Maintaining the Competence and Relevance of Teachers in Today's Economic, Technological, Political and Social Environments in the Country

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ABSTRACT

Teaching and learning in the 21st century environment requires specific skills from teachers for them to maintain their competence and remain relevant. It is the teachers' responsibility to prepare all children for the educational demands of life and work, in a rapidly changing world, by equipping the students with the required skills. The principal aim of this study is to consider how the competencies and relevance of the modern teacher in today's economic, technological, political and social environment in the country can be maintained. This study focuses on four skills: creativity, critical thinking, use of information and communication technology, and collaboration, which are part of the 21st Century Skills. If teachers are expected to train the students to use such ways of working and thinking in the 21st century, then teacher preparation programs should offer multiple opportunities for teacher candidates to learn, develop and practice these skills. The paper reveals ways of integrating the four mentioned skills during a Theory and Methodology of Instruction course, provided within a pre-service university study program for primary and secondary school teachers. The teacher candidates experienced training situations associated with each skill, and then, they were challenged to design such learning situations themselves, within an environment provided by interaction with peers. The teacher respondents' perceptions of their teaching and learning activity related to the four skills are analyzed.
Keywords:Teachers, competence, social, political and country

INTRODUCTION

The competencies and relevance of the modern teacher in today's economic, technological, political and social environment in the country can be determined by a number of factors that characterize the 21st century learning environment, these include knowledge, skills and attitudes necessary to be competitive in the 21st century workforce. The meteoric increase in technological advancement in the last few decades has dramatically transformed how people live their lives. Innovation is seen to be essential as it ensures sustainable growth in a knowledge-based economy and a competitive global marketplace [1]. Education for the twenty-first century according to [2] is about developing multiple intelligences and this demands for a holistic education system committed to enabling a learner to achieve his/her maximum potential. The learning environment in the twenty-first century as [3] noted needs to encompass a multiplicity of places, ideas, and people that is technologically driven and often, a virtual rather than a physical space. The responsibility for creating such an environment lies in the teacher. There may be agreement internationally that the quality of teaching is a critical element of today's teacher education but there exists a wide range of views about how to develop thoughtful, reflective, inquiring, and thinking teachers to meet the challenges of today's and future educational needs [4]. If the teacher education program is highlighted in this issue, there is the clarity in the stance that teaching as a profession has strong mission for knowledge-based system of education that strives to offer equitable opportunity to all. [5] reiterated that to raise the quality of teachers, it is also important to elevate the status of teachers so as to make teaching as an attractive lifelong career of people who consider teaching as their calling and are motivated for lifelong learning. The teacher as noted in [6] is not merely a teacher of a particular subject but a person who places the learner at the heart of his/her job and one who hold the heavy responsibility as a preserver and custodian of societal values. Thus, all the effort in meeting the challenges of changing scenarios confronting education should invariably start with

raising standards in teacher recruitment, preparation, their accreditation, and enhancing the quality of ongoing professional development by infusing a strong inquiry focus, reflections on current practices, and ensuring a strong theory-practice nexus. Collectively, as a special issue, common themes can be considered to have emerged from what the different teacher education programs are endeavouring to focus on in the quest to prepare teachers for the twenty-first century who are thoughtful, reflecting, and inquiring. Some of these include a strong university-based teacher education program interspersed with on-site clinical field experience in schools, many opportunities for reflection and for learning through practice and a strong inquiry-based stance. Ultimately, all these programs have the common goal of trying to develop thoughtful, reflecting, and inquiring teachers with the competencies required to meet the challenges of twenty-first century classrooms. In recent years, as observed by [7], the quality of education across the globe has significantly changed. Previously, the major aim of formal education was that of providing students with certain types of knowledge that they were expected to apply later, today education focuses primarily on 'life skills'. The aim is to teach students to obtain knowledge by themselves and to work in ways that enable them to come up with new ideas. Generating new ideas is a key tenet of modern society. This reality, according to Ferguson, has created the need for teachers who are culturally competent, talented, innovative and creative problem-solvers, technologically skilled and critical thinkers [8, 9]. Teaching and learning within the Nigerian economic, technological, political and social environment have been influenced immensely by the realities of the global system. Thus, the country's educational system has been integrated into the global system where the use of technology plays very vital role in teaching and learning. The Nigerian educational system like other educational systems around the world is looking for best practices to prepare children and young people in schools today to cope with the life and work in the increasingly complex 21st century world. The life and work styles of the 21st century demand a certain skills set from students. It is therefore, the teachers' responsibility to prepare all children for the educational demands of life and work, in a rapidly changing world, by equipping them, the students, with the required skills. Because teachers are expected to empower the students with such skills, teachers should be empowered to achieve the goals of education in the 21st century by acquiring the requisite skills needed for the 21st century learning for them to remain competence and relevant in the system [10, 11, 12]. Teachers need a wide range of competencies in order to face the complex challenges of today's world. Teaching competency is an inherent element of an effective training process, one that aspires to contribute to the welfare of a particular country or the world, itself. The central figures in the educational process are teachers. The success of training and education depends on their preparation, erudition and performance quality. Thus, preparation programs should offer multiple opportunities for teacher candidates to learn, develop and practice these skills, named 21st Century Skills [13, 14, 15]. The purpose of this study is to analytically review the teaching skills that would enhance the competence and relevance of teachers in the 21st century environment in Nigeria and how the teachers could be empowered to deliver effectively.

