International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

Subject Teachers Readiness for use of ICT in Haryana Govt. Schools

MANOJ KAUSHIK[1]; DR. SHARAD SINHA[2]

[1]SCERT, School Education Department Haryana, Gurugram and Research Scholar Mewar University Chittorgarh Raj.

[2]Research Supervisor Mewar University Chittorgarh Raj.

E-Mail: [1]manoj_kaushik6171@yahoo.com

DOI:euro.ijress.76309.77390

Abstract

The primary focus of my research paper is to assess the status of various ICT-related infrastructure in government schools across Haryana and evaluate the preparedness of subject teachers for its effective utilization. There is a noticeable decline in the academic performance and accomplishments of students with normal intelligence, particularly those attending government institutions. This decline can be attributed to several factors, including the insufficient availability of up-to-date infrastructure, inadequate maintenance, low levels of motivation among teachers and staff, and a lack of academic and financial support from parents.Upon closer examination of students encountering challenges in traditional and less engaging classrooms, it becomes evident that a new discipline of special education is necessary, accompanied by an improved learning environment. In such instances, there arises a need for a cost-effective and training-effective method of instruction. Recognizing the potential of computers not only as instructional tools for education and training but also as means to deliver tailored instructions that cater to individual needs at a relatively low cost.The study has furnished ample information about the availability and condition of ICT infrastructure in government schools throughout Haryana. This data is indispensable for the successful implementation of any new ICT-based interventions in the state.

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

Background

The Information and Communication Technology (ICT) at schools scheme was launched in December 2004, to build capacity of secondary students on ICT skills make them learn through computer aided learning processes. This scheme is a major catalyst to bridge the digital divide amongst students of various socio-economic and other geographical barriers. The scheme provides support to States/UTs to establish computer labs on sustainable basis. It also aims to set up smart schools in Kendriya Vidyalayas and Navodaya Vidyalayas which are pace setting institutions of the Government of India to act as "Technology Demonstrators" and lead in propagating ICT skills among students of neighbourhood schools.

Various studies have shown that efficient and appropriate use of ICT can raise educational quality to a large scale by fostering the environment to think critically. ICT is expected to expand access to education by making available teleconferencing classrooms, study materials, visual presentations and so on it also develops more creative solutions for the students and provides a platform for sharing their ideas visually. ICT also addresses the issues which are faced by the students in terms of availability of material and resources. Information and communication technologies (ICT) have become one of the fundamental building blocks of modern society. Many countries now regard the mastering of the basic skills and concepts of ICT as an inevitable part of the core of education. To this end, various new models of education are evolving in response to the new opportunities that are becoming available by integrating ICT and in particular Web-based technologies, into the teaching and learning environment. The effective integration of such applications however, depends to a large extent on teacher's familiarity and ability with the IT learning environment. Science teachers need to know exactly how ICT is used as a teaching and learning tool, for their own purposes and to help students to use them. This study is about the integration of ICT as a tool in the Physics/science classroom with the overall aim of increasing the effectiveness of teaching and improving students' learning. It outlines a programme of objectives and related activities for an ICT enhanced learning environment in Physics teaching and learning.

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

Introduction

In its policy of introducing IT in Education, the state is committed to introduce Computer Education in schools, both urban & rural, at appropriate levels to prepare the next generation to face the challenges thrown up by globalization of economy and establishment of information highways. Subject to availability of resources, the state endeavor to introduce Computers as aids in education at the elementary level also, for better appreciation of the subjects taught.

In light of this, the proposed study is an attempt to investigate-

- Availability of ICT infrastructure for subject teaching Haryana
- Readiness of subject teachers for ICT usage in teaching.

The objective of study is…

- to study the implementation of various initiatives under this scheme, in improving the teaching learning environment in schools.
- To study the use of ICT in teaching learning specifically science education.

Review of existing Literature:

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. Computers & Education, 59(2), 423-435.

This study explores the relationship between teachers' beliefs about technology and their actual integration of ICT in the classroom.

The paper concluded that there is a critical relationship between teachers' beliefs about technology and their technology integration practices. Teachers' attitudes, self-efficacy, and pedagogical beliefs all play a significant role in determining the extent to which they incorporate technology into their teaching. The study highlighted the importance of professional development and support in enhancing teachers' readiness and confidence in using technology for educational purposes.

Zhao, Y., Pugh, K., Sheldon, S., & Byers, J. L. (2002). Conditions for classroom technology innovations. Teachers College Record, 104(3), 482-515.

