



TRAINING SCHEMES AND TEACHERS' ICT COMPETENCY DEVELOPMENT FOR INSTRUCTIONAL GOALS ATTAINMENT IN PRIVATE SECONDARY SCHOOLS IN RIVERS STATE

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Abstract

The paper examined training schemes and teachers' ICT competency development for instructional goals attainment in private secondary schools in Rivers State. It argued that targeted training schemes are essential for developing teachers' ICT competency, which is a critical factor in achieving instructional goals. It contended that effective training programs should prioritize hands-on experience, coaching, self-directed learning, and ongoing-support through seminars and conferences to foster teachers' confidence and pedagogical innovation. It reviewed existing literature on ICT tools and resources for effective instructional delivery, teachers' ICT competences and indicators of teachers' ICT competence. It examined the ICT competences required by teachers, and the professional development strategies for technology integration in education. More focus was then on the training schemes for teachers' ICT competency development, and schemes such as ICT training workshops, coaching schemes, and self-directed learning schemes, among others were then thoroughly examined in the light of how they bring about teachers' ICT competency development for instructional goals attainment in private secondary schools in Rivers State. The paper concluded that effective delivery of instruction in the 21st Century learning place is highly dependent on teacher's ICT competences, which could be assured by regular training. The paper suggested among others that proprietors and proprietresses of private secondary schools in Rivers State should provide teachers with regular training opportunities, resources and support to develop their ICT competency.

Keywords: Training Schemes, ICT, Teachers' ICT Competency, Workshops, Conferences, Self-Directed Learning, Coaching



Introduction

Information and Communication Technology (ICT) has become the new normal of the 21st century. There is virtually no field of human endeavor today that has not experienced a transformational revolution by reason of ICT. This technology has become so important that its adoption and utilization has become one of the greatest markers of difference between developed and developing nations, organizations, businesses, and individuals, too. One of the sectors of national economies that have widely enjoyed the dividends of ICT across the world is the educational sector. As a matter of fact, ICT has so transformed the instructional delivery process, making it possible for teaching and learning to now happen beyond the four walls of the classroom and beyond the school time. ICT-compliance has also become a universal measuring tool for the quality of educational systems and of instructional delivery processes in schools (Nbina et al., 2020). Teachers' ICT competence has equally become a tool for measuring teacher quality in the instructional delivery process (Osakwe et al., 2022). As such, making it a priority for teachers to possess requisite competencies in the use of ICT tools is fast becoming a goal for school systems in Nigeria; hence, this paper seeks to examine teachers' ICT competency development for instructional goals attainment in private secondary schools in Rivers State.

The teacher is at the center of teaching and learning with the sole purpose of equipping the learner with the needed knowledge for survival in an ever changing environment. It is imperative for teachers to have the skills to maximize the use of computers as a teaching resource to enhance students learning. Teachers' competence in ICTs may aid blended teaching and learning, reduce bureaucracy in administration and enhance the management of important records in the school, thus increasing efficiency of schools to provide quality education. Teachers' competence in ICTs may also aid access to information in the internet and ensure that the content taught to students is in line with latest development. It further aids online collaboration with peers; makes work easy, fast, and stress-free; and allows ample time for other tasks (Buladaco, 2020).

When it comes to staff capacity building, on-the-job and off-the-job schemes are widely advanced in literature. (Amadi&Anaemeotu, 2013; Mathibe, 2017; Oyitso&Olomukoro, 2015). On-the-job schemes are carried out within the organization while the employees are on their jobs. They include training and development programs like induction of new recruits, orientation programs for the workforce, coaching, mentorship, and supervision. Off-the-job schemes take place while the employees are off their jobs. They include schemes such as workshops, seminars, conferences, symposia, among others. The combination of on-the-job and off-the-job schemes which offer practical, hands-on training would be most appropriate for teachers' ICT competency development in private secondary schools in Rivers State.

