



## The teaching profession in the 21<sup>st</sup> century, demands and prospects

Ijeoma Regina Ernest-Ehibudu<sup>1</sup>, Ehibudu Margaret Ugochi<sup>2</sup>

<sup>1</sup> Department of Edu. Psychology, Guidance and Counselling, Faculty of Education University of Port Harcourt  
Port Harcourt, Nigeria

<sup>2</sup> Department of Curriculum Studies and Educational Technology, Faculty of Education, University of Port Harcourt, Port Harcourt, Nigeria

### Abstract

The teaching profession has faced a lot of challenges and members of the society are beginning to question the professionalism in teaching. This doubt as to whether teaching is a professional career and if teachers are professionals could be attributed to wrong persons or individuals becoming teachers or getting into the teaching profession with wrong motives. This is the case when individuals get into the teaching profession as a result of lack of employment or for want of anything legitimate to do in order to earn a living. Some of the present-day learners who are the future generation may not want anything to do with the teaching profession. They view teaching as a not-so-attractive field of endeavor, with low pay and unsatisfactory work conditions. Some are even teaching without the necessary teaching qualifications while hoping for things to turn out good. It is no longer business as usual in the sense that the 21<sup>st</sup> century has placed lots of demands on teachers and the teaching profession; more so in this era of social distancing and uncertainties occasioned by the pandemic, that blended learning, virtual/online learning has become imperative.

**Keywords:** professionalism, teaching, innovation, creativity

### Introduction

Teaching is the occupation and profession of those that give instruction in different and various levels of education. It can also be seen as ideas or principles taught by an authority or a professional. These authorities or professionals are especially known as teachers. Strauss (2017) opined that teachers qualify as authorities/professionals because they undergo some of the most rigorous preparation practices; express strong collective professional judgment; they also know there is more to teaching; have a collective vision for their profession; support students academically, socially and emotionally, teach in transformative ways that empower all students to learn at high levels regardless of ability, status, socioeconomic status, or any other categorical variable and regularly adapt.

Teachers are the pioneers in solving the problems of illiteracy in the society. When one falls sick, a doctor is met, when one needs legal counsel you a lawyer is sought for, to plan, design and oversee the construction of buildings one needs the services of an architect, to solve the issues of car break down, one calls a mechanic. The list is inexhaustible, yet the doctor, lawyer, architect, mechanic, etc. were all tutored by the teacher. Therefore, when one needs to be educated and break out of the holds of mediocrity and illiteracy, call the teacher.

Teaching is not an easy task. A good teacher takes learners from where they are, stretches their mind, critically empowers them, creatively motivates them and innovatively leads them to where they desire to be in order to become an authority in their field and a force to reckon with globally. In order to always stay professionally-relevant in the business of education, teachers need to align themselves with the demands of the 21<sup>st</sup> century especially in this

pandemic and crisis period that creativity and innovation is no longer a theoretical issue but practical and evidence-based.

The 21<sup>st</sup> century has placed lots of demands on teaching professionals. It requires that teachers become progressive in their discipline and align with the creative and innovative ways of teaching and learning. Learning is unending. As one in the forefront of learning, learning is a continuous process for the teacher. The teacher is said to be a learner for life. Once a teacher stops being a learner, the education process becomes ineffective and moribund. To be effective educators, teachers must learn from and with others in their field to utilize the full potentials of technology in education. To be efficient, effective and innovative, the teacher needs to continuously train, retrain, develop and keep developing to meet the demands of the 21<sup>st</sup> century, technological, informative and knowledge-based age.

Teachers need to keep abreast on current trends as well as develop new teaching skills for the purpose of advancement in teaching. Teachers should expand their professional skills, communicate and collaborate with other professionals for better ideas on how to develop professionally. Skills enhancement is imperative in education, especially in this period of pandemic and uncertainty. Teachers should seek professional development as teacher professional development is no longer the issue of in-service workshops/trainings. It has become robust in nature, technologically driven and digitally challenging. If teachers are not professionally developed and digitally-enhanced, there will never be laudable learning outcomes. Teachers should be encouraged to take online courses and acquaint themselves with the relevant learning/grading apps and

technological/educational resources to meet the needs of the 21<sup>st</sup> century learners.

