ICT INTERVENTIONS AND INTEGRETION IN PRIMARY EDUCATION: A CASE STUDY OF BASIC SHIKSHA PARISHAD SCHOOL TEACHERS OF BLOCK NINDURA, BARABANKI, UTTAR PRADESH

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ABSTRACT

The integration of Information and Communication Technology (ICT) into primary education represents a pivotal transformation in the educational landscape. A positive impact on student learning can result from the integration of information and communication technologies (ICT) into the curriculum, provided that instructors are adequately trained, outfitted, and knowledgeable about the subject matter. Executive of Uttar Pradesh Integrated and operational information and communication technology is a recent development in elementary institutions. As a result of the integration of ICT into classrooms, students are more invested in their academic pursuits, which enhance their retention of information.

This is due to the fact that technology offers endless possibilities for making the instruction of identical concepts more pleasurable and enjoyable. This study conducted on basic school teachers to assess their mindset and perception on e-learning. A questionnaire was used to find out their responses. it explores the challenges and barriers encountered by teachers during the adoption process, such as limited infrastructure, training, and technical support. The findings of this research underscore the significance of ICT integration in enhancing the quality of primary education. It suggests that ICT tools, when effectively incorporated, can foster interactive and engaging learning experiences, ultimately improving student outcomes. Furthermore, this study emphasizes the importance of providing adequate training and support to teachers to maximize the benefits of ICT integration.

KEYWORDS: Basic Education, Digital Resources, E-Learning, Hybrid Teaching Learning, Holistic Development, Information-Technology, Learning Outcome, NEP2020.

I. INTRODUCTION

Teaching-Learning is an age-old practice in our country. Depending upon the needs of the time and community it has been continuously changing its course. In the very beginning, without the prescribed book or syllabus, the students tend to learned whatever the teacher taught in the classroom. Time passed, paper and pen were invented, rote system type of learning evolved, the students tend to read the books and then write the answers of the subjects. Presently, the medium and methodology of classroom instruction is no longer the same as it was in the past years, now Technology emerged as the main source of providing education to the students. Moreover, after the emergence of worldwide pandemic in 2020, the need of Information and Technology based learning is widely used in today's education system also known as hybrid teaching where the schools are using both traditional as well as ICT based teaching learning activities to overcome the learning gaps due to the closures of the schools for long lockdown time. So ICT Integration in Schools was the need of time. Most importantly, the Teacher as a nodal of the teaching- learning in schools must be equipped with the basic and required qualification and efficiency to work in present scenario to fulfill the aspirations of the community and the country as a whole.

Seventy percent of technologically proficient educators utilize mobile phones and the internet in the course of their work, according to the Central Square Foundation. Seven out of ten educators utilize computers on a weekly basis to present audio-visual demonstrations in the classroom (Teaching with Technology: Early Adoption of Edutech by Indian School Teachers). How Technology in classrooms has changed Education in India (2019) concluded that the majority of educational institutions in India have invested in technologically rich tools to bring the best out of the classroom lessons. Central Square Foundation, 70% tech savvy teachers use mobile phones and internet in their profession. 7 out of 10 teachers use computers for audio-visual demonstrations in classrooms on a weekly basis (Teaching with Technology: Early Adoption of Edtech by Indian School Teachers) How Technology in classrooms has changed Education in India (2019); concluded that the majority of educational institutions in India have invested in technologically rich tools to bring the best out of the classroom lessons. Technology keeps teachers updated and helps them to learn new things. The use of technological interventions has made school education easy as well as interesting.

II. REVIEW OF LITERATURE

- **Jha and Tiwari (2016)** indicated that while ICT adoption in primary education is promising, it can be hampered by infrastructure limitations. The availability of computers and internet connectivity remains a significant challenge, particularly in rural areas.

- **Jharevi (2017)** conducted a study on Integrating Technology into the classroom examined that Integration of technology now offers educators effective way to reach different types of learners and students because when a teacher effectively integrates technology into subject matter, they take on the role of an advisor and mentor. Technology in the classrooms also encourages students to collaborate with their own classmates through various tech related applications, making learning meaningful and fun.