The extent of ICT diffusion into the instructional delivery process of schools has now become one of the universally adopted indices for ascertaining the quality of education delivery in school systems of the 21st century. However, experience reveals that despite the increasing importance of technology in education, many teachers in private secondary schools in Rivers State lack the necessary ICT knowledge, skills, competencies and confidence to effectively integrate technology into their teaching practices. As a result of this, even the provision of computers, projectors and other ICT resources for teachers in these schools and the digitalization of classrooms hardly make any difference in instructional outcomes since teachers lack the requisite competencies to integrate them into the delivery of instruction. Failure to attain instructional goals has thus been the order of the day by reason of the ugly phenomenon. As such, private secondary school administrators are tasked with the responsibility of seeing to the competency development of their teachers to this effect. Teachers' professional development schemes such as workshop training sessions, coaching, and self-directed learning could be leveraged by private school administrators to ensure that their teachers acquire the relevant skills for effective use of ICT in the instructional delivery process. Thus, this paper focuses on teachers' ICT competency development for instructional goals attainment in private secondary schools in Rivers State, Nigeria.

Conceptual Clarification

Information and Communication Technology (ICT)

Information and communication technology (ICT) may be regarded as the combination of 'informatics technology' with other related technology; specifically, communication technology. The United Nations Development Programme held in 2016 viewed Information and communication technology as the collection of information handling tools that are used to produce, store, and process, distribute and exchange information. Similarly, Yusuf (2017) described ICTs as electronic technologies used for accessing, processing, gathering, manipulating, presenting, and communicating information. Nwite (2017) saw ICTs as a brand based technology which includes methods, managements and applications that are employed in the creation, storage, manipulation and communication of information. In the same vein, Ikonne (2015) asserted that new technology promises a wide range of teaching function and a higher quality of learning, better student control, more improved instruction and feedback from students. A teacher's role as a communicator, a model as well as identification figure therefore calls for the wise use of devices that would aid in expanding and clarifying experiences. This is made possible via teachers' competency development trainings in the use of such devices, and this becomes more and more necessary as such new devices keep evolving almost on a daily basis.

ICT Tools and Resources for Effective Instructional Delivery

Information and communication technology tools and resources allow students and teachers to interact with the curriculum through the use of a wide range of digital devices including desktop computers, laptops, digital cameras, mobile phones, and smartboards (Purcell et al., 2013). When these tools are integrated effectively into the curriculum and instruction, they enhance learning in influential ways. These tools can give students and teachers the opportunities to reach primary source learning materials, utilizing new methods to collect and record data, communicate, and share learning experiences with teachers; moreover, students can publish and present their knowledge (Eady & Lockyer, 2013). Other electronic resources can support the digital curriculum, such as Twitter, Blogs, Wikis, and Youtube, and other applications can be used to engage and instruct and for assessing students' learning. Students and teachers are anticipated to be connected to these resources all the time while learning and to personalize their learning via the use of technology (Moeller & Reitzes, 2011).

Teachers' ICT Competency

The concept of ICT competency connotes an integrated set of knowledge, skills and attitudes for functional use of ICT in an educational context (Sani & Musa, 2020). It is an integration of teachers' technical knowledge of the use of ICT tools and services, and their relational ability with their students with respect to the technology. Ololube (2013) insisted that technical knowledge of the technology is not enough, but that the teacher must as a matter of professional requirement, be able to effectively manage students, too, motivating and inspiring them to a level of competence in the use of the tools for instructional purposes. Thus in his opinion, an ICT-competent teacher is proficient in the use of ICT tools and services for teaching purposes and at the same time is able to guide students towards ICT proficiency in their learning.

According to Richard et al. cited in Ye and Kavinda (2018), an ICT-competent teacher is a teacher who is knowledgeable about the subject content to be taught; understands the process of learning; uses modelling behaviours effectively; is able to organize and effectively manage the classroom; can plan lessons effectively; is effective in instructional delivery, as well as function effectively as an effective decision-maker and communicator - using Information and Communication tools and services. The introduction of ICT in the above definition caps the requirement for true competence of a 21st century teacher. It buttresses the fact that a teacher cannot really be considered competent if he is competent in all the other areas but is not digitally literate, neither can a teacher be



considered ICT-competent in the context of the classroom if he is only proficient in the use of computers but deficient in the other requirements as conceptualized in the definition.

