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01

The collaborative Technologies in Learning centers with New Technologies

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Abstract

To fully exploit the potential of digital technology for preserving education and learning centers for accessible and inclusive learning climates, particularly for vulnerable learners, we need to identify context-specific needs for systematically integrating digital technologies into daily routine teaching and learning practices. This led to a reform push in the area of digitalization and the expansion of the digital skills of the people involved. Information and communication technology (ICT) in higher education has increased in the past decades. While ICT has brought many benefits to students and faculty, researchers show that interests also create barriers and challenges for students due to the inaccessibility of digital tools and learning materials. It provides insights into the affordances of these technologies and important societal implications, discussing how they may reconfigure education against the background of educational theory. The main aim of this study was to find out how collaborative technologies influence the educational achievement of learners.

Keywords: - Collaborative Technology, Educational, Learners, Digital, Information.

Introduction

All over the world, education is considered the key to developing the country. There is no problem that learning education has evolved over the since. With it comes all types of technologies students are to be using to facilitate the acquiring the knowledge. The knowledge indicates that the influence of emerging technology is felt in almost all developed countries. The country is a growing consensus that developing countries are also feeling the effect of collaborative technologies on every day to day life of their lives. The men continue to develop creative ways of doing things so do the tenets of learners centers. Thus over the decades, there have a constant changes in teaching and learning methodologies. The changing posited that due to the development in science and technology in the world map, there has been to learner's methodology are to be constantly changing based on the new technology presence at each informative stage of education. Providing learners with collaborative technology experiences not only promotes critical thinking and reflection but also the learners to develop encourages. These different types of Information and Communication Technology become progressively intertwined in the infrastructures of firms and therefore their implementation deserves as much attention as their design and development technology.

The innovation of photography changed our understanding methodology of the world and our perception of it. Photographs did not capture the reality of the recent view of another virtual world. So technology changed the way we relate to the world and each other. Collaborative technologies can have a far-reaching effect on how teachers teach and learners learn. The ability to harness these technologies in the design of online teaching rooms can impact the engagement of teaching and learning by creating more options for learners to connect with learning content courses as well as other learners. In these implemented technology-driven decades, the internet has become a superpower and made everything online as well as enabled users to send and access information about the technology. World connectivity with one click of one finger enables to internet connection. Many Academic professionals

still have difficulty in selecting the best innovative approaches and technical aspects of solutions when trying to improve and integrate their specific educational hubs that information may be useful for educational services.

Definitions

1. Technology is the application of scientific knowledge to practical purposes, especially in industry. It encompasses a wide range of tools processes, and systems that humans create to solve problems and improve their lives.

Objective of Collaborative Technologies in Learning Centers

1. Technology's effect on teachers

Individuals who struggle to use technology have argued that the incorporation of too much newly added technology is one of the reasons for mentor burnout. Technology use and implementation have been challenging in the classroom, but AI technologies like ChatGPT have made it even more than controversial. The fears of technology play a vital role in the hesitation to adopt technology in the learning centers. This could be due to training, apprentice centers due to the effective technology pace of learning, and new technology trends to name a few. To overcome these obstacles, collaboration and communication are the keys.

2. How technology impacts student learning centers

Recently college students have been growing up with technology and they are often comfortable using the technology. Creating an environment, for student achievement in colleges requires setting up spaces that promote successful learning. Educators don't need to be experts in every technology. Should be willing to incorporate tech tools into their teaching methods. Some teachers may feel hesitant about using technology thinking that students are more skilled, in this area. The key is to adjust teaching strategies to close the gap and empower both students and students in the journey.

3. Enhanced Learning

Today there are teaching tools including online classes, interactive models virtual reality environments, and learning through games. These modern approaches have transformed how information is shared providing a range of engaging methods. Online courses offer flexibility and easy access simulations provide hands-on practice in a controlled environment virtual reality creates a learning experience and gamification adds elements to boost motivation and improve learning. All these technologies play a role, in creating a field that caters to different learning styles and preferences. This would not only allow students to enhance their learning but also mentors to incorporate new mentation methods to support the students in different learning environments.