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

This study examines the conditions that support or hinder classroom technology innovations and provides insights into the readiness of teachers to embrace ICT.

The paper concluded that successful classroom technology innovations depend on a combination of factors, including teachers' beliefs and attitudes, access to resources, effective professional development, leadership and support, curricular integration, and collaborative learning communities. Addressing these conditions can lead to more successful and sustainable technology integration in education

Palaigeorgiou, G., Triantafyllakos, G., & Tsinakos, A. (2011). Evaluating teachers' intention to use web 2.0 technologies: An empirical investigation. Computers & Education, 58(4), 1193-1203.

Explores the intentions of teachers to use Web 2.0 technologies and factors affecting their readiness for incorporating these tools in education.

The paper concluded that teachers' intentions to use Web 2.0 technologies in their teaching practices are influenced by a combination of factors, including perceived ease of use, perceived usefulness, attitude toward use, subjective norms, and perceived behavioral control. Understanding these factors can help in designing effective strategies to promote the integration of Web 2.0 technologies in educational settings.

The gaps in existing studies:-

Certainly, here are a few research areas related to technology integration in education that these studies may not have covered comprehensively:

1. Long-term Impact of Technology Integration: While these studies investigate teachers' beliefs, intentions, and conditions for technology integration, they may not have focused on the long-term impact of technology integration on student learning outcomes and teacher professional development. Future research could delve into how sustained technology integration affects both teachers and students over time.

2. Equity and Accessibility: While some barriers to technology integration are mentioned, there is room for more research on the equity aspect. Examining how disparities in access to technology and internet resources affect both teachers' and students' experiences with

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

technology would be valuable.

3. Student Perspectives: These studies primarily focus on teacher beliefs and practices. Research could explore students' perspectives on technology integration, including how they perceive its impact on their learning experiences and outcomes.

4. Teacher Resistance and Change Management: Investigating teacher resistance to technology integration and effective change management strategies to overcome it is another important research area, as resistance can be a significant barrier.

5. Teacher Training and Professional Development Models: While teacher training and professional development are touched upon, further research could investigate effective models and strategies for preparing teachers to integrate technology effectively, especially in the rapidly changing technological landscape.

Relevance of Reviewed Material in present context of study: The Need and Significance:-

It is a qualitative study of all **3217 ICT@schools of Haryana**, with a specific focus on the use and integration of ICT by the school, teachers, administrators and students. It delves deep into the usage of ICT at all levels, by relevant stakeholders, and examines the teaching - learning processes in detail. It seeks to analyze the processes, analyze differentials, discover trends and make suggestions for schools and policy makers.

Nature of existing Research:

The proposed research study is a descriptive survey as it is intended to find the description of the state of affairs as it exists at present. there is no control over its variables. Here reporting will be as what has happened or what is happening. The methods of research to be utilized in this research are survey methods of all kinds including comparative and co relational methods

Possible problems and limitations of the research:

Limitation of the proposed study is that it is confined only to-

- State Haryana only.
- Govt. schools covered under ICT scheme (3217 schools).

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

- Proposed research, being a descriptive research, confidentiality may become the primary weakness. Often people are not so truthful as they feel the need to tell the researcher what they think the researcher wants to hear. This is particularly difficult during interviews.
- Participants may also refuse to provide answers to questions they view to be too personal. Furthermore, the idea that someone is watching can turn an observation into an event where people are acting how they perceive they should act.
- It also presents the possibility for error and subjectivity. For example, for a researcher while designing a questionnaire, questions may be predetermined and prescriptive.
- Furthermore, the study may contain errors, as the researcher may record what he/she wants to hear and ignore data that does not conform to the research project's hypothesis. Overcoming a research bias is an extreme difficulty for descriptive research practitioners and those who chose to use a descriptive research approach must be aware of their influence on the outcome of the research.

Data-Sources in the Proposed Research

The data is collected from both primary as well as secondary sources. In first phase secondary data from Education Deptt. Govt. of Haryana, Chandigarh, UTKARSH Society Panchkula SPD (SSA) Chandigarh, were collected in order to ascertain the implementation of the scheme in various schools. In second phase information through questionnaire and focus group discussions was collected from DEO, Principals, teachers, community members and students, as the primary data.