- **Mishra and Pandey (2017)** underscored the need for well-designed digital content. The quality of educational resources and their alignment with the curriculum play a crucial role in the success of ICT integration.

- **Sharma and Tandon (2017)** found that ICT integration in primary education has the potential to revolutionize teaching and learning. It can enhance student engagement and improve learning outcomes by providing interactive and multimedia-rich content. However, challenges such as limited teacher training may hinder its effective implementation.

- **Yadav and Singh (2018)** point out the need for a comprehensive policy framework to guide ICT integration in primary education. Their research suggests that clear policies can address issues related to equitable access and effective utilization of technology.

- **Mishra and Joshi (2018)** revealed the role of ICT interventions in enhancing teacher-student communication. Interactive online platforms can foster collaborative learning, enabling students to interact with teachers beyond classroom hours, providing additional support.

- **Bharti and Sharma (2019)** emphasize the importance of teacher professional development for effective ICT integration. Their research highlights that teachers need ongoing training and support to make the most of ICT tools and instructional strategies.

- **Verma and Patel (2019)** highlights that ICT interventions in primary education can bridge educational inequalities, especially in rural areas. Their research in the context of Basic Shiksha Parishad schools suggests that ICT helps in delivering quality education even in resource-constrained environments.

- **Dey and Kumar (2020)** highlight the significance of ongoing research and evaluation of ICT interventions. Regular assessment of the impact of ICT on teaching and learning is vital for evidence-based decision-making.

- **Singh and Gupta (2020)** found that ICT integration can empower teachers in Basic Shiksha Parishad schools to deliver personalized instruction. Teachers can tailor their teaching methods to cater to diverse learning needs, leading to improved student performance.

- **Pozoetal (2021)** frontiers in Psychology, critically examined the integration of ICT and teachers. The study perceived these tools as informative support. Perhaps, Covid-19 Pandemic may have contributed to an increase in teacher's experience of ICT learning tools. Pandemic has contributed to familiarizing teachers with ICT.

III.   OBJECTIVES OF THE STUDY

A.   To study profiles and perception of basic school teachers in integrating the e-learning platforms in classroom.

B.   To observe the use of digital educational resources amongst the basic school teachers.

C.   To study the impact, challenges and opportunities in integrating information- technology instruments in teaching and learning process by the basic school teachers.

D.   To analyse findings and suggest the measures for holistic development of students through e-learning in teaching-learning processes.

IV.   RESEARCH METHODOLOGY

The researcher has adopted descriptive methodology for research. The Block Nindura, Barabanki have more than 213 basic schools run by government, composes 150 Primary Schools and 63 Junior High Schools (UPS) having more than 1200 staff serving in different capacities as the Head Masters, Assistant Teachers, Physical Education Teachers, Special Educators, Shiksha Mitra and Anudeshka. This block consists of nearly 553 Villages, 88 Village Panchayats, 9 Nyay Panchayats and presently providing education to 35010 students. A questionnaire survey administered to study and explore the teacher's attitude, perception, challenges and possible solution suggestions toward the use and implementation of e-learning tools in the classrooms. For collecting primary data, approximately 400 basic school teachers were selected as the participants in Nindura Block, Barabanki, Uttar Pradesh. These teachers were selected on the basis of stratified sampling. This study includes the Head Masters, Assistant Teachers, Anudeshak, Shiksha Mitra and DIET staff.

These people were differentiated on the basis of designation. Teachers of Science, Arts, Language, Social Study, Computer Science and Physical Education subjects were participated. The questionnaire was administered through the Google Form. The collected data were gathered to study and analyse the responses.

## V. DATA ANALYSIS AND INTERPRETATIONS

The information gathered from participants has been examined utilizing SPSS. The subsequent section, which comprises the interpretation and analysis of the data, has been organized under different headings to facilitate comprehension. These surveys encompassed questions related to the frequency and extent of ICT tools awareness, utilization, the impact on pedagogical practices, and the challenges encountered. Additionally, relevant quantitative metrics included usage statistics, such as the frequency of ICT tool utilization and student performance data. Graph 1 revealed that 81.30% teachers are aware of the hybrid learning process.