Indicators of Teachers' ICT Competence

The level of technological literacy that students must achieve during their schooling is given a lot of attention in the United States. National Education Technology Standards (NETS•T) Performance Indicators for Teachers have been introduced in that country (Dzhurylo&Shparyk 2019; Mutinda, 2020). According to the document, the main tasks of forming the ICT competence of the teacher are the following:

i. Facilitating and stimulating the learning and creativity of students, namely: promoting, supporting and modelling creative, innovative thinking and resourcefulness; engaging students in problem research and resolution using digital tools and resources; motivating students to study, using collaboration so that students could develop conceptual thinking, development of planning skills, creative processes; modelling the design of cognitive collaboration by engaging students, colleagues in virtual and traditional learning environments in joint education.

ii. Design and development of digital learning and assessment experiences: designing or adapting relevant learning experiences that combine digital tools and resources to promote students' learning and creativity; the development of a technologically rich learning environment that enables all students to meet their own interests, become active participants in achieving educational goals, manage learning and evaluate their own progress; implement an individual approach to student learning, taking into account the diversity of learning styles, learning strategies and abilities, using digital tools and resources; provide students with a variety of final evaluations that are related to content and technological standards, use results for further teaching.

iii. Modelling digital activities and learning: teachers demonstrate the innovative professionalism of knowledge, skills and work processes important in a global and digital society; demonstrate the fluency of technological systems and transfer of knowledge in the field of new technologies; collaborate with students, colleagues, parents, community members using digital tools and resources to support student achievements and innovation; familiarize students, parents and colleagues with new information, using digital technologies; model and promote the use of existing and new digital tools for placement, analysis, evaluation and use of information resources to support research and education.

iv. Facilitating the formation of digital citizenship and responsibility: teachers are aware of local and global social issues and responsibilities through engagement in digital culture, demonstrate ethical and legitimate behaviour in their professional practice; protect, simulate and teach the safe, legitimate and ethical use of digital information and technologies, including copyright and intellectual property; respond to different student problems using personality-oriented strategies, provide the necessary access to relevant digital tools and resources; promote, support and model digital etiquette and appropriate social interaction with the use of technology and information; develop and model cultural understanding and global awareness by collaborating with colleagues and students from other cultures, using digital communication and collaboration tools.

v. Professional development and leadership: teachers constantly improve their professional practices, provide lifelong education and demonstrate leadership in the professional community by promotion and demonstration of the effective use of digital tools and resources; participate in local and global learning communities for the purpose of creative use of technology aimed at improving the quality and level of education of students; demonstrate leadership by proclaiming the vision of technology integration by participating in overall decision-making, community building, leadership

development and technological skills; study research, professional practice conducted to use new digital tools and resources effectively to support student learning; promote the efficiency, vitality and prestige of the profession of teacher, their school and community (Furman & Kostyuchenko, 2013).

ICT Competencies Required by Teachers

Literature is filled with various ICT competences that teachers should acquire and possess in order for them to be proficient in using ICTs both for themselves and for improving students' performance in the classroom. Turner cited in Ikwuka et al. (2021) listed some of the basic technology skills that all educators should now have. These include: (1) word-processing skills, (2) spreadsheet skills, (3) database skills, (4) electronic presentation, (5) Web navigation, (6) e-mail management skills, (7) file management and Windows Explorer skills, (8) scanner knowledge, and (9) downloading software, among others. Martin and Dunsworth cited in Ikwuka et al. (2021) ascertained that some of the new computer literacy skills are electronic gaming, synchronous and asynchronous communication, weblogs, web pages, and multimedia text production. UNESCO cited in Ikwuka et al. (2021) said that training and professional development will need to focus on the ability to know why, when, where, and how ICT tools will contribute to teaching objectives and how to choose among a range of ICT tools. UNESCO also emphasized training in the ability to analyze, use, and evaluate CD-ROMS, websites, video, audio, courseware, and to assist students to find, compare, and analyze information from the Internet and from other sources related to subject areas.