Research Design

In the proposed study the researcher must be able to define clearly what he wants to measure and must find adequate method for measuring it along-with a clear-cut definition of 'population he wants to study. Since the aim is to complete and accurate information, in the said study the procedure is to be used must be carefully planned. The research design must make enough provision for protection against bias and must maximize reliability with due concern for the

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

economic completion of the research study.

Research Design	**Proposed study (Descriptive)**
Overall Design	Rigid Design (design will make enough provision for protection against bias and must maximize reliability)
(i)Sampling Design (ii)Statistical design (iii)Observational design (iv)Operational Design	Probability sampling Design(Random sampling) Pre-planned design for analysis Structured or well thought out instruments for collection of data Advanced decision about operational procedures

- **Selection of parameters**

Quantitative parameters for the study include the no. of schools benefited by the state govt.'s ICT schemes, data of the supplied infrastructure including computer systems. Study also includes number of teachers in place having received training to handle the ICT equipment and the number of students benefited.

Qualitative parameters include the improvement in the classroom climate, bottlenecks, challenges faced by organization, teachers and the students during implementation and scope for the sustainability of the practice.

- **Sample**

The scheme at present is running in 3217 schools, covering all the 21 districts in the state. Schools of diverse specifications(Rural/urban /Boys/Girls/Co-Ed./high/Sr.Sec/ etc.)will be selected to cover the overall representation of schools of the state.

- **Tools**

The following tools were used for data collection

1)Questionnaires

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

2) Interview -schedule

3) Focus group discussions with

- State Project Coordinator(RMSA/SmSA)
- District Education officers/District Project Coordinators
- Principals
- Teachers
- Community members and
- Students.
- Since present study is a descriptive survey, the questionnaire will normally use nominal and ordinal scales because it concerns primarily with the particular characteristics of a specific population of subjects. It does not require the examination of dependent and independent variables.

FINDINGS

ICT and Teacher

Preference of Teaching Style

From all surveyed schools of Haryana, in 49% of schools, subject teacher reported that they prefer traditional blackboard style teaching, in 39% of schools, teachers prefer modern teaching style with use of ICT, in 9% schools, teachers are using both style of teaching, and remaining did not answer this question.

Kind of work done by Subject Teachers:

From all given responses by subject teachers, it can be seen that 34% of total responses reported that they use computers for reading/sending mails, 29% of total responses reported that they visit department website for official use, 27% of total responses are using computers for preparing subject related material for students and remaining 10% responses were not doing none of these above-mentioned works on computers.

Subject Teacher Ability in the following: -

Knowledge of Computer Basics

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

From all surveyed schools in Haryana, in 23% schools, subjectteachers reported that they have high level knowledge of computer basics, 45% have medium level knowledge of computer basics, 28% have low level of knowledge of computer basics and remaining 4% did not answer this question.

Ability to Prepare Subject Related Power Point Presentation

From all surveyed schools, only in 16% of schools, subject teachers reported that they have high level ability to prepare subject related power point presentation. 29% have medium level ability to prepare subject related power point presentation and 48% subject teachers reported that they have low level ability to prepare subject related power point presentation and remaining 7% did not answer this question.

Ability to search internet regarding subject content

From all surveyed schools, in 39% of schools, subject teachers reported that they have high level ability to search internet regarding subject content. 33% have medium level ability to search internet regarding subject content and 24% have low level ability to search internet regarding subject contents and remaining 4% did not answer this question.

Ability to use E-Contents/ICT in Classroom Teaching

From all surveyed schools, only in 19% of schools, subject teachers reported that they have high level ability to use E-content/ICT in classroom teaching. 27% have medium level ability to use E-content/ICT in classroom teaching and 48% have low level ability to use E-content/ICT in classroom teaching and remaining 6% did not answer this question.

Teaching Time is not enough to use ICT for teaching and learning purpose

From all surveyed schools, in 34% of schools, subject teachers agreed that teaching time is not enough to use ICT, 24% reported that sometimes teaching time is not enough to use ICT, however, 35% subject teachers disagreed that teaching time is not enough to use ICT and remaining 7% did not answer this question.

Subject Teachers feel the need to undergo training in computers

From all surveyed schools, in 75% of schools, subject teachers agreed that they need to undergo training in computers, 11% partially agreed that they need to undergo training in computers,

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

however, 10% subject teachers disagreed that they need to undergo training in computers and remaining 4% did not answer this question. Across districts, 96% subject teachers of Mahendergarh followed by 95% of Jhajjar agreed that they need to undergo training in computers.