The last few months have witnessed a swift shift to online and virtual learning programs. The pandemic has brought a global change in learning systems, stirring them all to a virtual model and some sort of blended learning model. This calls for teachers to be technologically-relevant in order to improve performance. Technologically-relevant teachers could also be referred to as Educational Technologist. The recent definition of educational technology sees it as a study and ethical practice of facilitating learning and improving performance by creating, using, managing appropriate technological processes and resources. (Kurt, 2017) <sup>[11]</sup>

Teachers should be exposed to, knowledgeable and well-grounded with the concepts of 21<sup>st</sup> century skills, ISTE (International Society for Technology in Education), Standards, P21 Framework and TPACK (Technological, Pedagogical and Content Knowledge), etc. As digital immigrants, the 21<sup>st</sup> century teachers are expected to migrate, be equipped and empowered with the relevant digital literacy skills to handle the 21<sup>st</sup> century learners who are the digital citizens. More so in this times that proximity and physical contacts are gradually giving way to technological, innovative, virtual and better ways of doing things. It is high time the educational system in Nigeria especially the individual teacher wears a new face and migrate to the recent, technological and innovative ways of teaching and learning.

A teacher in the views of Dienne (2012) <sup>[5]</sup> is a vital factor in development and is saddled with the responsibility of helping in breaking the poverty cycle, ignorance and prejudice of the society. Stressing that the importance of the teacher is second to none in the sense that other professionals would not emerge without the teacher's presence. In the same vein, Awotua-Efebo (2001) <sup>[2]</sup> noted that the teacher's personality and what the teacher does, determines all other influences on the quality of education. The quality of education is enhanced by the teacher as they strive to bring life to curriculum and inspire learners to curiosity and self-directed learning. The teacher is the one that develops meaning and conventional wisdom in educational issues (Aminigo and Nwaokugha 2007) <sup>[1]</sup>. Orluwene (2012) <sup>[15]</sup> sees teachers as facilitators of instruction while Vikoo (2016) <sup>[22]</sup> sees the 21<sup>st</sup> century teacher as an orchestrator of learning who helps learners turn information into knowledge and knowledge into wisdom. Also, the teacher in the opinion of Ekeh and Onyekuru (2017) <sup>[7]</sup> is one who teaches and involved in the business of teaching by imparting skills, knowledge, attitudes and values, etc. He/she is professionally trained in the act of teaching and holds the necessary qualifications to teach. Stressing further on the indispensable role of a teacher, Vikoo (2015) <sup>[21]</sup> identified the teacher as the transmission of information or skill. For the teacher to fit into all these attributes described by the different academic authorities quoted above, he/she must be a professional.

Some people ask these questions, "Is teaching a profession?" "Are teachers professionals?" Dienne (2012) <sup>[5]</sup> views a profession as a product of the efforts of those who practice an occupation in ensuring a common basis for training, interest and common standards; and identifies the occupation of a teacher as a profession in the sense that it requires a prolonged period of training which involves

mental work. Brown (2001) <sup>[3]</sup> gave the elements of a profession as follows:

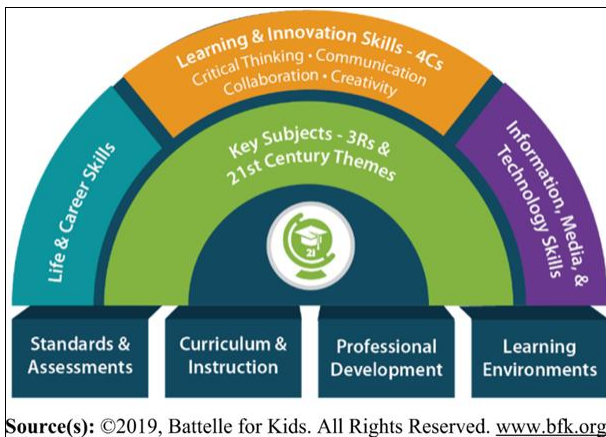
1. **Initial Professional Education:** Professional teachers generally begin their professional lives by completing an academic program in teaching, examples, National Certificate of Education (NCE), Bachelor of Education (B.Ed.), Post Graduate Diploma in Education (PGDE), etc., programs respectively.
2. **Accreditation:** Academic programs are accredited by oversight bodies that regulate and define whether the programs provide adequate education. It assures that teachers start their professional lives with the knowledge they need to perform effectively, examples, Teacher Education Accreditation Council (TEAC), Association of International School Educators of Nigeria (AISEN), and National Council for Teacher Accreditation (NCTA) etc.
3. **Skills Development:** For most professions, education only, is not sufficient to develop full professional capabilities. Emerging professionals such as the teaching profession need practice applying their knowledge before they are prepared to take primary responsibility for performing work in their fields. Examples are the teaching practice and micro teaching programs organized to prepare teachers to teach.
4. **Certification:** Once education and skills development is completed, a professional is required to pass one or more exams that assure the person has attained a minimum level of knowledge. Professional teachers in Nigeria take the Teachers Registration Council of Nigeria (TRCN) exams to become certified teachers.
5. **Licensing:** Licensing is akin to certification except that it is mandatory instead of voluntary and is administered by a governmental authority. Passing the NCE, B.Ed., PGDE and TRCN, etc. exams and obtaining the necessary certification gives the professional teacher the license to teach.
6. **Professional Development:** Many professions are required to keep their professional education current. Teachers need to improve their knowledge and skills after they begin professional practice. This is necessary in this 21<sup>st</sup> century of changing/innovative technological and post Covid-19 era. Digital teaching tools are evolving and there are changes and better ways of teaching which teachers need to be conversant and align with to make education, teaching and learning better.
7. **Professional Societies:** Professionals see themselves as part of a community of like-minded individuals who put their professional standards above the individual self-interest or their employer's self-interest. They promote the exchange of knowledge, define criteria for certification, manage certification programs, establish accreditation standards, and define a code of ethics and disciplinary action for violations of that code. Examples are the Nigeria Union of Teachers and National Teachers Institute, etc.

8. **Code of Ethics:** Each profession has a code of ethics to ensure that its practitioners behave responsibly so also is the teaching profession. The code states what its practitioners should do.
9. **Organizational Certification:** In many professions, not only must individuals be certified, their organizations must be certified. Universities such as the University Of Port Harcourt Institute Of Education (PGDE program) is accredited.

In all ramifications, the teaching profession qualifies as a professional field with the teacher as the pioneer member. In this regard, any carelessness on the part of the teacher affects the educational processes and outcome. For this reason, Awotua-Efebo (2001) [2] asserts that teachers can also degrade the quality of education through error, laziness, cruelty or incompetence. To avoid this, teachers need to professionally develop their skills and competencies and keep developing.

**Demands placed on the 21<sup>st</sup> century teachers**

There is need to examine the 21<sup>st</sup> century learning framework otherwise known as the Rainbow Bar, to facilitate a better understanding of the demands of the 21<sup>st</sup> century on teachers. The skills outlined in the rainbow bar describes the skills, knowledge and expertise learners must master to thrive in work and life (The Partnership for 21st Century Skills 2009). Teachers cannot teach the learners to master these skills without mastering them. For this reason, the 21<sup>st</sup> century learning framework is an indispensable framework for teachers as they are lifelong learners.



Source(s): ©2019, Battelle for Kids. All Rights Reserved. www.bfk.org

Fig 1

**Life and Career Skills:** In order to develop professionally and perform optimally,

1. Teachers are expected to be flexible and adaptable. They need to adapt to the change. This is time to change from the traditional ways of teaching to a more innovative ways of using technological and informative tools in teaching and learning, especially in this era of social distancing.
2. Teachers need to take initiative and be self-directed. Gone are the days of waiting on the government or the so called 'relevant authorities' to effect positive changes. Positive changes in the educational sector begins with the teachers as the educational front liners.