Theoretical Foundation and Related Literature

International research groups, education planners, and organizations interested in the education field all contributed to the development of the concept "21st Century Skills" and of the frameworks needed for students to be successful in an information-based, technology driven, global society [16]. For example, the Partnership for 21st Century Skills (2010), which is an organization established in 2002 by leaders in business and education, all advocating to assure a 21st century education for all learners, defined 21st century students outcomes as the blending of core subject areas (traditional subjects taught in schools) and 21st century interdisciplinary themes (global awareness, civic literacy, health literacy, financial, economic, business and entrepreneurial literacy, civic, health, environmental literacy) with specific skills, expertise, and literacy skills necessary for future success. Skill categories include: learning and innovation; information, media and technology; life and career. Learning and innovation skills comprised of the 4Cs of critical thinking, communication, collaboration, and creativity. Information, media, and technology include literacy skills within each component (access and evaluate information, use information accurately and creative, analyze media, create media product, apply technology effectively) (http://www.nctaf.org). Life and career skills involve developing the ability to adapt to change, to be flexible, self-directed, to manage goals and time, to work independently, to interact effectively with others, to be a leader and to act responsibly (Partnership for 21st Century Skills, 2010, Appendix B). In Europe, the 21st century skills have mainly been defined according to the European Reference Framework of Key Competences, which was defined in the Recommendation on key competences for lifelong learning (European Parliament, Council of the European Union, 2006, Annex). The Recommendation defines 8 key competences needed by all individuals for personal fulfilment and development, active citizenship, social inclusion and employment: communication in the mother tongue; communication in foreign languages; mathematical competence and basic competences in science and technology; digital

competence; learning to learn; social and civic competences; sense of initiative and entrepreneurship; and cultural awareness and expression (European Parliament, Council of the European Union, 2006, Annex). In Romania these competences "determine the student's training profile for primary and secondary education" [16]. These key competences are not finite and their development "should be supported by transversal capabilities and skills such as critical thinking, creativity, sense of initiative, problem solving, risk assessment, decision-making and constructive management of feelings" [17]. Since teachers must be able to guide pupils towards skills needed in future society, the 21st century skills, then teacher preparation programs should consider this issue, at different levels: standards, curriculum, instruction and assessment. Teachers themselves need to acquire competencies to teach 21st Century Skills to their students, to purposefully integrate these skills into the core curriculum. From the perspective of initial teacher training, preparing students with these skills requires creating learning practices and supports for prospective teachers, who have to learn new pedagogies with curriculum and instruction that promote 21st century skills. In a study about the ways the adult pre-service teachers apply 21st century skills in the practice, is considered that "is extremely important that graduating teachers have such professional abilities as to implement 21st Cs in their work skilfully and with courage" [18].

