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REVIEW RESEARCH STUDIES CONDUCTED ON NROERs UNDER ICT@ SCHOOL SCHEME

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INTRODUCTION:

Technology redefines contemporary education and learning pattern. The introduction of Education Technology (ET) in 1972 during the IV-year plan, T.V., Radio to recognize the role and importance of ICT in education. After that SMART BOARDS and Mobile learning, make teaching and learning smoother and easier for the learner and the teachers. These initiations innovate the Information and Communication Technology (ICT) with the integration of learning and teaching. Although this information and communication technology has a vast umbrella, under which MHRD launch a scheme called ICT @school Scheme in December 2004 for secondary school students to provide ICT- a based learning environment and skills to interpret learning with technology.

ICT@School Scheme covered by the umbrella scheme of Rashtriya Madhymic Shiksha Abhiyan (RMSA) for Secondary education under a centrally sponsored scheme whose aim is to provide universal access to secondary education i.e., achieving universal retention at the 12th five-year plan by 2020. The Present form of Rashtriya Madhyamic Siksha Abhiyan is a merger of five central schemes i.e., RMSA, Vocational Education, Gender Education, Girls Hostels, and ICT@School Scheme. (MHRD, GOVT. OF INDIA - 2009)

In this scheme one of the major directions given to Enrich and develop the E-Content in various subjects for the student. The concept of repository initiates from the above suggestion which covers the diverse needs of a learner in the form of a big web portal. The open educational repository organizes semantic maps helpful for teachers and availing them shot for the critical assessment of the curriculum and their classroom aiding the construction of their unique learning themes. The resources were available digitally like audio, documents, interactive

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objects, video, and images in the form of concepts maps, flowcharts, etc. These type of digital resources helps teachers and students also to choose and access appropriate data, information, and knowledge according to their time and need. An apiece educational resource can be downloaded and commented upon too. The repository contains the content declare under Creative Commons License (cc-by-sa) (CIET- 2014).

Worldwide after the stroke of COVID-19, the demand for online education and resources increases for the continuation of educational needs. Today's students need education according to their needs and time. COVID -19 time innovates various teaching-learning patterns based on technology and the formation of repositories for availing the educational resources for learners. NCERT initiated the step to generate these kinds of repositories with the collaboration of HBCSE popularised with the name NROER.

In this review paper, we discussed the ICT advancements in teaching and learning and various studies that tested their usefulness for the same. With the collaboration of ICT, repositories also play a significant role in providing rich learning material for the learner online.

REVIEW OF LITERATURE:

OPEN EDUCATIONAL RESOURCES

This paper majorly relates the various reviews related literature associated with the study of open educational resecures (OERs) used in science education under Informational communication technology (ICT@ school scheme). This supports the existence of NROER and its importance in school education.

Moore(2002) studied "Lens on the Future: Open-Source Learning" which explains an environment of open resources, which will enhance the space of any lens engrossed the higher education future, elucidate the highly cooperative processes designed excellent tools and resources for information.

Albright, P. (2005) "Open educational resources, open content for higher education" study explains the result of OERs stimulating collaboration among individuals, establishments, foundations, and organizations concerned with filter and sharpening the open-content environment and pattern.

ICT AND EDUCATION

Sonja M. Mork (2005) ICT in Science Education. Exploring that ICT is introduced into classrooms, and the different digital learning, materials open the divergent learning styles which influence the science understanding under the selected field of study.

Mary E. Webb * (2005) in his study of "Affordances of ICT in science learning: implications for an integrated pedagogy". Study shows that ICT-rich environments already provide a range of affordances that have been shown to enable learning of science but integrating these affordances with other pedagogical innovations provides even greater potential for enhancement of students' learning.

Anja Balanskat, Roger Blamire, Stella Kefala (2006) "ICT Impact Report: A Review of ICT Impact" study in Schools of Europe. Research shows that evidence-informed government research which is global impact research is unequal. Research shows that confirmation-based government studies and comprehensive impact studies are evenly distributed throughout Europe. Here is a stark contrast to United Kingdom research in this area. In addition, currently two trends in identifying the impact on a substantial level. The United Kingdom the focused on ensuring an instrumental relationship between information and communication for greater learning outcomes in national tests (measurable system indicators) and lies in the perceptions of teachers and students of the Nordic impact approach.