3. Teachers are expected to conduct themselves in professional manner. They should be able to interact effectively using digital tools, know when it is appropriate to listen and when to speak and respond with open mind to the call for innovative/digitalized professional development activities.
4. There is also the need for teachers to be productive and accountable. They should set and meet goals, even in the face of obstacles and competing pressures by building innovative solutions using technological tools to mitigate them.
5. Teachers and teaching professionals are leaders. As leaders, a high sense of responsibility it required of them. They should not pose helpless in the face of challenging situations such as this pandemic. Therefore, it is expected of teachers to guide and lead others by using their interpersonal and problem-solving skills to influence the relevant authorities towards finding solutions to educational challenges. They need to inspire their learners to adapt to using technological tools for learning while using it themselves.

**Learning and Innovative Skills:** These are distinctive skills that enable teachers to readily face and overcome the increasing and complex challenges of life and work environment. They include Creativity and Innovation; Critical Thinking and Problem Solving; Communication and Collaboration.

- a. **Creativity and Innovation:** Teachers are expected to think creatively and innovatively on how to improve teaching and learning; view challenges as opportunity to learn and implement innovations by creatively acting on ideas to make a tangible and useful contribution to the field of education.
- b. **Critical Thinking and Problem Solving:** Teachers and teaching professionals are expected to reason inductively and deductively. This implies that they should be able to effectively analyze and evaluate evidences, arguments, claims and beliefs; interpret information and draw conclusions based on the best analysis; reflect critically on learning experiences and processes; solve different kinds of familiar/non-familiar educational problems in both conventional and innovative ways.
- c. **Communication:** Teachers should be able to clearly, articulately and effectively communicate thoughts and ideas using oral, written and non-verbal communication skills in a variety of forms and contexts. They should be able to listen effectively to decode meaning, including knowledge, values, attitudes and intentions; use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade); utilize multiple media and educational technologies, and know how to judge their effectiveness as well as assess their impact.
- d. **Collaboration:** This is an era of connectivity and collaboration. Teachers and teaching professionals should collaborate with others by reflecting a collaborative-constructivist approach to learning (Igi-global, 2020), by focusing on creating an effective community of inquiry (Garrison, 2018) [8]. They should be able to demonstrate the ability to work effectively, respectfully with diverse teams while exercising

flexibility and a willingness to help make necessary compromise to accomplish a common goal of moving the educational sector forward despite any given challenge.

1. **Information, Media and Technological Skills:** To be effective, efficient and thriving in the business of education in this 21<sup>st</sup> century, teachers and teaching professionals should exhibit varieties of practical and critical thinking skills related to information, media and technology. These skills include:
  - A. **Information Literacy:** Teachers and teaching professionals should be able to access and evaluate relevant information; use, manage information, manage the flow of information accurately and creatively to move education forward no matter the challenging situation.
  - B. **Media Literacy:** They should be able to analyze media, understand how and why media messages are constructed. They should examine learners' different interpretation of messages and the influence of media on learners' behaviour, philosophies etc. Then, apply this understanding to effect a positive change in education. They should also be able to create media products by understanding and utilizing the most appropriate media tools to put in use in order to reach out to the learners.
  - C. **Information Communication and Technology (ICT) Literacy:** Teachers and teaching professionals should be able to use digital technologies such as internet, computers, personal digital assistants, etc., to research, organize, evaluate and communicate information. In this knowledge-based economy, and by virtue of the social distancing created by the COVID-19 pandemic (Lederman 2020) <sup>[12]</sup>, the use of technology will be better, teaching professionals should have some new active learning and other skills that work well online. They should be able to access and use teaching and grading apps such as Zoom, Google Suite, Dropbox, TED, Quick Grader, iGrade, Socrative Teacher, etc.
2. **Key Subjects (The 3Rs and 21<sup>st</sup> Century Themes):** The 3Rs which are Reading, Writing and Arithmetic is not only essential for all learners but also for all teachers. Teachers should develop a mastering of their subject areas and work tirelessly to perform optimally in their core subject areas.