Definition of Concepts
Teaching competencies

Some scholars see "competence" as a combination of knowledge, skills and behaviour used to improve performance, or as the state or quality of being adequately qualified and capable of performing a given role. The Occupational Competency movement initiated by David McClelland in the 1960s sought to move away from traditional attempts to describe competency in terms of knowledge, skills and attitudes and to focus instead on those specific values, traits, and motivations (i.e. relatively enduring characteristics of people) that are found to consistently distinguish outstanding from typical performance in a given job or role. The term" competence" first appeared in an article authored by Craig C. Lundberg in 1970 titled "Planning the Executive Development Program", and then in David McClelland's seminal 1973 treatise entitled, "Testing for Competence Rather than for Intelligence". The term has since been popularized by Richard Boyatzis and many others (Fullan, 2001). A competency is more than just knowledge and skills; it involves the ability to meet complex demands by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context. Competency is essential to an educator's pursuit of excellence. Teachers need a wide range of competencies in order to face the complex challenges of today's world. Teaching competency is an inherent element of an effective training process, one that aspires to contribute to the welfare of a particular country or the world, itself. The central figures in the educational process are teachers. The success of training and education depends on their preparation, erudition and performance quality.

21st century learning and innovative skills

Considering that this research study is focused on fostering the competence and relevance of teachers in the 21st century environment we are going to define some of the 21st century teaching and learning skills as they are defined in the Partnership for 21st Century Skills (2009, p. 3-4): Collaboration skills involve the ability to work effectively and respectfully within a team, the willingness to compromise to accomplish a goal, and assume shared responsibility. Communication skills entail being able to articulate ideas and thoughts effectively through oral, written, and nonverbal methods, possess the ability to decipher meaning through listening, using communication for a range of purposes and being able to converse in diverse environments.

Creativity skills refer to using a wide range of idea creation techniques, such as brainstorming, creating new and worthwhile ideas, being able to analyze and evaluate original ideas and working creatively with others. Critical-thinking skills are about using various forms of reason, such as inductive and deductive, analyzing how parts of a whole interact with each other, evaluating major points of view, and reflecting critically on learning experiences and processes. Learning and innovation skills "are being recognized as those that separate students who are prepared for the more and more complex life and work environment of the 21st century, and those who are not" (The Partnership for 21st Century Skills, 2009, p.3). We mention that all four skills are also found in the competencies profile of the European citizen for the 21st century.

METHODOLOGY

The subjects of this research study included 22 form teachers selected at random from four primary schools and seven secondary schools in Enugu, South-eastern Nigeria during the second term of the 2017/2018 academic year. These teachers during their university training offered the course; 'Theory and Methodology of Instruction (TMI)', which was part of the teacher training curriculum for school teachers, with 2 hours of course activities and 2 hours of seminar per week. The aim of this course is to help teachers to acquire skills in the design, implementation and

72

evaluation of training at primary and secondary education levels. Our intentions related to this study were to provide the teachers with opportunities to acquire knowledge and practice of the 21st Century Skills within this discipline and to prepare the transfer of these skills on primary and secondary school curriculum, considering the perspective that these students are going to be future educators, who are expected to be able to facilitate the acquisition of 21st century skills for their future pupils and students. The 21st Century Skills that were chosen as the focus of this study were: communication and technology, critical thinking, collaboration and creativity (the "Four Cs"), which form the framework for classification. We would like to mention that these four skills are compatible with the professional and transversal profile of competences for the graduate teachers in the modern Nigerian society. Through a qualitative design, the study explored teacher candidates' experiences from the Theory and Methodology of Instruction course. The following questions guided the investigation:

1. To what extent do teachers believe that they have developed the desired range of professional skills with technology and are able to integrate these skills into school curriculum?
2. To what extent do teachers expose learners to a range of technologies and develop their skills to use them within their everyday learning?
3. How do teachers use technology to build dialogue and engagement with parents, carers, families and communities?
4. How do teachers consider their school plan and approaches to ICT as a whole school issue? An anonymous survey questionnaire was administered in order to obtain students' perceptions of various aspects of their teaching and learning activity related to the 21st century skills. The questionnaire contained closed and open-ended questions, which supplied data for analysis. The questions in the questionnaire were designed around the research questions. Students' open-ended responses were used to understand the students' perspective of 21st Century Skills. A coding process was utilized in attempts to gain meaning from the data collected during the research study.

RESULT AND DISCUSSION

The extent to which teachers believe that they have developed the desired professional teaching skills with technology and the ability to integrate these skills into school curriculum was surveyed andpresented in table 1.

