefs of pre-service teachers on technology integration. *Turkish Online Journal of Distance Education, 22*(3), 79-94.

Chibisa, A., Tshabalala, M.G. & Maphalala, M.C. (2021). The effects of pre-service teachers' computer self-efficacy on their use of computers. *International Journal of Learning, Teaching and Educational Research, 20*(11), 325-345. https://doi.org/10.26803/ijlter.20.11.18.

Cooper, R., Warren, L., Hogan-Chapman, A. & Mills, L. (2020). Pre-service teachers and their self-efficacy toward online teaching. *SRATE Journal, 29*(2), 292-297.

Dai, W. (2023). An empirical study on English pre-service teachers' digital competence regarding ICT self-efficacy, collegial collaboration and infrastructural support. *Heliyon, 9*(1), e19538.

Durff, L. & Carter, M. (2019). Overcoming second-order barriers to technology integration in k–5 schools. *Journal of Educational Research and Practice, 9*(1), 17.

Ezeaku S. N. (2019). Creative Quality of Educational Managers in functional Education as a panacea to Achieving Sustainable Development in Anambra State, Nigeria. *Journal of Education, Society and Behavioral Science* Vol. 31 (issued) (Pg. 1-9).

Ezeaku, S. N. (2019). Dividends of Security in Managing Education for the Attainment of Sustainable Development Goals in Anambra State. *International Journal of Education, Culture and Society, 4*(4), 60-64.

Ezeaku, S. N. Appraisal of Strategies Towards Upgrading Staff Personnel Management in Public Secondary Schools: Implications for Policy Makers in Anambra State, Nigeria.

Falade A. and Aladesusi, G.A. (2023). Pre-service teachers' self-efficacy in the use of open-source software for learning in Lagos State. *Iranian Distance Education Journal*, *4*(1), 154-167.

Farjon, D., Smits, A. & Voogt, J. (2019). Technology integration of pre-service teachers explained by attitudes and beliefs, competency, access, and experience. *Computers & Education*, *130*(1), 81-93.

Hampton, D., Culp-Roche, A., Hensley, A., Wilson, J., Otts, J. A., Thaxton-Wiggins, A., Fruh, S. & Moser, D. K. (2020). Self-efficacy and satisfaction with teaching in online courses. *Nurse Educator*, *45*(6), 302–306. https://doi.org/10.1097/NNE. 0000000000000805.

Islam, M. K., Sarker, M. F. H. & Islam, M. S. (2022). Promoting student-centered blended learning in higher education: A model. *E-Learning and Digital Media*, *19*(1), 36-54.

Jokisch, M. R., Schmidt, L. I., Doh, M., Marquard, M. & Wahl, H.-W. (2020). The role of internet self-efficacy, innovativeness and technology avoidance in breadth of internet use: Comparing older technology experts and non-experts. *Computers in Human Behavior*, *111* (1), Article 106408. https://doi.org/10.1016/j.chb.2020.106408.

Karsh, S. M. A. (2018). New technology adoption by business faculty in teaching: Analyzing faculty technology adoption patterns. *Education Journal*, *7*(1), 5-15.

Kent, A.M. & Giles, R.M. (2017). Elementary pre-service teachers' self-efficacy beliefs regarding instructional technology. *SPRATE Winter Journal*, *26*(1), 9-20.

Lawrence, J.E. & Tar, U.A. (2018). Factors that influence teachers' adoption and integration of ICT in teaching/learning process. *Educational Media International*, *55*(1), 79-105. https://doi.org/10.1080/09523987.2018.1439712.

McMahon, E. (2021). *Designing effective online courses: Exploring the relationships amongst teaching self-efficacy, professional development, faculty experience, and implementation of effective online course design practices*. Dissertations, Theses, and Projects. 477. https://red.mnstate.edu/thesis/477.

Nwana, O.C. (2007). *Textbook on educational measurement and evaluation*. Owerri: Boma Way Pub.

Nwankwo, I. N. (2014). Students' Participation in Decision Making and Its Implications for Educational Leadership. *Journal of Emerging Trends in Educational Research and Policy Studies* (JETERAPS) 5(3):362-367.

Nwankwo, I. N. (2024). Management Of Science and Technology Education for National Development: A Case of Secondary Schools in South East of Nigeria. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, *12*(2), 14-29.