The 21<sup>st</sup> century themes which the teachers need to master apart from their core subject areas include:

#### A. Global Awareness

The effects of the corona virus pandemic on education is a global issue and teachers are required to come up with innovative ways of using 21<sup>st</sup> century skills to address them and ensure that the society moves ahead academically and educationally despite the pandemic.

Teachers' need to connect, collaborate and learn from others across the globe using technological tools so as to be current on global trends.

- B. **Financial, Economic, Business and Entrepreneurial Literacy:** The pandemic period is more like an eye opener for teachers as lots of individuals in the teaching profession suffered blows on their income flow. This brings to fore the need for teachers to learn how to use technological tools and devices to ensure a steady flow of income as those engaged on online and virtual learning activities did not suffer so much challenges on their income flow. This will help alleviate the dependency on salary.
- C. **Civic Literacy:** Teachers should exercise their civic rights and obligations by actively participating in governmental activities. Gone are the days when the 'rewards of teachers is in heaven'. Teachers should not view themselves as those at the mercy of the government. Rather, it should be the other way round. They should be able to understand governmental processes and join professional groups in the teaching profession. These groups can influence government decisions to better the lots of teachers and the teaching profession.
- D. **Health Literacy:** This period has made health literacy imperative and essential. It is no longer business as usual. As professionals who come in contact with reasonable number of learners at a time, teachers should be aware of the health implications of the pandemic and work towards enhancing and protecting their health and that of the learners. This is achieved by adhering to the health precautions as the society gradually adjusts to the new normal.
- E. **Environmental Literacy:** Teachers need to demonstrate knowledge and understanding of the environment and the circumstances/conditions affecting it, particularly the COVID-19 and its impact on the world global world. They need to individually and collectively take actions to sensitize the learners on precautionary measures to take and sanitize the school environment to make it conducive for learning in the post COVID period.
3. **Standards and Assessment:** In addition to these skills reviewed above, standards and assessment is one of the critical structures necessary for lifelong-learners such as teachers and teaching professionals to have mastery in order to utilize the afore-mentioned skills. While Standards are educational goals and objectives that learners should be acquainted with and able to perform at each level of their education; assessment which involves some sort of decision making (Dike, 2016) <sup>[6]</sup>, are wide range of approaches, techniques/methodologies that teachers and teaching professionals apply to assess, evaluate and record the educational/academic willingness and readiness, learning progresses, skill/proficiency and or educational needs of learners. It goes on to explain how well learners have achieved particular concepts or skills using various forms of measuring techniques (Vikoo, 2016) <sup>[22]</sup>.

Teachers and teaching professionals should be able to set specific, measurable, attainable, realistic and timely educational standards for learners; and Utilize effective and efficient feedback on learner performance to support a balanced and unbiased assessments using high-quality standardized testing with effective formative and summative assessments.

1. **Curriculum and Instruction:** Curriculum is a detailed plan for daily teaching and how learners will learn; instruction. (Vikoo, 2017) <sup>[23]</sup> Views it as a plan of teaching and learning activities in which learning is organized, to motivate learners to learn and with the aim of making the learning process take place. Teachers should be able to discretely teach the 21<sup>st</sup> century skills in the context of core subjects and apply digital skills across content areas. They should focus on 21st century skills, content knowledge and expertise. The teaching profession as described by Koehler and Mishra (2016) <sup>[10]</sup>, is an ill-structured discipline that requires teachers to apply complex knowledge structures across different cases and contexts; Therefore, teachers and teaching professionals should have deep knowledge of the concept of TPACK (Technological, Pedagogical and Content Knowledge). They should use TPACK to engage learners in real world issues and meaningfully engage learners in worthwhile activities which will help them develop problem-solving skills. Rogers (2018) noted that TPACK provides teachers with a map for understanding how to effectively integrate technology in teaching and learning. Teachers feel a push to incorporate technology in teaching and learning as a result of the new outcomes that demand it (McGraw, 2020) <sup>[13]</sup>, especially the outcome of the COVID-19 pandemic. Since delivering high-quality online/virtual instruction will take a huge amount of planning and work (Lederman, 2020) <sup>[12]</sup>, teachers and teaching professionals should incorporate innovative learning methods that integrate the use of supportive technologies, inquiry and problem-based approaches and higher order thinking skills that requires a balance of technology-enhanced, formative and summative assessments that measure student mastery of 21st century skills. They should also enable learners develop wide ranges of skills and entrepreneurial/edupreneurial abilities that will enable them to demonstrate mastery of 21st century skills to educators, prospective employers and the society at large. To set standards in the teaching profession, achieve the objectives of the curriculum and ensure effective assessment; teachers and teaching professionals should understand content, understand teaching and also understand technology.
2. **Professional Development:** Teachers are said to be leaders. To be effective and efficient leaders, teachers must possess specific knowledge and cultivate essential skills and abilities (Nwafor, Nwosu, Elechi, Ajie, Oriaku, Owate, Azeke, Nyenke, and Asetubobe 2014). In order to lead in the business of education and possess the specific knowledge, skills and abilities, professional development becomes imperative for teachers and teaching professionals. Tulu (2019) <sup>[20]</sup> broadly sees professional development as the development of individuals in their professional roles. Teacher professional development is the professional height