Table 1: Teachers' response on how they develop their professional teaching skills with technology

S/No.	Items	Regularly	Sometimes	Not at all
1.	Do you use ICT to support your planning?	31%	32%	37%
2.	Do you embed ICT across the curriculum to enhance and extend learning?	30%	41%	29%
3.	Do you use ICT to communicate information and concepts in high quality lessons?	31%	32%	25%
4.	Do you use ICT to explore complex ideas and information?	44%	46%	10%
5.	Do you use ICT to assess pupils and track their progress?	10%	12%	78%
6.	Do you use ICT to store and analyse pupil data for formative and summative assessment?	22%	29%	59%
7.	Do you review your own ICT skills and effective use of ICT in learning, teaching and management?	48%	32%	20%
8.	Do you include clear personal targets for ICT in your performance review?	42%	21%	37%

From the above, it could be seen only 31% of the teachers use ICT regularly to support their lesson planning, 32% use ICT sometimes while 37% do not use ICT to support their lesson plan at all. Also, from the table it could be gathered that only 30% of the teachers regularly embed ICT across the curriculum to enhance and extend learning, 41% does so sometimes while 29% do not at all. Furthermore, the result reveals that 31% regularly use ICT to communicate information and concepts in high quality lessons, 32% does same sometimes while 25% do not. The result also show that 44% of the teachers regularly use ICT to explore complex ideas and information, 46% does same sometimes while 10% do not at all. The table also reveal that only 10% of the teachers regularly use ICT to assess pupils and track their progress, 12% does same sometimes while 78% of the teachers do not at all. It was also revealed that 22% of the teachers regularly use ICT to store and analyse pupil data for formative and summative assessment, 29% does same sometimes while 59% do not. Also, the result reveals that 48% of the teachers regularly review your own ICT skills and effective use of ICT in learning, teaching and management, 32% do same sometimes while 20% do not. Finally, the result on table 1 reveals that 42% of the teachers regularly include clear personal targets for ICT in your performance review, 21% do same sometimes while 37 do not. These findings show that a significant number of teachers in Nigeria have not fully integrated the use of ICT in teaching and learning. Also, there is minimal use ICT in the assessment of pupils and students' progress. Most teachers also do not set person targets for ICT skills development. Thus, it could be concluded that most teachers have not being advancing their career with technology and this tells on their competence in teaching and managing pupils and students that are already using technology as part of their daily life and increasingly expect to use it for learning in school. The extent to which teachers expose learners to a range of technologies and develop their skills to use them within their everyday learning was surveyed and presented in table 2.

Table 2: Teachers' response on how they expose their students to a range of technologies and develop their skills to use them in everyday life

S/No.	Items	Regularly	Sometimes	Not at all
1.	Do you have high expectations of all learners and outcomes when using ICT?	54%	32%	14%
2.	Do your learners have personalised, creative and independent learning experiences using ICT?	58%	21%	21%
3.	Do you use ICT to provide solutions to support learners with special needs?	11%	13%	76%
4.	Do you assess your learners' ICT capabilities?	44%	26%	30%
5. their	Do you use ICT to involve learners in	53%	22%	25%
	own assessment?	62%	34%	4%
6. of	Do your learners have an understanding			
	e-safety and responsible online behaviour?	48%	33%	19%
7. your	Do you consider the need to protect	10%	21%	6
	learners' personal information? (e.g. mark sheets)			
8.	Do you manage ICT flexibly to ensure your learners have access to a wide range of ICT resources; in a variety of situations, when needed?			

Results from table 2 reveal that 54% of the teachers regularly have high expectations of all learners and outcomes when using ICT in the classroom, 32% sometimes have while 14% do not. The table also shows that 58% of the teachers stated that their learners regularly have personalised, creative and independent learning experiences using ICT, 21% stated that they

do sometimes while 21% stated that they do not. Result on the use of ICT to support learners with special need shows that 11% of the teachers regularly use ICT to provide solutions to support learners with special needs, 13% do sometimes while 76% do not. Furthermore, the result shows that 44% of the teachers regularly assess their learners' ICT capabilities, 26% sometimes do while 30% of them do not. Result also reveal that 53% of the teachers regularly use ICT involve learners in their own assessment, 22% do same sometimes while 25% do not. It is also shown in the table 62% of the teachers averred that their learners regularly have an understanding of e-safety and responsible online behaviour, 34% stated that they do sometimes while 4% stated that they do not. The result on the table also show that 48% of the teachers regularly consider the need to protect their learners' personal information, 33% stated that they do sometimes while 19% stated they do not. Finally, the result on table 1 reveals that 10% of the teachers regularly manage ICT flexibly to ensure your learners have access to a wide range of ICT resources; in a variety of situations, when needed, 21% do sometimes while 69% do not.