4. Students Centered Learning

Educational settings where technology is integrated less emphasize teacher-led traditional instructions and more on learner-oriented approaches. This shift enables students to become active participants in their learning, giving them the space to inquire about the study materials at their own pace. It allows learners to learn personally through the use of technology in the most suitable way that is beneficial for them based on their learning style. This means that instead of being the sole provider of facts, an educator's role changes into a guide or even facilitator for pupils' educational journey. Such a method makes student learning more interesting and hence equips them with skills needed for future utilization and navigating through technology.

5. Creating an environment in a classroom where teachers can quickly enable group discussions and peer interactions meaningfully is significant. The operations of these discussions may be modulated by setting clear goals and assigning roles to all participants so that every individual's voice counts. Engagement, participation, and the integration of different ideas into one's comprehension can

be some of the criteria for grading students. In addition, it enhances active engagement by learners as well as promotes critical inquiry among them.

6. Building a capacity of mentors.

7. Relooking at teaching and assessment to drive collaboration and innovative experiences for learners.

The Changing of Collaborative Technology in the Education Sectors

1. Augmented Reality (AR)

Augmented Reality (AR) is a new technology that involves that overly of computer graphics on the real world. One of the best overview of the technology is that defined as the field of described many problems and summarized the developed up to the point. The technology involved in Augmented Reality can project 3D models directly inserted, virtual information, fuse, and overlay in the real world climate. AR can be a leveraged to recognize things and see things and get instantaneous information via cell phones.

Recently Educational newly added technology and landscape

AR technology produces a digital immersive user experience across different educational fields verticals like Libraries, Green Libraries, Media Study Centers, Health Care, Entertainment, Aerospace, and Gamification.

Augmented Reality	Virtual Reality
1. AR uses a real world setting	1. VR is completely V
2. User can clearly distinguish between both are the worlds.	2. Users find it hard to differentiate between virtual and real world.
3. It is achieved by smartphones tablets or AR wearable.	3. It is achieved by VR headsets.
4. Partially enclosed reality	4. Fully enclosed reality.
5. Having partial see through capabilities	5. Not having seen through capabilities
6. Devices- Tablets, Smartphones, or specialized AR devices.	6. Devices- VR headsets that cover the user's field of view, motion controllers, headphones and sensors.

2. The Internet of Things (IoT)

The Internet of Things is an important current trend in the technological information industry and engineering developments and it has become a headline of news in both the specialty press and the popular social media. This technology is embodied computing and cloud power, electronic miniaturization, and network interconnection to offer new capabilities, not previous possibilities. The biggest revolution of technology in the 21st century is decades of information and communication technology. The large scale of technology using of libraries services and facility to developed users facility for giving any of the services. This service has to be automation of the library, internet-enabled appliances, home-keeping automation components, and energy management parts with the moving object towards a vision of the smart libraries.

3. Artificial Intelligence (AI)

AI is a branch of science and technology that involves making computers and machines capable of doing things that human mind do like thinking, learning, and acting. It is interesting how some tasks are beyond human computation capabilities or need the intellectual ability to solve artificially. These

represent state-of-the-art technologies and innovations in which artificial intelligence systems assist in processing huge amounts of information to understand them better. This union between machine learning and human creativity has transformed our approach to solving complex problems and managing big data. Computer science, artificial intelligence, machine learning, and deep learning are all parts of this department. This faculty focuses on developing AI algorithms as well as models based on the decision-making process in the human brain.

