



Vidhyayana - ISSN 2454-8596

An International Multidisciplinary Peer-Reviewed E-Journal

www.vidhyayanaejournal.org

Indexed in: Crossref, ROAD & Google Scholar

73

Embracing change: Blackboard to ICT

Main author: Dr. Beenish Naqvi

Teaching Faculty

Department of Mathematics & Humanities,

SVNIT, Surat

beenish.sohel@gmail.com

Joint author: Taiyab Kapasi

Research Scholar,

Department of English, Faculty of Arts,

The Maharaja Sayajirao University of Baroda

Kapasitaiyab@gmail.com

Abstract:

The article emphasizes the importance of adaptability and change in the education sector, particularly in transitioning from traditional learning methods to digitalized classrooms using ICT platforms. It highlights the benefits of digitalized learning, the role of educators in delivering quality teaching experiences in the ICT classroom, and the digital competencies required of educators. The article also discusses the role of technology in modern classrooms, the importance of teachers in providing in-depth analysis and catering to students' individual needs, and the evolving role of teachers as facilitators and mentors. Additionally, the article discusses the importance of digital citizenship in the era of online learning and the role of educators in fostering responsible online behavior among students. Overall, the article



emphasizes the crucial role of educators in helping students maximize the benefits of ICT platforms and digitalized learning.

Key words: Adaptability, Change, Digitalized learning, National Education Policy 2020, ICT platforms, Classroom experiences

"Change is the law of life. And those who look only to the past or present are certain to miss the future."

- John F. Kennedy

Adaptability and change are the ultimate companions in today's highly technological and fast-paced world. This realization implies that educators must comply efficiently with the need for digitalized classrooms. Therefore, in order to maximize the benefits of digitalized learning, teachers and educators should remain inquisitive, flexible, and non-traditional in their approach to imparting high-quality and incredible classroom experiences. The National Education Policy 2020 proposes that teachers should be sensitized to the needs of their students and that their assessment style needs to be redesigned.

Digital learning is defined as "any instructional practice that effectively uses technology to strengthen a student's learning experience and encompasses a wide spectrum of tools and practices." It helps the teachers to advance learning, mitigate learning loss, and create better opportunities for wider social and emotional engagement. It is observed that learning is now happening in a variety of environments such as synchronous, asynchronous, hybrid and virtual formats; or sometimes according to grade level openings that act as a hindrance to those who seek excellence in education. While the grade level openings for student enrolment restrict students who may be naturally adaptable to the course of learning while being unable to prove their flair on the mark sheets, students are allowed to express their inclination or struggles through the digital learning experience. Through a fast-paced ICT classroom experience, students can practice self-directed learning, manage their time, and conduct their own research. This allows them to access recorded sessions while fulfilling other commitments such as extracurricular activities and family time. Moreover, learners can progress to another topic only after mastering the topic and meeting the required criteria to reach the next stage, due to built-in logic in the learning platform.



ICT has helped tremendously in improving the ways of accessing knowledge, researching, communicating, and providing excellent results at all levels of education. It is also pertinent to acknowledge, however, that as a consequence of internet conveniences, this generation is also addicted to screens in an unrelenting way. This seems to satisfy their intellectual, psychological, and adventurous needs. In light of this, we realize that smartphones and TV screens could be channelled in productive ways to support their creative spirit and technical pursuits. They will be able to discover their true potential this way. In the modern age, every child has access to the internet at home, making them content creators. Therefore, in order to uncover the maximum benefits of this tendency to seek fulfillment through gadgets and devices by today's youth, educators need to respond to these realities by adapting their teaching style to suit students' abilities, learning styles, and intellectual interests. Even as the world has experienced a complete transformation when it transitioned from the blackboards i.e the chalk-and-talk method of teaching to the very convenient digital way of imparting education, one not only observes a shift in the style of teaching but also needs to acknowledge the fact that the only need that remains constant today is the need for a good teacher. An educator who is capable of providing the students a strong foundation that is coupled with infallible character. The internet with its vast source of information of all kinds is capable of imparting us with bits and pieces of information. This influx of information is sufficient enough to create a coherent piece out of it which can be used to convey a concept in a meaningful manner. But to make it happen, one requires educators who, through astuteness and trustworthiness, will make sure the student will find him/herself capable of assimilating that wisdom and incorporating it into his learning journey. When teachers are able to provide strategic support, clear instructions, and assistance in order to cater to the diverse needs of the students, it fosters a sense of encouragement among the learners. Moreover, preparing and delivering courses through the usage of innovative methods that are principled on active and experimental learning, helps educators to focus on the students' continuous assessment and observe on areas of improvement. Since this regular assessment is based on learning outcomes, it leads to attainment targets usually being assessed and certify student's ICT skills through practical or theoretical tests.