In a study where interns were asked to report about their own technology skills, Mulbolland cited in Ikwuka et al. (2021) reported that the interns wanted more practice and experience with a variety of software programs, creating web pages, downloading pictures and sounds from the Internet for projects, and using assistive technology devices. European Schoolnet cited in Ikwuka et al. (2021) grouped the competences in four categories of technical knowledge (ICT as a tool), the use of ICT for several purposes (e.g. pedagogical organizational, administrative) in different learning environments; information handling, and security and ethics.

Professional Development Strategies for Technology Integration in Education

UNESCO (2013) has prescribed four basic strategies for professional development that are helpful for integrating technology into education. These strategies include:

- (a) Focus on teaching: The first strategy is that teachers' ICT professional development training needs to focus on practical teaching of the use of ICT rather on theories of hardwares and softwares.
- (b) Access to ICT resources: The second strategy is to ensure that ICT resources are made available for the training and that teachers are granted access to these resources.
- (c) Continuous training and development: The third strategy is that professional development activities in the use of ICT should not be a one-time activity, but rather ongoing processes. Lorenzo (2012) indicated that one-time-only workshops are not known to be effective at making teachers comfortable in using ICT.
- (d) The size: The fourth strategy is to start professional development in a small way by training a small group of teaching staff, who will in turn train other teachers. This is often more effective as it gives the trainees the opportunity of interfacing one on one with their trainers. When the group is too large, it becomes really difficult for the program to be effective as the trainers may not be able to give the trainees all the needed attention.

Instructional Goals Attainment in Secondary Schools in Rivers State

Instructional goals, also known as learning objectives are specific, measurable, achievable, relevant, and time-bound (SMART) statements that outline what students will learn and be able to do as a result of the teaching and learning processes that take place in the classroom in particular and in the

school in general (Blaise et al., 2015). Secondary schools, like every other level of formal education, exist for the primary purpose of teaching and learning, and teaching and learning is given focus and direction through clearly stated goals and objectives. As articulated in the National Policy on Education (Federal Republic of Nigeria [FRN], 2014), the process of teaching and learning that takes place in the secondary school seeks to achieve goals which are inclusive of:

1. Academic achievement: Developing students' knowledge, skills, and understanding in various subjects.
2. Critical thinking and problem-solving: Encouraging students to think critically, analyze information, and solve problems.
3. Communication skills: Developing students' ability to express themselves effectively through writing, speaking, and listening.
4. Collaboration and teamwork: Fostering students' ability to work together, share ideas, and build relationships.
5. Creativity and innovation: Encouraging students to think creatively, generate new ideas, and develop innovative solutions.
6. Civic engagement and responsibility: Preparing students to be active citizens, understand their rights and responsibilities, and contribute to their communities.
7. Emotional intelligence and well-being: Supporting students' social, emotional, and mental well-being.
8. Preparation for higher education and careers: Equipping students with the skills, knowledge, and attitudes necessary for success in higher education and the workforce.
9. Development of values and ethics: Instilling values such as honesty, integrity, respect, and responsibility in students.
10. Preparation for global citizenship: Empowering students to understand and appreciate different cultures, perspectives, and global issues.

These goals align with the Secondary Education Curriculum, which aim to develop students' cognitive, affective, and psychomotor abilities and teachers are central to their attainment. The ICT competencies of teachers thus influence their ability to attain instructional goals, even as ICT has become an integral component of the instructional delivery process of the 21st Century (Asogwa et al., 2020; Blaise et al., 2015; Inije et al., 2013; Ogwu et al., 2023). Effective use of ICT tools and resources enable teachers to enhance students' engagement during teaching and learning and to improve their learning outcomes. Such teachers' efficiency and productivity get increased, and they are able to better carry out students' assessment and feedback with ease. They are also able to engage in personal learning as a way of improving their professional competence, and this brings about better job performance and overall school success. As such, administrators of private secondary schools in Rivers State need to prioritize teachers' ICT competencies development even as it is a critical factor in deciding the success of their schools and of educational goals attainment in the state in general.