The above research review also explains current education systems are undermining the impact of information and communication. Studies of the impact associated with experimentation often measure against traditional systems, where the potential of ICT cannot be fully utilized. Whereas some studies explain the direct impact of ICT on teaching and student learning activities could not be able to recognize a distinct ICT effect in other aspects of the teaching and learning environment.

In addition, this is becoming progressively tough to estimate students' reading as more and more conceptions learned about complexity in reading. Similar aspects should be considered in ICT learning outcomes as well as ICT teaching methods.

Maria del Mar Camacho Martí (2006) "Teacher Training in ICT-Based Learning Programs: Design and Implementation of the Online Teaching Model for English Language Teachers" The results provided by the analysis of the volume and quality of the data obtained will be disclosed mainly concerning those aspects of ICT related to teacher's training requirements and competencies of English language all requirements before participating different tutoring courses. Reports of teaching assist our formulation with additional accurate and detailed comprehensive vision for which dimension to use communication technology effectively integrate into their classroom teaching and the hurdles facing them in using information communication technology in their normal teaching practice. These particulars, and information gained from using the various teaching tools, visual space and study materials, and self-assessment stimulate to carry on with exploration and propose a specific application plan.

The researcher would like to point to the integration of visual studying communities with dynamic instructional agencies, disclosure the teacher matrix to increase continuous knowledge and training products and define the futuristic plan for teacher training. This is the strong demand for preparing teachers for these challenges of training and need of the hour.

Bulent CAVAS Pınar CAVAS Bahar KARAOGLAN Tarik KISLA (2009) "A study on the attitudes of science teachers about information technology and educational communication" researcher investigated the ICT experience of Turkish science teachers, and their attitudes regarding information and communication technology and relationship uniting attitudes of teachers with selected variables like computer ownership, gender, age, and computer literacy. In this study, nearly all science teachers demonstrated effective use of ICT and their attitude changes positively. Around the age of 35 young people,65% of Turkish science teachers show a constructive attitude. It would be expected for new teachers to be familiar with the advancement of ICT good training and information about the same. Even though a few problems with ICT in classrooms are unavailability of inadequate ICT resources, infrastructure, tools, the confidence level of teachers for effective use of ICT in teaching (Asan, 2003), and so on. The Turkey Science teachers had a positive attitude and had enough chance to travel to work.

Poposki Dimitar (2010) "Open Education Resources and Open Access to Higher Education in Macedonia" of government-established bodies included various educational policy planners,

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makers, institutional directors, subject teachers, government and non-government ICT cooperation, representatives of students and librarians of science library and information experts like pillars in the program to provide free education to all students, formal and informal.

Mohamed Kinaanath (2013) "Utilization of Information and Communication Technology in Teaching and Learning within the Inkatha University of Higher Developing Region: The Story of the Maldives". This study faced many problems trying to separate the availing information and its justification. Results have shown that the demographical factor is an important factor contributing to the assumption of ICT within SIDS education for a higher level.

A practical guide in higher education to the assumption of ICT was created and a continuous ICT development UNESCO model through the TOEG frame.

Jyoti Narayan Patra (2014) "The role of ICT in improving the quality of school education in India". The result shows that a high level of improvement is possible after the careful and systematic implementation of ICT in school education by various stakeholders.

Kulkarni, Vishnupanth Manisha (2014) The effect of different ICT teaching methods on academic achievement and science retention among high school students. Research findings show that computer-based learning activities are useful for students to improve their academic achievement at student and school levels. The findings of the research indicate the use of ICT possesses far-reaching consequences for the goal of mathematical teaching as outlined by Tahir (2001).

Instead, Showkat Ahmad's (2014) high school principals' and teachers' attitudes toward ICT and its impact in Uttar Pradesh and Jammu and Kashmir. The outcome of the study disclosed that the Indian government had taken several steps to integrate ICT into education into a national fund that was approved, released, and used, schools were authorized to introduce ICT in education but government and regional union areas. have differed in the use of the ICT system in schools.

Findings from this study showed that high school principals and subject teachers showed a constructive attitude towards the use of ICT.

Good Manju (2014) "ICT in Punjab State schools' experimental study". The Result Study shows that introducing ICT education as a compulsory subject helps all students learn about ICT and does not ignore the subject. The outcomes of the current research refer that ICT education has been compulsory in all schools from Grades 6th to 12th. The implementation of ICT education as a compulsory subject learned by the Punjab Province includes the results of the current research. In this way, all students will be able to study ICT as intended by the Province of Punjab.