ICT platforms are rapidly gaining popularity in India, particularly in the education sector. The government has created digital platforms like SWAYAM, which provides free online courses and learning materials to students from various disciplines. Similarly, ePathshala by NCERT offers e-books and other digital learning materials for K-12 students in multiple languages. DIKSHA, another digital platform by the Ministry of Education, provides e-books, videos, and other digital learning materials for students and teachers.

Apart from these, there are also popular private online learning platforms like BYJU's, which offer video lessons and digital learning materials for K-12 students. It covers a wide range of subjects and is available on both mobile and desktop devices. Vedantu is an online tutoring platform that connects students with qualified teachers for one-on-one online sessions. It offers a variety of courses and is accessible from anywhere with an internet connection. These ICT platforms have revolutionized the education sector in India and have made education more accessible and affordable to millions of students across the country.

But having mentioned the need among educators to consider technology as their new best friend, it is also equally crucial to identify the level of digital competency in an honest manner. A teacher may consider him/herself as possessing the know-how to operate in a digital world through his/her knowledge of sending and receiving emails, online financial transactions, or purchasing online tickets to travel. But the technical awareness of performing actions online for the sake of convenience can never be considered enough to perform the role of digital educators. Today, they need to remain abreast about the latest variety of software or even hardware for their ICT classrooms to be able to deliver quality teaching experiences without feeling overwhelmed. Hence, in order to ensure educators do not find themselves to be intimidated by the various technological developments, educators need to be constantly supported through training, mentoring, and assistance in order to meet the expectations of a technologically advanced world.

The transition from Blackboard to ICT can present a number of challenges for teachers and students. One of the biggest challenges is resistance to change, as many individuals may be hesitant to switch from a platform, they are familiar with to a new one. This resistance can slow down the adoption process and make it difficult to implement new tools and processes. Another challenge is the learning curve associated with a new platform. Learning a new



system can be challenging, especially if it has different features and processes than the previous one. This can cause frustration and confusion for both teachers and students, leading to a decrease in productivity. Technical difficulties can also arise when adopting a new platform. The new system may have technical issues that need to be resolved before it can be fully adopted. This can cause delays and frustration, as teachers and students may not be able to use the system as intended. It is important to address any technical issues as quickly as possible to minimize disruptions in the learning process.

If one were to scrutinize the standards followed by most European countries in the field of education, it is observed that ICT training is something that needs to be consistently offered as a compulsory component in all initial teacher development programs. They need to receive constant support that is not only technical in nature but also serves in a pedagogical manner. Notably, this professional support to empower those in the field of education should extend to not just school staff but teachers of all disciplines. It must also include subject-specific training on learning applications through the help of professionally hired ICT coordinators. Once that is achieved, these skilful teachers will be capable of optimizing all the available resources to develop a competent ICT classroom and exploit the digital infrastructure to the fullest, obviously for the sake of improvisation and growth.