In summary, it is shown that learners show more eagerness and enthusiasm when they learn with ICT and can work on their own using ICT. The findings also reveal that there is need for schools and teachers to support learners with special needs. Another interesting finding here is that teachers and schools have not always ensured that learners have a wide range of access to ICT resources. The extent to which teachers use technology in building dialogue and engagement with parents/carers, families and community was surveyed and presented in table 3.

Table 3: Teachers' response on how they use technology to build dialogue and engagement with parents/carers, families and community

S/No.	Items	Regularly	Sometimes	Not at all
1.	Do you contribute to the school's vision	61%	23%	16%
	for using ICT at school and at home?	31%	21%	48%
2.	Do you use ICT to communicate	32%	14%	54%
	appropriate information with parents?			
	(homework, news, events, etc.)	30%	16%	54%
3.	Do you provide parents with information	35%	42%	23%
	about their child via secure online access?			
	(reports, attendance, etc.)	12%	24%	64%
4.	Do you help parents understand their e-safety responsibilities?	28%	31%	41%
5.	Do you share, with learners, the school's vision for using ICT at school and at home?			
6.	Do you use ICT to support and extend learning beyond school? (e.g. learning platform or school website)			
7.	Do you offer wider opportunities for learners to use ICT to continue and/or extend learning beyond school? (e.g. out of hours access to ICT facilities)			

Result on table 3 reveals that 61% of the teachers regularly contribute to the school's vision

for using ICT at school and at home, 23% do sometimes while 16% do not. Also from the table, it is discovered that 31% of the teachers regularly use ICT to communicate appropriate information with parents, 21% do sometimes while 48% do not. Furthermore, the table reveal that 32% of the teachers regularly provide parents with information about their child via secure online access, 14% do sometimes while 54% do not. It also revealed that 30% of the teachers regularly help parents understand their e-safety responsibilities, 16% sometimes do while 54% do not. From the table also, it is shown that 35% of the teachers regularly share, with learners, the school's vision for using ICT at school and at home, 42% do same sometimes while 23% do not. Furthermore, the table reveal that 12% of the teachers
regularly use ICT to support and extend learning beyond school, 24% do sometimes while 64% do not. Finally the result on table 3 also showed that 28% of the teachers and their schools offer wider opportunities for learners to use ICT to continue and/or extend learning beyond school, 31 do sometimes while 41% do not.

The findings from table 3 obviously show that is low level of communication between teachers and parents or carers via ICT. Hence, parents and guardians are not given constant information on their children and wards. Also, majority of the teachers do not communicate with parents on their e-safety responsibility towards their children. It is also revealed from table 3 that most teachers do not share the school vision for using ICT at school and at home. It is also discovered from table 3 that most teachers and their schools do not have platforms for using ICT to support and extend learning beyond school and as such do not offer wide opportunities for learners to use ICT to continue learning beyond school.

The extent to which teachers consider their school plan and approaches to ICT as a whole school issue was surveyed and presented in table 4.

Table 4: Teachers' response on how they consider their school plan and approaches to ICT as a whole school issue

S/No.	Items	Regularly	Sometimes	Not at all
1.	Do you use ICT to communicate with	88%	12%	0%
	colleagues?	41%	13%	46%
2.	Do you share your practice in ICT with	10%	22%	68%
	colleagues?			
3.	Do your targets for ICT development	12%	13%	75%
	inform whole school CPD planning?	41%	23%	36%
4.	Do you contribute to your school's self-	68%	29%	3%
	review of its use of technology?			
5.	Do you share your school's vision for ICT, at school and at home, with stakeholders, including, parents and carers?			
6.	Do you support your school's commitment to improving the quality of education through technology?			