Graph 1: Awareness of hybrid learning process

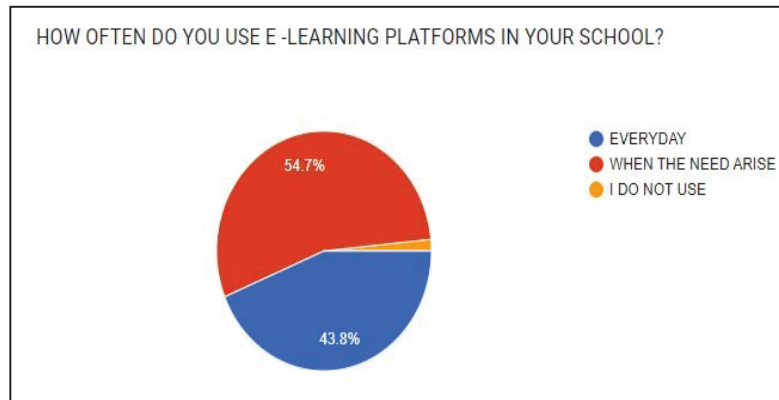DO YOU AWARE OF THE HYBRID LEARNING PROCESS?

Yes
No

18.8%
81.3%
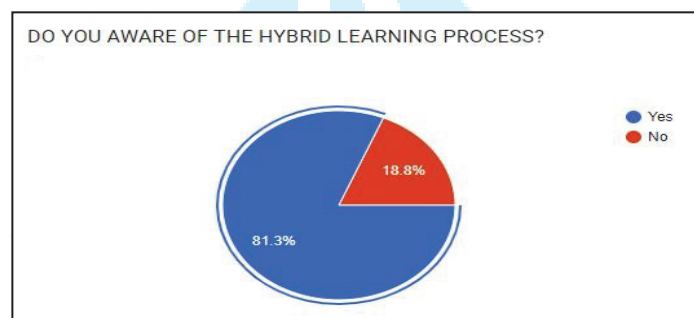
Source: Compiled by authors

Graph 2: Ownership of device and internet

DO YOU OWNED THE ICT DEVICE AND THE INTERNET ?
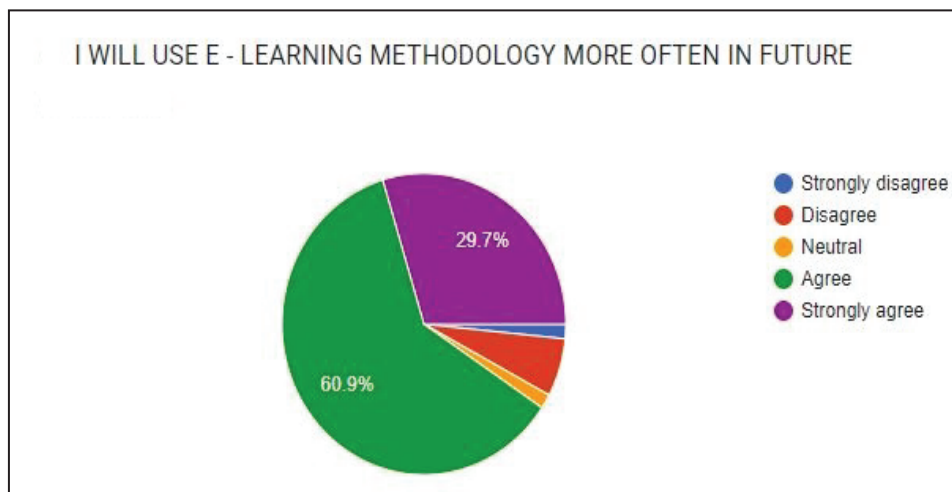
Yes
No