ADB (2015) Open educational resources: to improve the provision of education and practice. As a result, the OER regulatory framework should include more than just community-based teaching and learning resources for free use and recycling by individuals; may also include innovative products for innovation and research.

Kaur, Rupinder (2015) The effectiveness of an environmental education system that uses ICT to influence ethics and environmental awareness among students of the high schools. Findings revealed students teaching Environmental Education Utilizing ICT have benefited greatly from environmental awareness.

Sunanda Saini's (2015) exploratory study of the use of ICT by teachers concerning their behaviour, and attitude towards IC competence and technology. Outcome Most of Haryana's selected high school teachers were found to be limited in their use of ICT and almost the same number of teachers at low and high levels of ICT use. The outcomes express the female's dominance and effectiveness in the use of ICT tools more than male teachers. Results state that there is no significant difference between gender and teacher behaviour. Current research based on ICT attitudes has shown that the majority of high school teachers' attitudes toward ICT were neutral.

Janet L. Rowell (2015) "Student Opinions: Teaching and Learning through open educational resources". Students' perceptions of the number of OERs may change as they gain experience in dealing with diversity.

Yahya Ibrahim Al Mofarreh (2016) Implementation of ICT policy in secondary schools in Saudi Arabia. Results show a positive view of the impacts of new technology Teachers should

be supported to develop a more positive perspective towards integrating ICT into classrooms and to feel more empowered toward ICT usage

Prince, G (2016) User perceptions and usage of open access Resources by the academic community in the higher education system. Result This study concludes that the majority of the users in the higher educational institutions have awareness about open access resources and their uses to fulfil their academic needs. More awareness and training programs would help to enhance their familiarity with the use of open access resources effectively. The benefits of open access include lower cost, great accessibility, and better prospects for the long-term preservation of scholarly works. The academic community and the whole society in general benefit from open access.

Janani Ganapathi (2017) the role of open educational resources (OERs) in primary education in developing nations: a case study of India. The results of this study indicate that presently, there is no known universal framework that addresses all these challenges to make OERs an efficient and effective tool for child literacy, which is indispensable for the attainment of primary education. This study provides a foundation for the development of a suitable model for quality OER provision at the primary education level. The research findings could help OER providers in gaining insights into the discussed common challenges and in addressing them to build a sustainable OER business model.

Thangamani D (2017) Status study on ICT education attitude of student teachers towards ICT and usage of available resources in colleges of education. Findings were reflected by the results that aided college students to use more ICT Tools as their college has the latest ICT appliances and these women students were imparted ICT education too led to the finding that female students had an overall high attitude towards ICT.

Kumar, Rajesh (2018) An evaluative study of Rashtriya Madhyamik Shiksha Abhiyan in Haryana. The study reveals that Rashtriya Madhyamik Shiksha Abhiyan was being implemented according to norms in secondary schools of Haryana.

CONCEPTUAL FRAMEWORK OF NROER:

National Repository of Open Educational Resources (NROER) is a collaborative platform, involving every one of us interested in children, teachers, and education. The Repository will

endeavor to bring together all digitally available resources for the school system - for all classes, for all subjects, and in various languages.

The Repository is an initiative of the Department of School Education and Literacy, Ministry of Human resources Development, Government of India, and the Central Institute of Educational Technology (CIET), National Council of Educational Research and Training (NCERT), New Delhi. On which a Meta studio, the platform hosting the Repository is an initiative of the Gnowledge Labs, developed by Homi Bhabha Centre for Science Education, Mumbai.

NROERs consist number of open education resources under the following categories:

- Themes (Open Educational Resources, mapped to school Curricular)
- E-Library (Homogenous collection of resources)
- e-Books (Online & blended Courses)
- Events (Community showcase& celebrations)
- Partner Showcase (Contribution from institutions & individuals)

CONCLUSION:

Open educational resources display their burning effects on teaching and learning. The availability of various platforms of learning manifests the demand of every kind of learner. Teachers and students are positively benefited from these resources available on the different online portals. MOOCs, SWYAM PRABHA, DTH CHANNELS NROERs, E- PATHSHALA, KISHOR MANCH, ICT CURRICULA for the school system are some digital platforms are the sparkling examples of open educational resources. Studies related to emerging trends of ICT for education& training effectively explain the role of multimedia and ICT resources. Lots of quality improvement is possible after careful & planned implementation of ICT in schools' education by various stallholders. Various studies proved the implementation of ICT policy in school education nationally and internationally. With the integration of ICT, open resources also play the most valuable contribution to the process of improving the open access to educational resources for directors, teachers, students & various stakeholders. Metanalysis of the above review research relates the effectiveness and usability of OERs and digital e-content in contemporary situations. Sujata Santosh's (2017) findings that support the major benefits of

the use of OER, indicated by the respondents, were increased interest in the subject, introduction to new ways of learning, and enhanced understanding of the subjects. It was analyzed studies that OERs act as a catalyst for stimulating collaboration among individuals, institutions, governments & organizations interested in refining and intensifying the environment of open content. Thus, from various research and ongoing projects it has been conclusively said that technology through a computer, internet, mobile, tablet, DTH channels, Pod-cast, Wi-Fi, television, radio become more & more useful in education. The available literature strongly pointed out the integration of ICT with various educational resources available for all. Thus, we can say that technology with its advancement is an effective tool for education for today and tomorrow.

Open learning resources create an environment of self-learning according to individual pace. The above review study helps us to identify the applicability, feasibility, and usability to open educational resources based on studies done worldwide. In the Indian context, the culture of open educational resources started in recent years.   So, the initiation of government-level NROER explains the learner's adaptability to digital learning & resources very effectively. NROER in government platforms through the expert channels also have authenticity for the learner & teachers. The review study also helps us to conclude the different ways & preparation of online modules, interactive sessions, and digital content according to the need of the learner.

REFERENCES:

ADB (2015) Open educational resources: enhancing education provision and practice. No.48. Retrieved from https://www.adb.org/sites/default/files/publication/176951/oer-resourcesenhancing-education.pdf

Albright, P. (2005) Open educational resources, open content for higher education. Final Forum Report. Paris: IIEP, UNESCO. Retrieved from http://www.unesco.org/iiep/virtualuniversity/media/forum/oer_forum_final_repor t.pdf

Adetimirin, A. E. (2012). ICT Literacy among undergraduates in Nigerian University. Education Information Technologies. 77(4), 381-397. Retrieved fromhttp://www.stat.wmich.edu/naranjo/articles/ educationsurveyl.pdf on June 09, 2014.

Best, J. W. and Kahn, J. V. (2012). Research in Education. New Delhi: PHI Learning Private Limited.

Güzel, Eyüp Bayram (2016) Teachers' and Students' Perspectives towards the Use of ICT in a Turkish School for Pupils with Hearing Impairment. University of Warwick Institute of Education September 2016

Hasibah Mohammad (2014) Understanding the impact of a Reflective Practice-Based Continuing Professional Development Programme on Kuwaiti' Primary Teacher's Integration of ICT. University of Exeter

Jyoti Narayan Patra (2014). The Role of ICT in improving the quality of school education in India. Paper

Mary E. Webb * (2005) Affordances of ICT in science learning: implications for an integrated pedagogy. https://doi.org/10.1080/09500690500038520 International Journal of Science Education

Mohamed Kinaanath(2013) The use of Information and Communication Technology in Teaching and Learning within Higher Education Sector of a Small Island Developing State: The Case of the Maldives. Victoria University of Wellington Wellington, New Zealand

Maria del Mar Camacho Martí (2006) Teacher Training In ICT-Based Learning Settings: Design And Implementation Of An On-Line Instructional Model For English Language Teachers. Universitat rovirai virgili ISBN: 978-84-690-7634 / dl: t.1394-2007

Poposki Dimitar (2010) Open Educational Resources Open Access in Higher Education in Macedonia.

Shyamal Majumdar (2006) Emerging trends in ICT for education and Training.

Sonja M. Mork (2005) ICT in Science Education. Exploring the Digital Learning Materials at viten.no. University of Oslo October 2005

Sampa Tshewang (2019) The use of ICT by science teachers in middle secondary science education in the Himalayan Kingdom of Bhutan.

Sujata Santosh (2017) A Study into Policy Status and Use of Open Education Resources in Distance Education and Training Institutes in India.

Yahya Ibrahim Al Mofarreh (2016) Implementation of ICT policy in secondary schools in Saudi Arabia.