However, transforming from a traditional or hybrid mode of teaching to a totally digitalized learning environment could appear daunting to not just to educators but learners also. Therefore, digital tools can be utilized to ease this transition and equip them with the skills required to digitalize their respective craft. Through the use of digital tools, one could effectively increase his/her collaboration with colleagues, open new opportunities and potentially automate portions of their work. Be it the students or the educators, focusing on one's professional teaching/learning requires intentionality. Transitioning from classroom teaching to a digital platform that may otherwise appear as a burden can be lessened by sharing ideas with colleagues, capitalizing on available tools and supporting the co-creation of various resources. Collaborations when performed with others in the same field or organization, facilitates the exchange of ideas that could also possibly support inquiry and reflection. It is important to seek and ask for a wealth of research and common resources in order to capitalize and effectively utilize technology to offer student-centric learning



experience. It will help the educator to meet the diverse needs of students, improve their own and the receiver's confidence and enhance their learning through authentic engagement and quality participation. Moreover, the extent to which a teacher uses technology effectively acts as an important criterion in evaluating a teacher's performance, as observed among educational policymakers in most countries.

According to the article, "Teacher in a Digital Era—Changing Role and Competencies" published in the IOSR Journal of Humanities and Social Sciences, (Vol. 25, Issue 2, Ser.11) authors Dr. Tharamma George T and Dr. Sunil Jacob observe that the technology competencies of a modern-day educator are divided into 5 basic categories, they are: Productivity, Research, Communication, Media and Presentation.

An educator needs to produce and manage learning documents by composing standard educational publications such as parent newsletters, handouts for students and class lists; teaching students to prepare for their own documents on a digital tool such as a computer/tablet.

Moreover, in order to support their productivity through diligence, they also need to analyze quantitative data. This includes administrative work such as putting student test scores into a spreadsheet and analysing them, as well as preparing curriculum materials with digital tables and graphs of curriculum content. In addition to this, they must also organize information graphically. He or she can use specialized graphic organizer programs, as well as general tools such as word processors or presentation programs, to create digital representations of educational information.

To speak of the second basic competency required by teachers in a digital world, they must rely on research through the use of effective online search strategies. The teacher chooses the most appropriate research tools and databases, and applies the most effective search techniques, to produce useful and safe online resources in the classroom.

Furthermore, an educator ought to evaluate and compare online information and sources to avoid discrepancies. Once located, the teacher knows the difference between authoritative and untrustworthy sources. They utilize the pieces of training coupled with their own acumen to ascertain authorship and are aware of how to find sources with different points of view and



then incorporate those finding to provide reasonable skills to students. Educators should also save and cite online information and sources since they are perhaps well aware of a variety of methods for bookmarking and saving valuable online resources. The reason for saving online resources in the aforementioned manner may help to be easily be found later and employed in other learning materials.

Communication through the means using digital tools includes email, instant messaging, mobile colleagues, and knowing how to organize and manage these tools in the classroom. Teachers should enthusiastically collaborate online for learning. An educator must take advantage of the tools listed above in addition to blogs, wikis, chats, audio and videoconferencing to bring outside resources into the classroom and to encourage academic collaboration among students. Publishing learning resources online can also be considered as it could mean anything from a simple teacher's web site to a complex curriculum wiki to the online posting of student projects, to podcasting, the teacher must have mastered an array of tools and techniques for publishing learning materials online.

Media differentiates instructions from digital media. This includes an awareness of assistive technologies for disabled students as well as the ability to use a computer to prepare and present academic ideas in a variety of forms for better learning by all students. Capture and edit images, audio, and video. The teacher can use digital still and video cameras, edit their output on a computer, and produce learning materials that range from simple slide shows to the archiving of student presentations and performances. Producing digital multimedia educational experiences is another aspect in which the teacher can combine media from a wide array of sources into a useful presentation of academic content. All of this can be utilized to teach various skills to students.