17.2%
82.8%
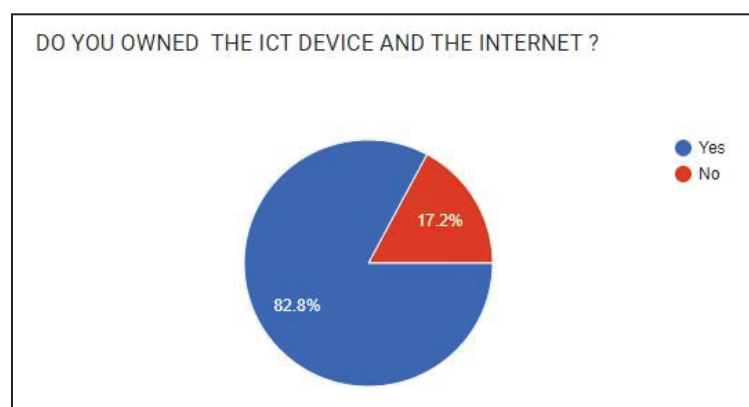
Source: Compiled by authors

Graph 3: Usage of E-Learning Platforms

Source: Compiled by author

Graph 4: Future use of E- Learning Methodology

Source: Compiled by author

Above graphs shows the different facts regarding ICT integration in education Graph 2 suggests that 82.80% respondents owned ICT devices and the internet. Graph 3 suggests that 43.80% of the respondents use E-learning platforms every day in their classrooms activities. Graph 4 shows that 60.90% teachers are hoping to increase the use of ICT in near future.

Table 1: E-Learning Devices used by the Teachers

Sr. no.	Device name	Percentage of Teachers using it
1	DESKTOP COMPUTER	8.00%

2	LAPTOP	46.80%
3	TABLET	8.00%
4.	SMARTPHONES	68.75%
5	TELEVISION SET	6.40%
6	PROJECTOR	28.10%
7	PEN DRIVES	18.70%
8	SOUND BOX	23.40%

Source: Compiled by authors

Table 1 reveals that the Smartphone is the most frequently used E-device as 68.75% teachers used it followed by the laptops which is used by 46.80% teachers in their activities. Similarly Computer, Tablet, Television, Projector, Pen drive and Sound Box are also been used by the teachers in the teaching learning activities.

Table 2: E-Learning Platforms used by Teachers

Sr. no.	Name of the Application / Platform	Usage by the Teachers (Percentage)
1	ZOOM / MEET	29.6%
2	WHATSAPP	70.30%
3	YOUTUBE	50.00%
4	DIKSHA APP	65.60%
5	READ ALONG APP	50.00%

6	DIGITAL LIBRARAY	28.10%
7	DIGITAL GAMES	31.20%
8	CONTENTS OF OTHER TEACHERS	32.80%

Source: Compiled by authors

Table 2 reveals that the 29.60% teachers use Zoom App and 32.80% teachers use the contents of other teachers. 70.30 % of the teachers use Whatsapp, 65.60% use Diksha App and 50.00 % uses YouTube and Read along App for teaching and learning activities in their classrooms. It is also noticed that E-mail, Facebook Apps are not being used by the teachers. Very little numbers of teachers are using QR Based teaching.

Table 3: Major Concerns in ICT integration

Sr. no.	Major Concern and Challenges faced by Teachers while implementing ICT	Numbers of Teachers (Percentage)
1	Availability of Devices	60.90%
2	Network Issues	75.00%
3	Lack of Knowledge of Use of Digital Contents	52.40%
4	Technical Support to the Teachers	74.20 %
5	Training Related Issues / Needs	54.80 %
6	Lack of Contents in Hindi and Local Languages	38.10 %
7	Costly ICT Integration	81.30 %
8	Adaptability / Lack of Interests amongst the Students ,	07.80%

9	Parental Insufficient Support	71.00%
10	It Results in Poor Writing and Arithmetic Skills in Students	36.30%
11	Distraction / Lack of Discipline in Students	20.30%

Source: Compiled by authors

Table 3 reveals that the major issues experienced and observed by the respondents includes is costly ICT integration as 81.30 % respondents faced this followed by 75.00 % respondents face poor network connectivity, 60.90 % respondents face lack of technical devices, 71.00% respondents face poor parental support and 54.80 % respondents face lack of proper technical training. Similarly small percentage (36.30%) of concerns was noticed in the students regarding poor writing and Arithmetic skills. It was observed that just 07.80 % students in classes show lack of interest in e-learning.