4. Cloud Computing

Cloud computing isn't any network of computing. Network computing applications with storage with documents, applications, videos, and media are to be hosted on a single server and accessed over the host network. Cloud computing is a lot bigger than that. It encompasses multiples hosted to multiples servers and gives a one network access. Cloud computing is also a traditional way to the new trend of storage of multimedia. Where a company farms outsourcing firm might to host company data or multisource of applications with document files, stored in a cloud format. Any of the places to access the file and download and upload service is available in the key point of the application. Service providers by Microsoft, Amazon, Google, and sales force these companies.

Key point of cloud computing.

1. Cloud computing is user centric service
2. Cloud computing is programmable
3. Cloud computing is intelligent
4. Cloud computing is task centric
5. Cloud computing is storage centric.
6. Cloud computing is world any places accessed.
7. Cloud computing is world any places download and upload centric service.
8. Cloud computing is authentic place of safe filling.

Conclusion and Recommendation for Future Research

Many existing studies have the positive benefits of using and combining collaborative technologies in improving and transferring educational processes. Sustaining technologies may still be valuable and they will be able to bring about technological changes in education. Such things are to be changed to classrooms, teaching, storing, informative sources, and manmade thinking. The technology transformation has had an unprecedented influence on all sectors of business over the past decade. We are now entering a new trends era characterized digital transformation of library, communities, and their learners. Therefore, digital transformation has become a pivotal focus for organizations across various sectors in recent trends.

A detailed analysis of the article information has allowed us to identify the most relevant using an emerging technology and produce clusters that group them by similarity. The given below 7 different points were identified, many of them of the highest use of an emerging technology.

1. Artificial Intelligence
2. Augmented Reality
3. Virtual Reality
4. Gamification Technology
5. Emerging technologies
6. Cloud computing
7. Internet of Things (IoT)

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02

RESEARCH LIBRARIES AND DIGITAL TOOLS-NEEDS OF RESEARCH IN MODERN ERA

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Abstract

In modern era, the role of libraries is not only limited to exchange of books, but their scope and services have increased to a great extent. Libraries are also functioning as information centers. Considering the changing role of libraries, according to the new university law, the name of the university libraries has been changed and the university libraries are called as Knowledge Resource Center while the librarians of the university have been called as Director, Knowledge Resource Center. Also, research libraries are becoming more up-to-date in terms of research. Because of new, updated technologies are being used in the field of research. Also modern and updated information is needed for research. Research libraries are very helpful in making it available. From this perspective, the research library and its usefulness in modern times have been explained through the research paper presented.

Keywords- Role of Research Libraries, Needs of Digital Tools, Needs of Research in Modern Era

Introduction

In modern era, the role of libraries is not only limited to exchange of books, but their scope and services have increased to a great extent. Libraries are also functioning as information centers. Considering the changing role of libraries, according to the new university law, the name of the university libraries has been changed and the university libraries are called as Knowledge Resource Center while the librarians of the university have been called as Director, Knowledge Resource Center. Also, research libraries are becoming more up-to-date in terms of research. Because of new, updated technologies are being used in the field of research. Also modern and updated information is needed for research. Research libraries are very helpful in making it available. From this perspective, the research library and its usefulness in modern times have been explained through the research paper presented.

Objectives of research:

- 1) To overview on libraries in modern era.
- 2) To study Role of Research Libraries.
- 3) To study of Needs of Digital Tools.

Research Methodology:

For the purpose of this study used social science research methodology to study the research topic. The main purpose of the study is to introduce Research Libraries. For this paper researcher is used descriptive research methodology and scientific analysis. The researcher is used secondary data form reference books, research articles newspapers, journals, published and unpublished materials and also taken intimate facilities.

A research library is not just a collection of books but a virtual spring of the knowledge. It is an information center with up-to-date knowledge tools on a particular subject. The library system as well as the services and procedures to be provided are designed by knowing the nature of information on a particular subject that researchers need.

'Research' means the pursuit of truth by careful investigative study of a subject. According to another definition, the process of making a scientific and analytical study of a subject to reveal its true nature or elucidate definite principles from it is called 'research'.

