Standard for 21ST Century Teachers in Exploring from Pre Service (Caterpillar) Stage to in Service Stage (Butterfly) in Education Field

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Abstract: The need for an ideal teacher in this present age is crucial and of utmost importance. Teaching is one of the most lucrative jobs in the world, because education is the bedrock of other occupations. The functions and significance of teachers cannot be estimated in this present age. Teachers are paramount and influential agents in the global world today; The different stages of teaching has to be implemented with every form of seriousness, because of the changing world we are living in, of which the education sector is not left out. Certain stages and practices is expected of an ideal teacher, there has to be a developments age which will migrate the teacher from the pre-service (caterpillar stage) to in service (butterfly stages), to that effect the student teachers in education field should be taught right from their early stage before they graduate from the school system. Every potential teacher should have gone through these stages of development in education to become an n-service teacher, there are also prescribed standards expected to be followed and skills to be acquired and this paper gives the need for student teaching practice to be looked into, more emphasized and highly recommendable for all aspiring teachers and those who have flair for teaching.

Keywords: Teacher, Teaching Practice, 21stCentury Skills

1. Introduction

Teaching is one of the most lucrative jobs in the world, because education is the bedrock of other occupations. The role and importance of teachers cannot be over emphasized in this present age. The pre service and in service teacher education is paramount to ensure teachers acquire the right skills and subject knowledge and exhibit the confidence to teach in this age irrespective of the divide they fall into. For every potential and aspiring teacher, there are stages that he or she must go through to become an ideal teacher. The ISTE standard for teacher and p21st century framework gave a breakdown of what a 21st century teacher should look like and also possess. Also, the ISTE standard for student has the breakdown for the student in this 21st century to become competent in their profession and also fit into the field properly without any challenge. Therefore, for those in the education field, a prerequisite and standard should be adopted to guide them into becoming an ideal teacher and this must begin from the caterpillar stage which is student teaching practice down to the butterfly stage which is the fully certified teacher. That is to say, the student teachers in education field should be taught right from their early stage before they graduate from the school system and these leads us to the rationale for this paper.

P21st century framework has three core bars, which are Learning and innovation skills (often referred to as 4Cs), the Literacy skill (information literacy, Media literacy and technology literacy) and Life and Career skills (F.L I.P).

21st Century Skills for Student: Before the student leave the school system, the standard for a 21st century student should be set for them to succeed in this present age. The 21st century learning and innovation skill should be adopted by every 21st century student which are the communication skill, collaboration skill, critical thinking and creativity. These skills will enable them fit into their field properly when they leave the school.

Critical Thinking Skill: Finding solutions to problemsassists students when they do not have access to a teacher.

Creativity Skill: Thinking outside the box, learning creativity as a skill necessitates understanding that the waythings have always been done may have been best 10 years ago, but that has to change someday.

According to Browstein [4]. One of the most important aspects of working with others is willingness. To achieve the company's goals, all participants must be willing to give up some of their own ideas in favour of others

Communication Skills: Effective communication is one of the most undervalued soft skills in the United States. Many people and companies may take it for granted. When students are unable to communicate effectively, the entire project falls apart. Students in the twenty-first century will be unable to advance in their careers unless they understand proper communication.

2. ISTE Student Standards

The ISTE standard is set for Learners in this present generation to understand what is required of them and also the tools they need to facilitate learning process and improve performance. It is important for both the pre service teacher and the in service teacher to understand this standard, so they can relate better with them.

1) Powerful LearnerStudents use technology to actively choose, achieve, and demonstrate competency in their learning goals, which are influenced by the learning sciences. 21st century learner has to be empowered with digital skills to enable them succeed in this present age, according to Prensky [14] The students need to build a stable network that will support their learning process.

2) Students actively choose, achieve, and demonstrate competency in learning goals influenced by the learning sciences by using technology. To succeed in today's world, 21st century learners must be digitally literate. To support their learning process, students must establish a stable network.

3) Citizenship in the Information Age

4) Students are aware of the rights, responsibilities, and opportunities that come with living, learning, and working in a digitally connected world, and they act in a safe, legal, and ethical manner. To succeed in the digital world, students of the twenty-first century will acquire relevant digital literacy skills, be aware when interacting socially online, and respect intellectual property usage and sharing.