Another competency mentioned by these authors cite presentation as an effective way to engage the learner's audio-visual sensory perception. It is achieved through creating effective digital presentations by using common tools for preparing slide shows, videos and podcasts, the teacher can create presentations that follow the principles of communication, and can apply these principles to the evaluation of students' digital work. Deliver digital multimedia presentations. Using common devices such as computers, projectors, and screens, the teacher can set up classroom presentations and arrange for students to do the same. Employing new



media devices for learning for example, large Smart Boards to tiny iPods, the teacher can incorporate a variety of digital devices, and even digital textbooks, for the sake of instruction in the classroom. Those are the skills that just about every teacher need, no matter the subject or grade. Beyond these are the more specific technical skills required of a high school math teacher or a teacher of visually-impaired students, competencies that would be embedded into specialized courses and programs.

Speaking of the role and importance of digital learning in today's age, one is also reminded of a similar yet understated strategy of imparting education through the means of audio-visual mode of teaching is reflected in an anime television series called "Superbook" that was released in 1980s in conjunction with the Christian Broadcasting Network of the United States. The original series chronicled the events of the Old Testament and New Testament of the Bible in its first run, which lasted for 52 episodes. It lifted stories from the Bible to present them to a young audience, mainly of children below the age of 15 in a fun, engaging format. Apart from the smooth narrative, brilliant plot setting and easy-to-comprehend style of execution, it also demonstrated high-quality visuals through animation and therefore proved to be a great success. Perhaps, decades ago the makers of this series had already perceived and understood the importance of imparting education through content, communication, and an enhanced audio-visual experience as a powerful tool to convey messages that have a lasting impact.

Nevertheless, speaking of today's times, with much emphasis on the need for educators to adopt new approaches, one needs to pay attention to the various methods that are available today. Some of the trends that the current generation, also known as Gen Z, enjoys in the process of learning are: Augmented Reality (AR) and Virtual Reality (VR) enable students to experience what they're learning in a practical form.

Accessibility in the form of text-to-speech programs that support learning even for those struggling with some form of disability. Another trend being Cloud computing in which the student can get access to education from any part of the world. Lastly, use of Big Data to understand areas that appear easy or challenging to students and assess the readings to understand ways in which the course could be tailored to suit the student's needs.



Tools like these not only provide support for interactive learning experiences but can also be used to store information or link students with resources. These resources can be used to further expedite in-depth understanding of the topics which were taught and aid the learner's memory as well. Most importantly, education, when conveyed through the help of such tools, is accessible irrespective of factors such as time, location or level of the student's progress.

The way in which the advancement of technology has contributed to the effectiveness of the learning experience of pupils across various demographics is evident through the above-mentioned tools. But even with the advent of Artificial Intelligence, the question remains, if technology has the power to replace human resources. To elaborate further, it is worth observing how it's just a matter of a single click that introduces people to a plethora of information. This information may be what the person was seeking to find or perhaps be way more useful than s/he had initially bargained for. Therefore, one could think that this vast sea of information and resources is a threat to the teacher's role as an authoritative single provider of skills and expertise. Contrary to the wide resources of information available on a single topic through the means of a single click, a teacher in his/her human capacity cannot be expected to give an in-depth analysis of the subject s/he intends to teach nor is it humanly possible to perfectly satiate every student's inquisitiveness. It would not be wrong to accept the fact that teachers are not content experts to provide students with the ultimate knowledge. Therefore, one may find it strange to depend on an educator for learning while s/he can reliably find way more information in the digital world. Does that mean that the role of teachers in a digital age will rapidly diminish to inexistence?

In words of William Pollard "Without change, there is no innovation, creativity, or incentive for improvement. Those who initiate change will have a better opportunity to manage the change that is inevitable." So, in today's digitalized world apparently, the value of teachers is not merely that of a lecturer, but it is through their revamped identity of that of a facilitator and mentor who teach learners the art of self-directed learning. They have to change, plunge into technology, be creative and update with time.