Nworgu, B.G. (2015). *Educational research*: *Basic issues and methodology*. Nsukka: University Trust Publishers.

O'Neil, K., & Krause, J. M. (2019). Physical education teacher education faculty self-efficacy toward educational technology. *The Physical Educator, 76*(5), 1287–1305. https://doi.org/10.18666/TPE-2019-V76-I5-9107 135.

Ojimba, C. C. (2024). Effect Of National Industrial Court and Industrial Arbitration Panel in Resolution of Corporate Dispute. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, *13*(2).

Okaforcha, C. C. and Okeke I. N (2018). Extent of Principals fund management practices for effective implementation of entrepreneurial studies in secondary schools in Awka Education Zone. *Journal of Emerging Trends in Educational Research and Polity Study (JETERAPS) vol. 10 (2).*

Okaforcha, C. C. and Okeke, N. I. (2020) School Leadership as a correlation of teachers' job satisfaction in public secondary schools in Awka Education zone of Anambra State. *Unizik Journal of Educational Research and Policy Studies (UNIJERPS)* January- June 2020 Vol. 1.NO. 1 Pg. 1-7.

Okeke Ifediorah, N. and Okaforcha, C. C. (2018). Extent of principals' classroom instructional supervision for effective teaching in secondary schools in Anambra State. *Journal of Emerging Trends in Educational Research and polity study (JETERAPS)* vol. 10 (2).

Okoye, A. C. (2016). Professional competencies required of secretaries in modern automated offices in tertiary institutions in Anambra State of Nigeria. Online Journal of Arts, Management and Social Sciences (OJAMSS), 1(1), 89-97. http://www.gojamss.net/journal/index.php/OJAMSS/article/view/89

Okoye, A. C. (2017). Strategies considered effective by business educators for teaching entrepreneurship education in tertiary institutions in Anambra State. International Journal of Social Sciences and Humanities Reviews, 7(1), 65 – 71

Okoye, A. C. (2021). Strategies for developing sustainable business education for economic development. *International Journal of Management Studies and Social Science Research, 3*(2), 76-81.

Olson, J. D. and Appunn, F. D. (2017). The technology adoption process model and self-efficacy of distance education students. *Quarterly Review of Distance Education, 18*(2), 57–75, 101–102.

Opeyemi, A. E., Oluwaseyi, A.E. and Marcus, A. O. (2022). Information literacy skills, teachers' self-efficacy and use of information resources by secondary school teachers in selected secondary schools in Ijebu Ode Local Government, Ogun State. *Library Philosophy and Practice (e-journal)*. 7001.

Oyedapo, R.O. Shabi, I.N. and Awominure, A.J. (2019). The impact of self-efficacy on undergraduates' use of e-resources at three Nigerian institutions. *International Journal of Library Science, 8*(1), 1-6.

Oyewole, O., and Oladepo, T. J. (2017). Information needs and computer self- efficacy as factors influencing use of electronic reference services by undergraduates in a Nigerian university. *Library Philosophy & Practice, 1*(1).

Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics, 9*(1), 4-11.

Smith, M. (2020). Integrating technology in contemporary legal education. *The Law Teacher, 54*(2), 209–221. https://doi.org/10.1080/03069400.2019.1643647.

Taştan, S. B., Davoudi, S. M., Masalimova, A. R., & Bersanov, A. S. (2017). The impacts of teacher's efficacy and motivation on student's academic achievement in science education among secondary and high school students. *EURASIA Journal of Mathematics, Science and Technology Education, 1*(1), 84-90.

Umana, K. (2018). *ICT resources for sustainable development in Nigeria*. https://researchcyber.com/icr.

Williams-Buffonge, N.G. (2021). *Caribbean lecturers' self-efficacy and their perceived barriers to technology adoption*. https://scholarworks.waldenu.edu/dissertations.

Yerdelen, S., Osmanoglu, A. & Tas, Y. (2019). The influence of a teaching practice course with video-case enriched microteaching on prospective teachers' self-efficacy for teaching. *International Journal of Research in Education and Science*, *5*(2), 560–573. London http://files.eric.ed.gov/fulltext/EJ1215583.pdf.