teachers attain as a result of their gaining advanced experiences in the field of teaching. Teachers and teaching professionals should utilize any and every formal and informal avenues and opportunities to develop themselves professionally as there are innovative and improved ways of teaching in the 21<sup>st</sup> century.

3. **Learning Environments:** Learning environment refers to the diverse physical settings/locations, educational approaches, contexts, cultures and all types of learners and activities. The effects of the pandemic should propel teachers to be able to determine the learning environment that appropriately suit their different learners, their cultures and experiences.

### Teachers' professional development in this 21<sup>st</sup> century

- a. **Desire growth and be willing to grow:** For teachers to improve professionally, there is the need for them to desire change and be willing to change and grow. Performance improvement cannot be achieved until teachers take responsibility for their professional growth and development.
- b. **Make learning and improvement a priority:** Teachers are lifelong learners, when teachers stop learning, they become academically-handicapped, obsolete, outdated, old-fashioned and uninspiring. This means that learning and improvement should be top priority to teachers. They can achieve this by changing their mindset so that they can learn everything they can from every situation. Thus, rather than viewing the challenges the encounter in their daily lives and those orchestrated by the pandemic as something they will merely overcome, they will now view them as an opportunity to learn, innovatively improve and grow in their professional lives and career.
- c. **Connect and collaborate with people of similar interest:** This is the era of collaboration, networking and connectivity. No man is an island, a problem shared is half solved, humans do not live in isolation are popular sayings There is always power in group dynamism. The implication is that to survive in the 21<sup>st</sup> century and develop professionally, teachers must have to connect, collaborate and interact with people of similar interest across the globe. They must make maximum use of the internet to collaborate with professionals who share similar interest with them and those who are professionally-developed and yet seeking professional growth in order to better their professional lives. There is need to ask the professionals questions on how they got to where they are, by so doing they can get professional insight and learn new ways of doing things. 'Iron sharpens iron', so goes the saying.
- d. **Build your soft skills:** Soft skills are those skills that do not employ the use of machinery. They enable teachers to navigate their environment, work well with others, perform well and achieve their goals with complementing hard skills. These soft skills include the following: interpersonal skills, social skills, communication skills, character or personality traits, attitudes, career attributes, social and emotional intelligence, etc. As professionals who interact with

learners of different backgrounds, diverse intellectual capabilities and disposition, teachers need soft skills to be able to relate well with learners and effect the positive change in performance needed to better the society.

### Conclusion

We are in the innovative and knowledge-based economy and at the core of learning revolution. In this era, there is no job/employment for everybody and lots of people resort to the teaching profession as a source of survival and thus handle it with laxity. Therefore, the society is eager for positive change in education.

Change can take effect through the instrumentality of teaching and learning (education). Teachers are in the better position to lead the way and effect this change as a result of their training, knowledge, exposure, experience and expertise in teaching. Using your knowledge and expertise as a teacher in a creative and innovative manner, is evidence that you have the skills and expertise for which you are trained. This in turn, gives you the opportunity to be self-reliant, confident and of course bridge the knowledge gap and create a niche for yourself and make a lasting impact in the lives of your learners, thereby creating value in the society.