At the moment, although it does appear that tools such as AI or VR could be tailored by humans, specifically teachers, to create content that augments their teaching process and at the same time, also fulfills the goal of the learners. Acknowledging this fact, one does wonder



if being tech-savvy only is a sought-after characteristic of a teacher in this digital age. On the contrary, it should be observed that there are many more qualities that teachers must imbibe in their profession to ensure the correct flow of information and the intended response are both achieved together.

An educator needs to make astute judgments about the quality of the source of knowledge. It is incumbent upon them to verify resources and conduct an analysis of the validity of that information before it is passed on to the ones it has been accumulated for. They need to be open-minded and critically stimulated individuals who are keen to actively cooperate. More support in terms of helping, and being active co-operators with keen attention to detail has the potential to instill confidence in learners to reach out to them, in case of a concept is difficult to understand. In this era, an educator's role has comprehensively shifted from being a preacher to the manager's role which moderates the student's emotional and social behaviour. S/he needs to be well informed about their time consumption. This would help students to know the amount of time demanded by a topic or subject, reassess the pace and determine ways to finish their learning within the time frame. Similarly, it also enables educators to evaluate ways that can possibly help in finishing the portion on time.

In an article in 'The International Journal of Indian Psychology' titled 'Redefining the Role of Teachers in a Digital Era' by Dr. Jayendrakumar N Amin, the author reflects that, "Teachers working in the Indian higher education system have to manage the technologies and facilities available for effective teaching—Virtual laboratories, e-learning resources from National Programme on Technology Enhanced Learning (NPTEL) and National Mission on Education through Information and Communication Technology (NME-ICT), open educational resources, mobile education, etc."

Apart from being an expert on the subject that s/he as a teacher of, they need to present themselves as excellent coaches, problem-solvers, designers and resource coordinators. But in order to expedite all these roles effectively, they need to be excellent listeners and communicators.



To succeed in imparting valuable educational experience, an educator must present himself/herself as an excellent motivator too. One of the purposes of providing motivation to the learners' stems from the fact that in order to fully grasp the concept, the student must be able to project their interest in the subject. This keen interest coupled with a commendable attitude from the beginning to the end of the course is a good assurance towards the fact that the learning goal has been fully achieved.

Moreover, the educator should also provide valuable feedback whilst proceeding with the course and even after the topic has been covered. Good, unprejudiced and rational feedback provides the student a chance to not only re-evaluate their strategies but also act as a support and guiding factor. It serves as a medium to rectify old mistakes and enlightens the students about the correct approach in other similar scenarios. It is noteworthy that feedback needs to be non-judgemental yet practical. Every student's learning ability, needs, and support would vary from that of the others. Some may find a particular subject difficult to comprehend while someone else from the same batch would find the same thing easy enough to move on to the next topic. Therefore, it is imperative for the educator to approach students with feedback that sufficiently motivates them to perform their best while also helping them understand their flaws in a constructive, dignified manner. In today's time, when students find it impossible to preserve their mental health and vulnerability, an educator needs to provide constructive criticism which acts as support in the long run. The feedback needs to be specific with the help of open and closed questions. The educator must never go overboard with the feedback nor indulge in any comparison with other students. And most importantly, feedback must be relevant to the criteria, and must provide corrective advice instead of just focusing on strengths or weaknesses. Nonetheless, all such corrections must be done quietly and the feedback should reflect clear correction points to avoid further confusion. Relying on the aforementioned ways of effective digital teaching could be helpful in demotivating the learners from dropping out during the course. Moreover, respecting their learning speed would allow them to experience one of the main benefits of online teaching i.e., flexibility.

Depending on the course duration, energizing the class can help establish a favourable environment for the success and satisfaction of the learners. It involves generating a direct discussion with the students to solve their doubts and provide feedback in a friendly setting.



The students can be made aware of the communication channels available to them at the beginning of the course. Video conferencing and chatting are the most common options for individual and perhaps, even group learning.