ICT Supported teaching makes Learning more Effective

From all surveyed schools, in 85% of schools, subject teachers agreed that ICT supported teaching makes learning more effective, 8% partially agreed that ICT supported teaching makes learning more effective, however, 3% subject teachers disagreed that ICT supported teaching makes learning more effective and remaining 4% did not answer this question.

Use of ICT improves the quality of teaching

From all surveyed schools, in 87% of schools, subject teachers agreed that ICT improves the quality of teaching, 8% partially agreed that ICT improves the quality of teaching, however, 2% subject teachers disagreed that ICT improves the quality of teaching and remaining 3% did not answer this question.

Use of ICT enables the students' to be more active and engaging in the lesson

From all surveyed schools, in 81% of schools, subject teachers agreed that ICT enables the students' to be more active and engaging in the lesson, 13% partially agreed that ICT enables the students' to be more active and engaging in the lesson, however, 3% subject teachers disagreed that ICT enables the students' to be more active and engaging in the lesson and remaining 3% did not answer this question.

Teacher can still have an effective teaching without the use of ICT.

From all surveyed schools, in 43% of schools, subject teachers agreed that teacher can still have an effective teaching without the use of ICT, 22% partially agreed that teacher can still have an effective teaching without the use of ICT, however, 31% subject teachers disagreed that teacher can still have an effective teaching without the use of ICT and remaining 4% did not answer this question.

ICT allows Students to be more creative and imaginative

From all surveyed schools, in 84% of schools, subject teachers agreed that ICT allows students

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

to be more creative and imaginative, 9% partially agreed that ICT allows students to be more creative and imaginative, however, 2% subject teachers disagreed that ICT allows students to be more creative and imaginative and remaining 5% did not answer this question. Across districts, 96% of Mahendergarh, 95% of Mewat and Yamuna Nagar agreed that ICT allows students to be more creative and imaginative.

ICT Promotes active and engaging lesson for student's best learning experience

From all surveyed schools, in 78% of schools, subject teachers agreed that ICT promotes active and engaging lesson for student's best learning experience, 14% partially agreed that ICT promotes active and engaging lesson for student's best learning experience, however, 2% subject teachers disagreed that ICT promotes active and engaging lesson for student's best learning experience and remaining 5% did not answer this question. Across districts, 95% of Mewat followed by 90% of Bhiwani, Kaithal and Yamuna Nagar agreed that ICT promotes active and engaging lesson for student's best learning experience.

Implications of the study

1)The study showed status of ICT readiness of teachers in Govt. schools of Haryana

2)The study also helped in identification of the bottlenecks/challenges in implementing ICT initiatives in Govt. Schools of Haryana.

3)Study provided inputs for further improvement in the implementation of similar schemes.

References

1. Mukhopdhyay.M (1990) **Management of change in search of Indian Model**;NIEPA , New Delhi

2. Kennon,M.Smith,Barbara A Bicheleyer, John A. Monsm and Brian S. Horvitz(2007); **Integrating Computers in Schools:** A Review of Criticism pp 3-19:Educational Media and Technology Year book 2007;edited by Michael Orey, Maclendon,V.J,Branch R.M.;Vol.32 :Libraries Unlimited. USA

3. Jonasson,D.H.,Howland,J.Moore J. and Marra, R.M.(2003): **Learning to solve Problems with Technology :**A Constructivist Perspective. Upper Saddle River,NJ:Merrill Prentice Hall

International Journal of Research in Economics and Social Sciences(IJRESS)
Available online at: http://euroasiapub.org
Vol. 13 Issue 1, Jan- 2023
ISSN(o): 2249-7382 | Impact Factor: 8.018
(An open access scholarly, peer-reviewed, interdisciplinary, monthly, and fully refereed journal.)

4. Willem J. Pelgrum & Tjeerd Plomp(1991): **The Use of Computers in Education Worldwide:** Results from the IEA 'Computer in Education Survey in Educational Systems ;Pergamon Press

5. Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. Computers & Education, 59(2), 423-435.

6. Zhao, Y., Pugh, K., Sheldon, S., & Byers, J. L. (2002). Conditions for classroom technology innovations. Teachers College Record, 104(3), 482-515.

7. Palaigeorgiou, G., Triantafyllakos, G., & Tsinakos, A. (2011). Evaluating teachers' intention to use web 2.0 technologies: An empirical investigation. Computers & Education, 58(4), 1193-1203.