5) Students use digital tools to critically curate a variety of materials in order to construct knowledge, create creative products, and create meaningful learning experiences for themselves and others. They generate their own knowledge without using technology or the internet, according to Mayer [12] their knowledge is gained through participation in and exploration of real-world issues and problems, which is followed by the development of solutions and answers to the problems discovered.

6) Creativity Instigator
   Students use a variety of technologies during the design process to discover and solve problems by developing innovative, helpful, or imaginative solutions. In order to design learning for 21st century learners and select appropriate digital tools to plan and manage the selected design process, students must be innovative and creative. Braue [3].

2.1. Consideration for the Computer User

Students learn and apply problem-solving skills that use technological approaches to design and test solutions. 1) Create problem definitions that are appropriate for exploring and solving problems with the help of technology-assisted methods such as data analysis, abstract modelling, and algorithmic thinking.

Gather data or locate relevant data sets, analyzethem using digital technologies, and represent data in a variety of ways to help with problem solving and decision-making.

To better understand complex systems or solve problems, deconstruct problems into component components, extract vital information, and create descriptive models.

Understand how automation works and how to create and test automated solutions using algorithmic thinking.

2.2. Creativity in Communication

Students communicate clearly and creatively for a variety of purposes by using appropriate platforms, methods, styles, formats, and digital media.

a. Determine the most appropriate platforms and tools for achieving their development or communication goals.

b. create original works or repurpose or remix digital resources in order to create new works.

c. express complex ideas clearly and effectively by creating or utilizing a variety of digital artifacts such as visuals, models, or simulations.

d. create or display content that is tailored to the message and medium of the target audience.

2.3. Global Partner

Students use digital tools to work effectively in local and global teams to broaden and deepen their learning.

1) Make use of digital tools to engage students from various backgrounds and cultures in ways that promote mutual understanding and learning.

2) Collaborate with others to investigate challenges and problems from various perspectives, such as peers, experts, or community members, using collaborative technologies.

3) Actively participate in project teams by taking on various roles and responsibilities in order to work efficiently towards a common goal.

4) Use collaborative technology to investigate local and global issues and collaborate with others to find solutions.

3. Teachers' ISTE Standard

Teachers who have found themselves in the field of education should adopt the ISTE standard for twenty-first-century teachers in order to better relate to digital natives who learn more effectively through technology and the internet Prensky, [14]. The following are the prerequisites:

Students' creativity and learning should be encouraged and facilitated.

Teachers use their subject knowledge, teaching and learning skills, and technology to facilitate experiences that promote student learning, creativity, and innovation in both face-to-face and virtual settings.

a. Promote, encourage, and model creative and innovative thinking and creativity.
b. Have students conduct real-world research and problem-solving using digital tools and resources.
c. Encourage student reflection by utilizing collaborative technologies to uncover and clarify students' conceptual understanding, thinking, planning, and creative processes.
d. Use in-person and online learning to demonstrate collaborative knowledge production with students, colleagues, and others.

Create digital-age learning experiences and assessments.

Teachers create authentic learning experiences and assessments that use cutting-edge tools and resources to maximize subject learning in context while also developing the knowledge, skills, and attitudes outlined in the ISTE Standards.

a. Create or revise relevant learning experiences that encourage student learning and creativity using digital tools and resources.
b. Create technologically enhanced learning environments in which all students can pursue their specific interests while actively participating in the development of their own educational goals, management of their own learning, and evaluation of their own progress.
c. Customize and personalize learning activities using digital tools and resources to address students' diverse learning styles, working strategies, and abilities.
d. Give students a variety of formative and summative assessments that are aligned with content and technological standards, and then use the data to inform learning and teaching.

3.1. Model Digital Age Work and Learning

Teachers demonstrate the knowledge, skills, and work processes of a creative professional in an increasingly global and digital world.

a. Demonstrate technical system fluency as well as the ability to apply prior knowledge to new technologies and situations.
b. Use digital tools and resources to collaborate with students, peers, parents, and community members to support student success and innovation.
c. To communicate critical information and ideas to students, parents, and peers, use a variety of digital age media and formats.
d. Recognize, analyze, and evaluate current and emerging digital tools for locating, analyzing, and utilizing information resources for research and learning.