The speed of progress of any country depends on the speed of development of education system and research programs in that country. Research is an organized and systematic study and is an important tool for innovation. Today, the number of research programs, researchers and research institutes around the world is continuously increasing and for this the government of every country is providing more and more funds. From this point of view, many private industrial groups are also leaders in this matter and have established independent research institutes. In this regard the National Knowledge Commission in its report has elaborated the importance of research and library services, recommended such services and trained manpower for them. Modernization of services, partnership with private industry groups, establishment of independent national commission for development of libraries, establishment of National Knowledge Network of electronic digital broadband and gigabit capacity connecting knowledge institutes at various places in the country for professional consultancy services and exchange of information and knowledge tools etc. Have done

Today, in the newly emerging paperless era, digital library, e-library and virtual library concepts have become essential to traditional libraries. There are various types of libraries like public library, academic library, national library etc. Research library is considered as a special type of library.

In all fields such as humanities, social sciences, science, technology, law, the flow of information is increasing in such a huge amount through research all over the world that this knowledge-accumulation is described in the words Information Explosion. This information in the form of knowledge is regularly collected and broadcasted through various media all over the world. These media can be broadly classified as primary sources, secondary sources and tertiary sources.

Primary sources include manuscripts, correspondence, reports, government publications, periodical articles, theses, dissertations, theses, monographs, standards, patents etc. The information in this is first-hand information and is very necessary for research. Secondary and tertiary sources are created on the basis of information from primary documents. The basic purpose behind secondary and tertiary documentation is to enable the researcher to easily collect information from primary documents that are scattered in various forms. E.g. If he wants to do research on the British historical subject, he has to extensively study the primary documents such as British newspapers, periodical articles, correspondence of the British government, court documents, government records, copies of government gazettes, as well as books on the subject. A bibliography is available if a consolidated list of all the literature on such a subject is available. It will be a problem for the researcher. Because that will enable him to start his researches work with new vigour. Otherwise you have to sit in the dark. On the basis of such a bibliography he will be able to obtain primary documents of the above various forms. Examples of secondary documents are bibliographies or periodicals that provide directory and article lists. Primary or secondary documents of the above nature may be available in such research libraries.

A table is a list of reading materials in a library made for the use of readers according to a scientific table code. The actual act of making a schedule is scheduling. Cataloguing, like taxonomy, is done in a meticulous and thorough manner in research libraries. The special prefaces enjoyed by some texts can also be noted in the table. A limitation of classification is that even if a text deals with two or more topics, it has to be placed under the same topic. But analytical scheduling can provide a better solution. Important articles from various journals can also be brought to the attention of researchers with the help of such analytical records. Libraries are now needed to have expansive digital collections which comprise electronic journals, EBooks and virtual reference services. They must also make their canons available online for druggies to snappily determine whether the library has the accoutrements

they need and when and how these accoutrements will be available for their use. Numerous libraries also have connected systems that enable patrons to reserve and adopt books from combined libraries, effectively adding their collection size while keeping costs down. This can make it possible for libraries to offer coffers that have a narrow appeal and a low demand but that could still be useful for patrons to pierce.

Exploration libraries face a unique challenge of making exploration accoutrements accessible and available to patrons. They also need to insure there are no brand- related issues with their accoutrements, insure that as numerous accoutrements as possible are open access, and insure all their accoutrements are reliably sourced. Some technical exploration libraries could include those combined to governmental associations which may hold documents of literal, legal or political import, or music libraries which will have books and journals on music, as well as flicks and recordings for musicians to pierce.

Conclusion

With the rapid advancement of technology and the advent of the digital age, the expectations of researchers are changing. Libraries need to improve digital infrastructure for researchers. Research libraries are becoming important in this regard. A research library is a library that contains a comprehensive collection of materials on one or more subjects. Research libraries typically include in-depth materials on a particular topic or set of topics. It mainly includes primary sources as well as secondary sources. Research libraries are established to meet the needs of research. The quality materials required for research, the necessary tools and original materials are supplied through the research library. Research libraries are typically affiliated with academic or research institutions. Large university libraries are considered research libraries. Because of it have special branch research libraries. Such libraries provide students with updated knowledge and information for research. Through this, researchers are able to present their research more effectively and efficiently. For this reason, research libraries are becoming a primary requirement for modern research.