But just as participation is encouraged to create an atmosphere of discussion that leads to reflection and sharing of ideas to ensure the involvement of all learners, it is crucially important to moderate the exchange of information and response. Sometimes, discussions that are generated in group debates and forums can also enable students to take advantage of collaborative learning. An atmosphere that not only facilitates collaborative learning must be acknowledged as a space of respect and non-judgemental listening, ensuring all participants to feel free in expressing their opinions. It also acts as a space to encourage discussions and provide feedback on interventions to reinforce active and meaningful participation.

In contrast to the advantage of collaborative learning, digital educators also need to monitor the progress of individual learners. This can be done by taking into account their connection times, number of logins, participation in forums, etc. It is vital to determine the individual's graph of progress to motivate them and ensure the timely completion of their course.

Teachers can also be embraced as important role-players who often prepare a complete repository that comprises details about the academic, personal, psychological, and even social support and guidance services. These services can be found in the form of counselling, mentoring, and academic advice and are mandatorily performed within a professional periphery.

Even as teachers make good use of resources like e-library to optimize their role as digital educators, they must also be proficient in understanding content and knowledge management. However, having this knowledge alone is not sufficient unless the educator continues to refurbish, revise and develop content in accordance to the sociological shifts and changing trends.

Although students today are excessively aligned with the latest technology and digital trends, they may still be lacking awareness and the skills to be responsible digital citizens. Good digital citizenship entails the observation of ethical, moral, and responsible behaviors in the online world. They need to exhibit a respectful attitude while navigating and participating



online. Moreover, besides exhibiting critical thinking and problem-solving skills, they must be taught to evaluate online information. The trustworthiness and accuracy of every piece of information that they're introduced to, must be evaluated through fact checks and research. In short, good digital citizens must know their rights and understand their position in the online world, ensuring that the facility of remote learning is never misused in any capacity. Therefore, the student must be taught to take ownership of their privacy and digital presence in order to avoid any obstacle in the path of learning. Therefore, along with enabling access to different tools for online learning, the students should also be made aware of the risks and threats that could possibly emerge from an innocent mistake.

It is important to focus on digital safety practices and to incorporate material designed to develop appropriate means of communication. The focus on providing the students with the wherewithal to protect themselves from cyberbullying or account hacking would enable them to protect their digital identity from potential predators. It would also enable their mental health to be understood and aid in creating a positive relationship with screen time. This positive relationship in turn would ensure that they're capable of making good choices online.

Developing students' digital citizenship will require a design that aids an intentional learning environment. It could be achieved through the collaboration of parents, and families and an approachable educational environment. Nevertheless, educators who collaborate with parents and families to instill good knowledge of being responsible digital citizens would require additional resources to enable the acquisition of skills meant to preserve this identity. This mutual symbiosis of supporting one another for the same cause would eventually leverage educators and parents/ families as partners.

Another fact worth considering in this aspect is that students increasingly share profile information online through simple activities such as signing up for accounts. As a result of which, students often end up sharing more than what was needed. And this data about them is collected by devices, online algorithms, third parties, and companies that seek to cash on the vulnerabilities of these young minds. Therefore, educators need to exhibit an increased sense of responsibility and vigilance to protect student privacy. In order to deal with such complexities, schools need to provide devices and educational tools that are reasonably vetted



already. Alternatively, the school may also provide guidance on vetting and adopting tools that provide security obligations, and meet privacy standards in accordance with the country's law. Notably, these measures should be tailored sufficiently for home and school access. Educators need to be made aware of available resources that may be beneficial for educating students and parents to ensure the confidentiality of students' information is achieved.