### References

1. Aminigo IB, Nwaokugha D. An Advanced Introduction to Philosophy of Education. Port Harcourt: Zelta Consult 2007.
2. Awotua-Efebo EB. Effective Teaching, Principles and Practice. Port Harcourt: Paragraphics 2001.
3. Brown AS. Nine Elements of a Profession. Communication and Leadership handbook, 2001. <http://www.alexsbrown.com/wp-content/uploads/prof9.pdf>
4. Dictionary 2020. *Professional*. <https://www.dictionary.com/browse/professional>
5. Dienne VU. Sociology of Education. Owerri: Springfield Publishers Ltd 2012.
6. Dike HI. Evaluation of Educational Programmes: Needs Analysis, Formative Evaluation, Summative Evaluation. Port Harcourt: Sacheks Publishers 2016.
7. Ekeh PU, Onyekuru BU. Fundamentals of Educational Psychology. Port Harcourt: Sabcos Printers and Publishers 2017.
8. Garrison DR. Designing A Community of Inquiry. 2018 <http://thecommunityofinquiry.org/editorial9>
9. Igi-global. What is Community of Inquiry? 2020 <https://www.igi-global.com/dictionary/communities-inquiry-online-learning/4741>
10. Koehler MJ, Mishra P. What Is Technological Pedagogical Content Knowledge? Contemporary Issues in Technology and Teacher Education 2016. <https://citejournal.org/volume-9/issue-1-09/general/what-is-technological-pedagogical-content-knowledge/>
11. Kurt S. Definition of Educational Technology 2017.
12. Lederman D. Virtual Learning Will Be Better This Fall. Right? 2020. <https://www.insidehighered.com/digital-learning/article/2020/07/29/will-virtual-learning-be-better-fall-will-it-be-better-enough>
13. McGraw H. What is TPACK Theory and How Can It Be Used in the Classroom? 2020. <https://www.mheducation.ca/blog/what-is-tpack-theory-and-how-can-it-be-used-in-the-classroom/#banner-cta>
14. Nwafor AU, Nwosu SC, Elechi EL, Ajie HA, Oriaku C, Owate IO. Higher Education in National Development: University of Port Harcourt in Focus. In: C. M. Uche and C. Agbakwuru 2014, 2-10. Port Harcourt: Celwil Publishers.
15. Orluwene GW. Fundamentals of Testing and Non-Testing Tools in Educational Psychology. Diobu Port Harcourt: Harey Publications Coy, Sunny Alade Printed Production 2012.
16. Rodgers D. The TPACK Framework Explained (With Classroom Examples). Posted in Pro Tips, 2018 <https://www.schoology.com/blog/tpack-framework-explained>
17. Siribodhi T. Challenges in Quality: Teacher Development, 2020. <https://www.seameo.org/vl/library/dlwelcome/publications/paper/Bangladesh/Challenges%20in%20Teacher%20Development.Tinsiri.pdf>
18. Strauss V. Are teachers professionals? 2017 <https://www.washingtonpost.com/news/answer-sheet/wp/2017/08/11/are-teachers-professionals/>
19. The Partnership for 21st Century Skills 2009, 21 Framework. Publication date: 12/09 <http://www.21stcenturyskills.org>.
20. Tulu A. The practice and challenges of school-based teachers' continuous professional development: A case of Government Secondary Schools of Hawassa City in Ethiopia. Academic Journals of Educational Research and Reviews 2019;14(1):33-43. DOI: 10.5897/ERR2018.3646. Article Number: 423AB8759771, ISSN: 1990-3839 <http://www.academicjournals.org/ERR>
21. Vikoo B. Learning Theories and Instructional Processes. Third Edition. Port Harcourt: Pearl Digital Press 2015.
22. Vikoo B. Curriculum Development – A Process Approach. Port Harcourt: Pearl Digital Press 2016.
23. Vikoo B. Educational Media Systems. Port Harcourt: Pearl Digital Press 2017.