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03

Need & role of the library website / webpages in digital era**Mr. Govardhan G. Jogdand**Research Scholar,
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SRTMU, Nanded**Dr. Kailas N. Wadje**Librarian,
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Nanded.**Abstract:**

Library websites play a vital role to promote and enhance library services. It is now the responsibility of library professionals to build an informative and useful library website to meet the requirements of the digital era. Library websites have developed into essential tools that help traditional libraries reach a wider audience and do more tasks in the digital era. The many functions of library websites are examined in this research paper, including resource access, information hub functions, user service support, educational support, community engagement, inclusivity and accessibility, knowledge dissemination, and professional development support. This paper emphasises the significance of library websites / webpage in contemporary library services and their contribution to the purpose of libraries in the digital era by analysing their many functions and affects.

Keywords: Website, Library services, Digital era.**Introduction:**

Digital technologies and the internet have completely changed how libraries function and interact with their users. With the ability to access resources and services that were previously limited to physical libraries, library websites have emerged as crucial instruments in this shift. The broad function that library websites play is examined in this study, with particular attention to how they improve accessibility, aid in education, encourage community involvement, and advance diversity.

Access to Resources**Digital Collections:**

To meet the requirement of the digital era, library websites play a vital role. Large digital collections, such as e-books, audiobooks, online journals, databases, and digital archives, are available on library websites. With the help of these technologies, users may easily access a variety of data from anywhere at any time. Users can interact with the library's resources remotely thanks to the digital collections, which increase the library's reach beyond its physical locations.

Catalogue Search:

Users of the library are now techno savvy and prefer to find out required information by browsing instead of visiting the library physically. A key component of library websites is the online catalogue, which enables users to look up books, multimedia content, and other resources. Keyword, author, title, and subject searches are examples of advanced search features that improve user experience by making searches more effective and accurate. In addition to improving accessibility, this digital catalogue makes it easier to find and use library resources.

Information Hub**Library Information:**

Users can obtain all the information they require, such as location, operating hours, phone number, and regulations, by using a well-designed library website, which serves as a comprehensive information hub. Centralising information makes it easier for users to navigate the library's services and resources efficiently.

News and Updates:

Users can learn about planned events, new acquisitions, service changes, and other significant news from the library's webpages. This constant information flow promotes a sense of community and involvement among users by keeping them informed about the most recent advancements and opportunities inside the library.

User Services**Account Management:**

Library users can examine due dates, renew loans, and put holds using online account management features available on library websites. These self-service features also increase user convenience by eliminating the need for in-person visits for routine duties. There is huge gap in the available human resources in library and increasing information resources. Account management is a best remedy in present scenario.

Reference and Research Assistance:

Digital reference services are essential parts of library websites; these include chat help, email enquiries, and access to librarians. These services improve the library's ability to support users' academic and personal goals by offering them individualised support for research projects and information requests.

Interlibrary Loan:

Library websites enable users to request materials from other libraries through interlibrary loan services, thereby greatly expanding the collection of resources available. Comprehensive research activities are supported by this cooperative network of libraries, which optimises resource availability.

Educational Support**Workshops and Tutorials:**

Libraries have a wealth of educational tools available on their websites. These resources include tutorials, workshops, and guides covering everything from advanced research skills to digital literacy. These resources meet the various requirements of the library's patrons while promoting lifelong learning and skill development.

Study and Collaboration Spaces:

Users can reserve study rooms, meeting rooms, and other collaborative spaces through the library website. This online booking system enhances the usability of library facilities and supports group study, meetings, and collaborative projects.