Result on table 4 shows that 88% of teachers regularly use ICT to communicate with their colleagues, 12% of them do so sometimes while 0% do not. It is also revealed that only 41% of the teachers regularly share their ICT practice with colleagues, 13% of them sometimes do while 46% do not. It is also shown that only 10% of the teachers affirm that

their target for ICT development regularly inform whole school curriculum planning development, 22% of them stated that sometimes their targets for ICT development inform whole school CPD planning while 68% do not. In the same vein, 12% of the teachers affirmed that they regularly contribute to their schools' self-review of its use of technology while 75% of them do not make any contribution to their school's self-review of its use of technology. Furthermore, the table shows that 41% of the teachers regularly share their schools' vision for ICT at school and at home with stakeholders such as parents and carers, 23% of them do so sometimes while 36% do not. The table also revealed that only 68% of the teachers regularly support their school's commitment to improving the quality of education through technology, 29% sometimes support while 3% do not.

In could be concluded from the findings of table 4 that although there seems to an increased rate of ICT use for communication among the teachers, most of them tend not to share their ICT skills with colleagues leading to low collaborative growth. Also, it is observed that teachers' personal ICT development target often do not inform school curriculum development planning and is therefore not considered by most schools. In the same vein, it was observed that very few teachers contribute to their schools' self review it its ICT use as significant proportion of teachers do not share their schools' vision for ICT at school and home with parents and guardians or carers. Thus, it could be seen that there is lack of collaboration among the teachers and between the teachers and school management thus limiting the rate of collaborative advancement in the used of ICT among the teachers. It can also be concluded that some teachers do not give enough support to the schools commitment to improving quality education through technology.

Conclusion

Many schools today still reflect their Industrial Age origins with rigid schedules, inflexible facilities, and fixed boundaries between grades, disciplines, classrooms, and functional roles. The 21st century, though, requires a new conception of education - one that breaks through the silos that separated schools from the real world, educators from each other, and policymakers from the communities they meant to serve. The modern world demands learning environments that embrace the wide world of people, places, and ideas, and are flexible in their arrangements of space, time, technology, and people. These connections will foster healthy cultures of mutual respect and support among students, educators, families, and neighbourhoods, serving their lifelong learning and recreational needs, and uniting learners around the world in addressing global challenges and opportunities. This paper submits that for the modern teacher to be considered competent and relevant in today's economic, technological, political and social environment in the country he or she must possess the 21st century competencies of a teacher which consist of the knowledge, skills and attitudes necessary for effective teaching and learning in the 21st century. The 21st century teacher needs to know how to provide technologically supported learning opportunities for students and know how technology can support student learning. The paper also reveals that the use of technology opens up huge opportunities for teachers especially in planning and administration, in teaching, assessment, and in engaging parents and the wider community. The paper has also shown that technology can help to: motivate learners and keep them engaged in learning, improve attainment levels and raise standards, personalise learning and give learners a voice, make difficult and abstract concepts easier to explore, save you time and be more efficient, open up dialogue with parents and extend learning, make learners partners in their formal learning and reach the hard-to-reach.

However, using the global standard for effective teaching and learning in the 21st century to measure the competence of teachers in Nigeria especially in terms of technological skills; this study reveals that a significant number of teachers in Nigeria are incompetent and could be considered irrelevant in the profession currently. Most of these teachers at their present level of operation cannot effectively deploy then use of technology to achieve the ends of education and are therefore considered incompetent in the present age. The Nigerian teachers and also the school system as a matter of necessity need to be

77

empowered to enable them possess necessary technology skills, and know when and how to use current educational technology, as well as the most appropriate type and level of technology to maximize student learning. It is only through this measure that their competences would be enhanced.

RECOMMENDATION

This study has discovered that technology is taking all teachers on a journey and the Nigerian teachers are at various stages of this journey. The paper therefore recommend that teachers' education and professional development should be reworked to incorporate training in teaching key competencies that would enhance teaching and learning in the present era. The paper also recommend that the 21st century teacher should be trained to know how to provide technologically supported learning opportunities for students and know how technology can support student learning. Also, policy makers can help enact teacher professional standards and teacher education curricula to develop the requisite thinking and technological skills desired.

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