Training Schemes for Teachers' ICT Competency Development

Developing requisite competencies in the effective use of ICT resources and tools for instructional delivery may be achieved through various ICT skills acquisition schemes. Literature has widely identified some of these schemes as being effective for the said purpose. For example, Ikwuka et al. (2021) and Olakulehin (2017) identified schemes such as ICT training programs, and workshops organized for teachers to that effect. For Onajite and Aina (2020), teachers could be trained through enrollment in ICT training centres within school communities, special workshops, seminars, and mentoring schemes with other ICT savvy staff found within school systems. In their observation, majority of private secondary schools often have computer science or ICT teachers whose services could be engaged for the training of other staff of the school, or school administrators could employ resource person to that effect if the school does not have ICT-inclined teachers. Husain (2010) also emphasized on the employment of ICT integration models by school administrators to to cover up for

the competency needs of teachers in the ICT instructional delivery process. The idea of self-directed learning is also widely advanced in literature (Amadi, 2021; Ogunbodede, 2023) especially with the present level of ICT popularity in the country and the numerous opportunities presented to internet users for free online learning.

As a matter of fact, we are at a time when people can virtually learn anything on their own, provided they have the basic skills of surfing the internet through their phones. Aduwa-Ogiegbaen (2019) in his study found that Nigerian in-service teachers preferred workshops/conferences/seminars organized within the country, courses in the university, and mentoring as major modes for acquisition of skills in ICT. There is hardly any doubt that these modes of training provide a strong base for teachers' continuing learning and growth. There is however the need for the schemes to be done on a regular basis rather than on a one-off basis, even as regular attendance at conferences/seminars, mentoring, and courses taken from time to time provide more ongoing professional development activities than one-time-only workshops (Lorenzo, 2012; Wang, 2016; and Zhou, 2017). These activities provide improved teacher skills in the classroom, which in turn help facilitate improved student performance. Within the scope of this present paper however, ICT competency development schemes such as workshops training sessions, coaching, and self-directed learning shall be examined.

Workshop Training Schemes and Teachers' ICT Competency Development for Instructional Goal Attainment in Private Secondary Schools in Rivers State

Teacher training workshops are organized events aimed at enhancing teachers' skills, knowledge, and professional development. They can focus on a variety of areas, from classroom management to the use of technology in education. These workshops are an essential part of continuous professional development, ensuring that educators remain up to date with best practices, teaching methodologies, and curriculum changes. ICT workshop training schemes help participants to explore the use of educational technology, software, and tools to enhance teaching and learning. Examples of skills gained through these schemes include using digital platforms (Google Classroom, Moodle), incorporating multimedia, use of virtual classrooms, among others.

Literature (Abba et al., 2023; Umar & Babalola, 2021) highlighted four major ways ICT training workshops develops teachers' competencies for instructional goal attainment. These include:

- i. Enhancing ICT skills: ICT workshop trainings helps in developing teachers' technical skills in using various ICT tools.
- ii. Integrating technology into curriculum: ICT training workshops equip teachers with the knowledge and skills to integrate technology into their teaching practices.
- iii. Improving teaching and learning: ICT training workshops enhances teaching and learning outcomes through making teachers effective in the use of ICT.
- iv. Promoting digital legacy: ICT training workshops foster digital literacy among teachers, enabling them to confidently use technology in their teaching practices.

Coaching Schemes and Teachers' ICT Competency Development for Instructional Goal Attainment in Private Secondary Schools in Rivers State

Coaching schemes for teachers' ICT competency development involves a coach or coaches being engaged by the school administration to work with teachers on the use of ICT tools and resources to improve their teaching practices, student outcomes, and overall professional growth. Effective coaching focuses on specific teaching practices and student outcomes; uses observation, feedback, and reflection to improve practice; encourages experimentation and risk-taking; provides personalized support and guidance; and celebrates successes and progress (Keengwe & Adjei-Boateng, 2012)

Coaching schemes for teachers' ICT competency development come with numerous benefits. Some of the benefits were identified in literature to include:

- (i) personalized support and guidance;

- (ii) improved ICT skills and confidence;
- (iii) enhanced pedagogical practices;
- (iv) increased collaboration and knowledge-sharing; and
- (v) better student learning outcomes, among others (Nwabueze&Anike, 2016).

The scheme could adopt one of numerous models which could be: one-on-one coaching; peer coaching; group coaching; online coaching; or hybrid models (combining face-to-face and online support) (Eniola&Akomolafe, 2022).