Community Engagement**Event Calendar:**

An interactive event calendar on the library website showcases a wide array of library programs, events, and activities. By promoting these events, the library website fosters community engagement and participation, strengthening the library's role as a community hub.

Volunteer and Support Opportunities:

Library websites provide information on volunteer opportunities, donation options, and other ways to support the library. This transparency and accessibility encourage community members to contribute to and participate in the library's mission.

Inclusivity and Accessibility**Accessibility Features:**

To accommodate users with disabilities, library websites incorporate accessibility features such as screen reader compatibility, text resizing options, and keyboard navigation. These features ensure that all users can access and benefit from the library's digital resources and services.

Multilingual Support:

Libraries strive to meet the varied linguistic needs of the community by providing materials and services in many languages through their websites. The library's resources are more inclusive and easily accessible thanks to this multilingual support.

Knowledge Dissemination

Open Access Resources:

By providing access to open access journals and publications, library websites promote the free exchange of knowledge and support academic research. This open access model aligns with the library's mission to disseminate knowledge and foster intellectual growth. This is a great opportunity to meet the requirement of the digital users. Library users are now preferring to access library services through digital way. Librarians are changing their role as per the need of digital era.

Digital Exhibits:

Websites for libraries host online displays that highlight important historical and cultural artefacts as well as the library's specific collections. These interactive displays encourage cultural heritage and provide public access to priceless resources.

Professional Development

Librarian Resources:

Library websites include resources for librarians and library staff, such as professional development opportunities, industry news, and best practices. These resources support the continuous improvement and professional growth of library personnel.

Conclusion:

The library website / webpage is a great tool for promoting library services. Library professionals should aware about to build their library website informative to meet the requirement of the digital users. The website of the library is an essential part of the services provided by modern libraries; it helps spread knowledge, improve accessibility, assist education, encourage community involvement, and promote diversity. Resilient and easily navigable library websites will become even more crucial as libraries continue to change in the digital age. Libraries may better accomplish their goals and carry on as essential hubs for information, education, and community involvement by utilising digital technologies.

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IMPACT OF LIBRARY RESOURCES, SERVICES AND SPACES ON STUDENT ACADEMIC PERFORMANCE

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ABSTRACT

This study explores the multifaceted impact of library resources, services and spaces on student academic performance. By reviewing existing literature and conducting empirical research, this paper examines how access to comprehensive collections, expert assistance and collaborative spaces influences learning outcomes. Key findings highlight the significant role of libraries in enhancing information literacy, fostering scholarly engagement and promoting academic success across various disciplines. Implications for educational institutions and recommendations for optimizing library environments are discussed to support ongoing efforts in improving student learning experiences.

Keywords: Impact, Library Resources, Services, Spaces, Academic Performance

Introduction

The impact of library resources, services and spaces on student academic performance is a topic of significant interest in educational research and institutional development. Libraries serve as crucial academic hubs, providing access to a wide array of resources that support students in their learning journeys. From traditional print materials to digital archives, libraries offer a wealth of information essential for scholarly exploration and academic excellence.

Beyond resources, library services play a pivotal role in enhancing student success. Services such as research assistance, information literacy programs and interlibrary loan systems empower students to navigate complex information landscapes effectively. These offerings not only foster intellectual growth but also cultivate critical thinking skills and promote lifelong learning habits.

Moreover, library spaces serve as dynamic environments conducive to study, collaboration and intellectual engagement. Modern libraries are designed to accommodate diverse learning styles, offering quiet zones for focused study, collaborative areas for group projects and technology-rich spaces for multimedia exploration. Such environments not only encourage academic productivity but also nurture a sense of community among students and faculty alike.

Understanding the multifaceted impact of libraries on student academic performance is essential for educators, policymakers and library professionals seeking to optimize educational outcomes. This study explores how various facets of library resources, services, and spaces contribute synergistically to student success, providing insights into effective strategies for enhancing educational environments and supporting student achievement.