Table 4: Opportunities

Sr. no.	Major Points of Concerns	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Use of ICT - More Often in Future in Teaching	29.70%	60.90%	0%	06.30%	03.90 %
2	ICT will help in achieving the Required Learning Outcomes	41.30 %	47.60 %	0%	01.80 %	09.30 %
3	Need timely technical assistance to use E-learning	29.70%	54.70%	3.1%	12.50 %	0%
4	Proper Training will enhance my ICT capabilities and Competencies	39.10 %	54.70%	0.2%	06.00 %	0%

Source: Compiled by authors

Table 4 reveals that the major issue which affects the teacher's capabilities to integrate ICT is Timely Technical Help and Training. Similarly respondents are positive enough to use e-contents more and more in future and as per them it will help in achieving learning outcomes in students. They are aware of the Hybrid Learning. It shows that 39.10% respondents think that their ICT capabilities and competencies will enhance after taking proper training. 60.90% respondents agreed that ICT will use more often in near future.

VI. RECOMMEDATIONS

As the teacher's role is paramount in implementing the integration of ICT in schools, there is a strong need for the teachers to be well acquainted with proper teaching skills and knowledge in using e-contents to improve their teaching approach and promote effective learning and holistic development of students. Students must provide with access to the basic technologies that are most important to their academic success. The maintenance of desktop computer labs, laptop and tablet for enable nearly all students to have access to the technologies they need to succeed. Students should receive consistent and clear information from teachers so that they can make well-informed decisions about the learning environment that are best suited to their own learning and skill development. Expose students to hybrid learning early in their college careers and provide faculty who lack hybrid learning experience with professional development and opportunities to teach in these environments.

Study reveals that ICT based teaching will likely to enhance the learning outcomes. Our classrooms must be equipped with required e-devices, proper network connectivity, timely training, technical support, DIKSHA APP BASED TRAINING, QR CODE BASED TEACHING, READ ALONG APP, PRERNA APP, SARAL APP etc. are the roadmap to the successful integration of ICT in our classrooms. This study finds that the situation regarding the use of e-tools is still in developing phase in our school. Teachers, Trainers, Administrators and other stakeholders should sit together and talk about evaluation so that the needed intervention can be done to achieve the educational objectives prescribed in NEP2020 and as per the aspiration of the society and country.

VII. CONCLUSION

The study observed that in basic schools the use of e-tools is a new area. As far as not getting benefits is concerned until infrastructure in schools, technical support, proper training to teachers, parental support and guidance, all-round balanced educational development of students will not be possible. By implementing ICT into classrooms, teaching now expands beyond to textbooks based role learning to student's centric learning. E-learning technology empowering and enabling teachers, students and other stakeholders to learn best and in line with the present need of the skill based learning under the NEP2020. Effective integration of ICT will certainly be enhancing the learning outcomes of the students. The role of smart teacher is important as in the present world skilled teachers can provide better information about what students need, only then the students will be able to take advantage of e-techniques.

On the contrary, due to the lack of proper guidance instead of achieving efficiency in the academic field the students started taking interests in other spheres like entertainment, game, reels etc. It is clear from this study that the role of the smart teacher particularly in rural schools will be as important in future as it has been in the traditional educational system of the past. Only then the students will be able to take full advantage of the ICT based learning to enhance their all domains of learning. Tezci (2011) founded two factors External and Internal those hinders and influence teachers to use ICT in teaching includes Technology Availability, Accessibility of ICT Tools, Time Table, Technical Support, School Curriculum, School Culture and Teaching Load etc. Several Internal Factors coined by SANG *et al.* (2011) Includes Understanding of ICT, beliefs and attitudes toward technology integration, Perceptions including motivation to use ICT, self-confidence, skills and readiness to use ICT.

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