Irrespective of whether the coaching scheme is adopted singularly or whether it is the hybrid model, the coach must be someone who possesses certain key characteristics which Eboatu and Ozigbo (2015) and Eniola and Akomolafe (2022) highlighted to include: ICT expertise, teaching experience, strong communication and interpersonal skills, empathy and understanding, ability to provide constructive feedback. By providing coaching support, schools may help teachers develop the ICT competencies needed to enhance teaching and learning, and create a culture of continuous professional development.

Self-Directed Learning Scheme and Teachers' ICT Competency Development for Instructional Goals Attainment

Teachers taking responsibility for their own learning has been found to be one of the most effective means of teachers' competency and professional development. Several authors have argued that the success of any adult learning program is strongly correlated with the extent of the learners' purposiveness, deliberateness, self-drive, self-determination and motivation, and personal effort to learn (Louws et al., 2017; Ogu, 2021; Suslova et al., 2020). It may thus be valid to say that irrespective of the number and quality of professional development programs that are organized for teachers by school administrators, until the teachers themselves make personal efforts to self-develop, such administrative efforts may simply prove futile at achieving their intended objectives. As such, self-directed learning as a scheme for teachers' ICT competency development promises great amount of veritability, especially with the vast availability of opportunities for such possibility made possible by the seemingly unrestricted access to technology in this 21st century.

Self-directed learning among teachers, in the view of Mappah (2024), is the process in which educators take the initiative to diagnose their learning needs, set learning goals, identify resources, choose and implement appropriate learning strategies, and evaluate learning outcomes. For Knowles cited in Ogu (2021), self-directed learning means that individuals taking the initiative with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. It is a concept derived from adult learning theories essential for continuous professional development. Teachers engage in self-directed learning to improve their teaching quality, stay updated with the growing body of knowledge in their field, and enhance their professional performance. This process involves educators taking responsibility for their learning, managing their educational demands, and pursuing opportunities to meet their learning needs. Self-directed learning is a vital component of teachers' professional development and is associated with improved teaching experience and quality. It requires educators to be self-motivated, take initiative, and demonstrate strong willingness and motivation to learn and grow professionally (Ahammad, 2023; Bakshi, 2019; Bhatt, 2021). The application of strategies for self-directed learning allows adult learners to advance their studies while fulfilling family, work and other commitments (Khat, 2015).

In the light of teachers' ICT competency development, self-directed learning thus refers to the process whereby teachers make concerted efforts in taking responsibility for their own ICT literacy. It is about teachers seeing the need and making efforts on their own with or without the help of the school administrator(s) to learn, acquire, and develop ICT skills that help them to effectively utilize ICT resources and tools for both personal and instructional purposes. This would require that teachers go out on their own to learn, and practice the use of both available and useful ICT tools for instructional

purposes. It is about teachers self-developing. Even when other schemes like workshops, conferences, coaching, mentoring, and any other competency development opportunities are provided for the teachers by the school authorities, it requires teachers' self-effort to be able to learn, understand, and make the best out of such opportunities. Self-directed learning would in this case require that teachers go extra mile beyond the support made available to them.

The development of information and communication technologies and the increase in virtual learning opportunities have led to a change in people's understanding of learning. In traditional understanding, 'teacher' was seen as the only source of knowledge. Today, sources of information have become very diverse. Therefore, as information has become easier to access, the nature of learning has also changed. In the past, it was important to memorize information, but nowadays, it has become important to gain skills related to where information can be accessed and how to learn it (Karatat&Basbay, 2014; Karatas&Teke, 2021).

To be more precise, people are expected to acquire the skills of learning to learn. Individuals who cannot learn to learn and who cannot organize their learning processes fall behind in many areas in the globalizing world where technology is rapidly developing (Lan, 2022; Limbu, 2020; Taskin, 2019). At this point, we come across the concept of 'self-directed learning' regarding the need for people to manage their learning processes. Self-directed learners make plans by determining their learning goals. They organize how to access learning resources. They are also open to learning, curiosity, autonomy, and taking the initiative to learn in a self-controlled manner (Dhungana, 2022; du Toit-Brits & van Zyl, 2017).