In conclusion, it is found that both learning and teaching in a digitalized world, are similar to any other mode of formal education: the learners' needs are determined, content is tailored, learning activities are astutely curated and the learning is assessed. But digital education finds exclusivity in the aspect that this amenity is unbound to time and location for educational purposes. Educators are able to facilitate cognitive thinking among pupils through the use of digital media such as virtual reality glasses, immersive art, holograms, or eBooks by immersing a more integrated form of learning. Furthermore, it may appear that the absence of real social interactions by students could possibly hamper their ability to express disagreements or share viewpoints. Such challenges are overcome when educators allow activities such as interactive read-aloud sessions through the use of audio-video presentations and encourage students to demonstrate their learnings through creatively inspired digital art productions, which commendably advances their literacy and thinking skills. An educator's presence in facilitating the essentials of digital education demands that they facilitate discourse. It should be noted that the word "discourse" has been precisely used instead of "discussion" because the former word refers to the "process or power of reasoning" (Pickett et al., 2007) and a discussion refers to a social connotation of general conversation. Nonetheless, correctly moderated discourses lead to an analysis of the thought process or disagreements and provide students the opportunity for intellectual growth, according to the "Piagetian perspective." Therefore, the change in the dynamics of education for providers and learners, in today's time as well as during the times to come would require the educator to adopt the role of a facilitator instead of a content provider as Henry Ford once said, "If you always do what you've always done, you'll always get what you've always got." Hence, an educator must constantly and unrelentingly reinvent to adapt to new trends and embrace sustainable changes to lead a generation toward progress and triumph.



References:

1. The University of Hull Online & MA in Education. (15 C.E., February). *Digital learning: the future of education*. The University of Hull Online. Retrieved January 14, 2023, from <https://online.hull.ac.uk/blog/digital-learning-the-future-of-education>
2. N Amin, J. (2016). Redefining the role of teachers in the digital era. *The International Journal of Indian Psychology*. <https://doi.org/10.25215/0303.101>
3. EvolMind (E.). (2022). *The 7 key roles of a teacher in e-learning training*. <https://www.evolmind.com/en/blog/7-main-roles-teacher-elearningtraining/#:~:text=Facilitate%20learning>,
4. EDLounge (E.). (2019, February 28). *Using constructive criticism to improve learning outcomes*. <https://blog.edclass.com/using-constructive-criticism-to-improve-learning-outcomes/>
5. *Teacher digital learning guide*. (2021, February 2). Office of Educational Technology. <https://tech.ed.gov/publications/digital-learning-guide/teacher/>
6. *Teacher Digital Learning Guide*. (2021, February 2). Office of Educational Technology. <https://tech.ed.gov/publications/digital-learning-guide/teacher/>
7. Crossland, A., Gray, T., & Reynolds, J. (2018). *ESSA and Digital Learning: Closing the Digital Accessibility Gap*. *The 10. American Institutes for Research*. <http://files.eric.ed.gov/fulltext/ED602482.pdf>
8. Camilleri, M. A., & Camilleri, A. C. (2016). *Digital Learning Resources and Ubiquitous Technologies in Education*. *Technology, Knowledge and Learning*, 22(1), 65–82. <https://doi.org/10.1007/s10758-016-9287-7>
9. Dr. Tharamma George T Associate Professor, Mount Tabor Training College, Pathanapuram, Kollam, Kerala & Dr. Sunil Jacob Associate Professor, Department of Chemistry, Catholicate College, Pathanamthitta, Kerala. (2020). *Teacher in a digital era-changing role and competencies*. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 25(2), e-ISSN: 2279-0837. <https://doi.org/10.9790/0837>



Vidhyayana - ISSN 2454-8596

An International Multidisciplinary Peer-Reviewed E-Journal

www.vidhyayanaejournal.org

Indexed in: Crossref, ROAD & Google Scholar

10. Dr Jayendrakumar N. Amin. (2016). *Redefining the Role of Teachers in the Digital Era*. *International Journal of Indian Psychology*, 3(3). <https://doi.org/10.25215/0303.101>
11. Ray, K., Ed. D. & Executive Director, Center for Digital Education (Directors). (2017, September). *ESSA, edtech and the future of education*. Center for Digital Education. Retrieved January 13, 2023, from <https://cdn.iste.org/wwwroot/Libraries/Documents-%20%26%20Files/Advocacy%20Resources/handbook-essa.pdf>