3.2. Encourage and Demonstrate Digital Citizenship and Responsibility

Teachers understand the societal challenges and responsibilities that come with an expanding digital society, and they act legally and ethically.

a. Promote, model, and teach the safe, legal, and ethical use of digital information and technology, such as copyright, intellectual property, and proper source documentation.
b. Meet the diverse needs of all learners through learner-centered practices and equitable access to appropriate digital tools and resources.
c. Promote and model appropriate social interactions and digital etiquette when using technology and information.
d. Raise cultural awareness and understanding by interacting with colleagues and students from different cultures via digital communication and collaboration technologies.

3.3. Participate in Professional Development and Leadership Opportunities

Wang, Haertel & Walberg [17] agrees that teachers promote and demonstrate the use of effective digital tools and resources to improve their professional practice, model lifelong learning, and demonstrate leadership in their school and professional networks.

a. Join local and global learning communities to learn about new ways to use technology to enhance student learning.
b. b. Demonstrate leadership by demonstrating a vision for technology integration, taking part in collaborative decision making and community building, and developing others' leadership and technology skills.
c. Conduct regular evaluations and reflections on current research and professional practice in order to make effective use of existing and emerging digital tools and resources to support student learning.
d. Contribute to the effectiveness, vitality, and self-renewal of the teaching profession, as well as the effectiveness, vitality, and self-renewal of their school and community. ISTE Standards [9].

What exactly is a teacher's job?

Hackathorna, Solomon, Blankmeyer, Tennial, & Garczynski [7] defined Teaching as a rewarding profession that allows you to have an immediate and long-term impact on the lives of others. Teachers use their knowledge and experience to educate and prepare future generations for a productive and successful life. Understanding the job requirements can help you decide if this is the right career path for you.

Teachers use their knowledge and skills to teach students and prepare them for life and postsecondary education. They are also critical for children's emotional development, especially during the critical early years of school.

A teacher's duties may include the following:

1) Make lesson plans.
2) Assign and grade students' homework and assignments.
3) Establish a stimulating learning environment.
4) Carry out standardized tests
5) Discuss your concerns with your parents, guardians, administrators, and other school personnel.
6) Discipline students as necessary.
7) Plan and implement extracurricular activities or programmes

A good teacher possesses a diverse set of personal qualities and skills. Here are a few examples:

1) being able to explain things clearly;
2) being a people person who enjoys interacting with a diverse group of people
3) zeal
4) comprehensive knowledge of specific subject areas
5) being a good time manager
6) the ability to work collaboratively as well as independently
7) maintaining composure in stressful situations having both patience and a sense of humour
8) being fair-minded » coping well with change » enjoying a challenge.

What are the requirements for becoming a teacher?

The following are the stepsaccording to Hackathorna et al [7] to becoming qualified for a teaching position:

1) Earn a bachelor's degree. A bachelor's degree is the first step towards becoming qualified for a teaching position. Although an undergraduate education programme is preferred by many aspiring teachers, it is not required. You can get a bachelor's degree in any subject and still become a teacher if you meet the other requirements, such as student-teacher field experience and state certification.
2) Take part in a student teaching programme.

Teaching practice is an important part of becoming a teacher. It gives student teachers practical teaching and learning experience.

a. A student-teacher is given the opportunity to practice the art of teaching during teaching practice before entering the real world of teaching. Teaching practice is essential for student teachers' preparation for the teaching profession because it serves as a true bridge between student hood and professional membership (Rakesh Ranjan [15].
b. Most university education programmes can put prospective teachers in touch with schools where they can gain teaching experience while being mentored. Student teaching programmes give aspiring teachers valuable classroom experience. It also allows them to learn from their assigned teaching mentors and network with other educators.

Teaching practice is a required course for all aspiring student teachers enrolled in a teacher preparation programme in Nigeria. It usually lasts one semester, from the beginning to the end of the student's final year of college. Currently, the majority of programmers are focused on: 1) Instructional design & technology

1) Mentoring through micro-teaching (Model Teaching, Assessment, Feedback Reports etc.)
2) Research into teaching methods
3) Students are assigned to schools where they can apply what they've learned.