Francis (2017) defined self-directed learning as that which gives learners the freedom and autonomy to choose the what, why, how, and where of their learning. Brandt (2020) revealed that there are four dimensions of self-directed learning in literature. These according to him include:

- a) *Self-regulation*: – the ability to plan, direct and control one's emotions, thoughts, and behaviours during learning tasks.
- b) *Motivation*: the desire to engage in activity that emerges from the inherent enjoyment of an activity or a sense of obligation to engage in a task (Pink cited in Ogu, 2024).
- c) *Personal responsibility*: a willingness to take full responsibility for one's actions. Learners who demonstrate personal responsibility operate with integrity and act in concordance with clear ethical principles (Battelle for kids, 2019).
- d) *Autonomy*: the ability to recognize available choices and take charge of one's learning, control choices through on-going reflection and evaluation. Autonomy develops as learners work independently or collaboratively to set goals, plan learning, select resources and learning strategies, and monitor and evaluate progress (Reinders, 2010).

Some theories and models for self-directed learning among teachers include: (1) Self-Directed Learning Theory (SDL), which empowers individuals to take control of their learning journey, emphasizing intrinsic motivation and personal responsibility; (2) Adult Learning Theory (Andragogy) or Malcolm Knowles' andragogy, a component of SDL, which highlights the importance of self-directed learning for adults, who are motivated by internal factors and need to be involved in the planning and evaluation of their instruction (Van Woezik, 2020); (3) The Concern-Based Adoption Model (CBAM), which helps teachers understand the stages of adopting self-directed learning and reflective practices, which can inform professional development efforts (DesyRusmawaty et al., 2023); (4) Stages of Self-Directed Learning Competencies (SSDL) Model, which proposes that learners advance through stages of self-directed learning competencies, which can be applied to teachers' professional development (Louws et al., 2017); and (5) Transformational Learning Theory, which focuses on the transformation of personal and professional perspectives, which can be applied to teachers' self-directed learning and reflective practices (Hoggan& Finnegan, 2023). These theories and models provide a framework for understanding self-directed learning and reflective practices among teachers and informing professional development efforts. They emphasize the importance of personal

responsibility, intrinsic motivation, and collaboration in the learning process (Sims & Fletcher-Wood, 2021).

According to Mappah (2024), teachers undergo career stages and life cycle, which both teachers and school administrators must understand when it comes to developing practices for teachers' continuous professional development. By recognizing the different phases or stages of a teacher's career, educators can tailor their professional development efforts to meet the specific needs and challenges of each stage (Brandt, 2020). This tailored approach ensures that teachers receive the most relevant and effective support for their continuous growth and development. Effective application of self-directed learning thus goes through the stages of:

1. **Personalized Reflection:** Understanding the career stages and life cycle of teachers allows for personalized reflection on their experiences and progress (Diasi et al., 2020). This personalized reflection can help teachers identify areas for growth, set achievable goals, and track their progress effectively.
2. **Continuous Learning:** The career stages and life cycle of teachers provide a framework for continuous learning, as educators move through different phases of their careers (Dinham et al., 2021). This continuous learning is essential for teachers to adapt to changing educational landscapes, refine their teaching approaches, and make meaningful contributions to student learning outcomes.
3. **Professional Self-Understanding:** understanding the career stages and life cycle of teachers can help educators develop a deeper understanding of their professional identity and experiences (Derakhshan et al., 2020). This professional self-understanding is crucial for teachers to engage in self-directed learning and reflective practices effectively, leading to enhanced professional growth and development.

In conclusion, understanding teacher career stages and the teacher life cycle is essential for tailored professional development, personalized reflection, continuous learning, professional self-understanding, and adapting self-directed learning and reflective practices to different stages of a teacher's career. By acknowledging these stages, teachers can enhance their professional growth and development effectively, contributing to improving the educational landscape (Keller-Schneider, & Yeung, 2020; Kwee, 2020).

Factors that Influence Teachers' ICT Competency Development

1. **Possession and use of Smart phones:** Bhebhe and Maphosa (2018) found out that there is a nexus between competency in the use of Smart phones and the computer. They stated that the possession and use of smart phones was related to internet access and this encourages teachers to use smart phones as a source of information in learning and instructional materials.
2. **Teachers' attitude:** The exhibition of certain negative attitude of teachers affects competence. According to Olewele and Nzeadibe (2015), resistance to change is one of the reasons for low competence in ICTs. The teachers see the computer as an increase in their job task in the classroom.
3. **Availability of ICT materials:** Legg-Jack (2021) found out that ICT materials are not adequately available in primary, secondary and tertiary institutions and when they are absent the competence of teachers is doubtful.
4. **School type:** ICT competency may depend on school type and gender. For example, ThankGod and Innocent (2021) in a study of the availability and utilization of ICT in secondary schools in Rivers state found that there was a significant difference between public and private schools utilization of ICT facilities in teaching.
5. **Gender of teacher:** Gender may also influence competence of teachers in ICT. Male teachers manifested to be more competent in ICTs than female teachers because they appeared to have more manipulative skills and were more in tune with ICT gadgets than females (ThankGod& Innocent, 2021).

It thus becomes imperative for administrators of private secondary schools to see to the availability of requisite ICT resources and infrastructure in their institutions, and to also place emphasis on teacher's possession of requisite skills for the effectiveness of technology-aided instructional delivery in these schools in Rivers State.

Constraints to Effective Implementation of Training Programs for Teachers' ICT Competency Development in Private Secondary Schools

1. *Administrators' unwillingness:* Most proprietors consider it a bad investment investing on teacher training because of high teacher mobility. Literature widely highlighted high teacher mobility/attrition in private secondary schools in Rivers State (Anachuna et al., 2024; Okeke&Okaforcha, 2019; Uke et al., 2024).
2. *Infrastructure constraints:* These include inadequate computer labs, lack of internet connectivity, and poor electricity supply, among others.
3. *High cost of training:* ICT training programs can be expensive, making it difficult for schools to afford.
4. *Lack of technical support:* Inadequate maintenance and technical assistance for ICT equipment.
5. *Teachers' attitudes and beliefs:* Resistance to change, fear of technology, and lack of motivation.
6. *Time constraints:* Teachers' busy schedules and heavy workloads leave little time for ICT training.
7. *Cultural and societal factors:* Traditional teaching methods, gender biases, and cultural norms may hinder ICT adoption.
8. *Brain drain and high teacher turnover:* Teachers may leave schools or the profession, taking their ICT skills with them.
9. *Limited collaboration and sharing:* Teachers may not share knowledge, resources, or best practices.
10. *Inadequate support from school administrators:* Lack of encouragement, resources, or support from school leaders (Aduwa-Ogiegbean&Iyamu, 2015; Amadi, 2021; Christiana, 2018; Hama et al., 2021; Laaria, 2013).

Addressing these challenges is crucial to ensuring effective ICT training for teachers in private secondary schools in Rivers State.

Conclusion

Teachers' ICT competency development schemes are crucial for attaining instructional goals in the 21st century classroom. Effective training programs can enhance teachers' ICT skills, confidence, and pedagogical practices, ultimately leading to improved learning outcomes. These programs when made to be practically inclined, like training workshops, coaching, seminars and conferences, among others, ensure that teachers learn from skilled resource persons, and become more efficient in the use and integration of ICTs into their classroom practices, which ultimately result in improved students' instructional outcomes. As such, quality instructional outcome is assured in private secondary schools through teachers ICT training schemes, which bring about their competency development.

Suggestion

Based on the foregone discourse of the paper, the following suggestions are made:

1. Proprietors and proprietresses of private secondary schools in Rivers State should provide teachers with regular training opportunities, resources and support to develop their ICT competency.
2. Teachers should engage in continuous professional development to enhance their ICT skills, pedagogical practices, and confidence.



3. Policy makers should develop and implement policies that prioritize teachers' ICT competency development and technology integration into education.
4. Researchers should conduct further studies on effective training schemes, teachers' ICT competency development, and the impact on instructional goals attainment in secondary schools and in other levels of education in Rivers State and in other states of Nigeria.

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