The Student Teaching Program at any higher education institution is a well-structured programme designed to develop and evaluate aspiring teachers' competence in an actual classroom setting within school settings. Field-based experiences such as study abroad and student teaching are examples of field-based experiences that aim to bridge theoretical and practical gaps. The teaching practice exercise involves interactions between the university supervisor, the host teacher, and the aspiring teacher to determine the quality of experience the aspiring teacher will gain. Once certified and employed, it serves as the foundation for the aspiring teacher's professional identity.

3.4. Teaching Practice Objectives

TheNational Universities Commission (NUC) Benchmark and the National Commission for Colleges of Education (NCCE) have established the following objectives for why teaching practice is required as part of teacher education. Aglazor [1] is of the opinion that these objectives are mandatory

i. To provide real-world classroom experiences for student-teachers under the supervision of professional teachers.
ii. To provide a forum for student-teachers to apply educational theories and principles in the classroom.
iii. Assisting student-teachers in identifying their own classroom strengths and weaknesses, as well as opportunities to address their weaknesses and strengthen their strengths.
iv. Provide real-world experience in a school setting for student-teachers as their future workplace.
v. To give student-teachers opportunities to improve their professional skills, competencies, personal qualities, and experience in preparation for full-time teaching after graduation.
vi. Assisting student teachers in developing a positive attitude towards the profession of teaching.
vii. To be used to assess the training quality of teacher education institutions.

Get your teaching certificate.

Certification is the next step in becoming a teacher. State certification requirements vary, but all public school teachers in the United States are required to be certified in education. The state issues these certifications to show that you have completed all of your required education

and training and are thus qualified to teach in public schools. Aglazor [2].

3.5. Method of Coaching for Teacher Preparation

Joyce and showers [11] investigated four methods of teacher training:
1) Presentations, discussions, and readings
2) Exemplification and demonstration
3) Skills practice and feedback are provided in simulated classroom settings.
4) In-class coaching and collaborative problem-solving or question-answering

Coaching was the most effective method of skill transfer; significant transfer occurred only when coaching was integrated into teacher education. This conforms to the gradual release of responsibility model, which includes an expert demonstrating a skill, then side-by-side work in the skill, and finally independent practice using the skill until the teacher candidate is skilled. Pearson & Gallagher [13].

Compared to non-coached teachers, coached teachers had the following advantages: Joyce and showers [11].
1) On a regular basis, implement new strategies.
2) Were more likely to explain models to students;
3) Adapted strategies to their context;
4) Maintained skills over time;
5) Understood the purpose and application of strategies.

Other studies have found that the coaching or mentor-teacher relationship is an effective way to transfer effective teaching practices. According to Ronfeldt, Brockman, and Campbell [16] teachers perform better in their own classrooms when they receive strong mentor teachers during their training. They further discovered that teachers received higher observation ratings when their mentor teachers had higher ratings in their study of 305 teacher candidates who student taught and were hired by the Chicago Public Schools. Although it is unclear how a mentor teacher with higher ratings contributes to the increased effectiveness of his or her student teachers, these studies show that strong mentors have an impact on their student teachers.

Microteaching

Microteaching occurs when teacher candidates watch videos of their lessons with a supervising teacher. During the video review, the teacher candidate receives feedback. This method of providing instructional feedback has been shown to improve both teacher performance and student achievement. Hattie [8].

3.6. Positions for Student Teachers

Student teaching is a common experience in teacher preparation programmes in which a teacher candidate works in a classroom teaching under the supervision of a qualified teacher. It has been demonstrated that extensive student teaching experiences improve teacher outcomes. Dunst et al. [6].

A student teacher can observe, participate in, and teach independently. There is no guarantee, however, that student teaching experiences will include effective coaching practises

that contribute to student success on their own (Cleaver, Detrich, & States, [5].

4. Conclusion

The pre-service teacher should be introduced to the basic things needed or required by an ideal teacher before leaving the school system. Early exposure to this standard from the caterpillar stage will help the student teacher during the butterfly stage.

There is need for the caterpillar stage of teachers to experience all necessary trainings and coaching required in the field of teaching as well as proper mentoring and monitoring; because when any stage is bypassed, the end product is poor, thereby producing half-baked teachers in the society.

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