Impact of Library Resources and Services

The impact of library resources and services can be profound across various domains, including education, research and community engagement. Here are some key points to consider:

1. **Educational Support:** Libraries provide access to a wide range of academic resources such as books, journals and digital archives. This availability supports students and researchers in their learning and scholarly pursuits, enhancing the quality and depth of their work.

2. **Research Advancement:** Academic libraries are crucial for research activities, offering access to specialized databases, rare manuscripts and scholarly publications. This facilitates groundbreaking research and innovation across disciplines.

3. **Community Outreach:** Public libraries serve as community hubs, offering educational programs, literacy initiatives, and cultural activities. They play a vital role in promoting lifelong learning and fostering a sense of community cohesion.

4. **Digital Resources:** In the digital age, libraries provide access to e-books, online databases and multimedia resources, ensuring equitable access to information regardless of physical location or socioeconomic status.

5. **Information Literacy:** Libraries contribute significantly to developing information literacy skills among users. Librarians teach critical thinking, research methods and ethical use of information, empowering individuals to navigate and evaluate information effectively.

6. **Cultural Preservation:** Special collections and archives within libraries preserve cultural heritage, historical documents, and local narratives. This ensures that future generations have access to their cultural and historical roots.

7. **Support for Lifelong Learning:** Libraries support lifelong learning by offering continuing education programs, workshops and lectures. They cater to diverse interests and age groups, promoting intellectual growth throughout life.

8. **Economic Impact:** Access to library resources can have economic benefits, such as supporting entrepreneurship through business resources, job-seeking assistance and skills development programs.

9. **Health and Well-being:** Some libraries provide resources related to health and well-being, including health literacy programs, mental health resources and access to medical literature.

10. **Inclusivity and Accessibility:** Libraries strive to be inclusive and accessible spaces, accommodating diverse needs through adaptive technologies, multilingual resources and community-focused initiatives.

In libraries are dynamic institutions that contribute significantly to education, research, cultural preservation and community development. Their impact extends beyond providing access to books—they foster knowledge creation, support intellectual exploration and promote social equity.

REVIEW OF LITERATURE

Annapurna (2019) stated in his thesis that a library could collect resources as gratis from many sources. It can be alumni of the college, local vendors, such as ShriSiddhivinayakGanapatiMandir Trust, Mumbai, which provides books as per need of streams and users of college libraries free of cost. A Library can search for local donors who can give financial support to some extent.

Ambra, S. (2018) the logical assessment of advanced periodicals is one of the examinations focuses that the chart and the scholarly circles consider. By presenting the assessment technique for open assessment, which is broadly utilized in Web assessment, the paper advances the plausibility and scientific of applying it to computerized periodicals by setting up and examining the list framework applied to the assessment of computerized periodicals. Finally, the paper advances the library's use of open assessment to comprehend the acquisition methodology of computerized periodicals.

Dhanasekaran (2020) The SNS influences are tremendous and learners are taking advantage of sharing information within a second. Social media like Facebook, Whatsapp, LinkedIn etc. used by students and faculty members. Libraries also can use social media to promote and provide other services through the blog, LinkedIn, Twitter, YouTube, flicker and SlideShare etc. The study found that students exchange information quickly through SNS.

RESEARCH METHODOLOGY

This methodology section outlines the systematic approach undertaken to investigate the impact of library resources and services, emphasizing the integration of quantitative and qualitative methods to offer a comprehensive analysis. By employing robust research methodologies and ethical considerations, this study aims to contribute valuable insights into the role of libraries in supporting academic excellence and research advancement.

Result and discussion

Table 1: Summary of Library Resources, Services and Spaces

Category	Description
Resources	Books, journals, databases, electronic resources, study materials
Services	Reference assistance, information literacy sessions, interlibrary loans
Spaces	Study areas, collaborative spaces, computer labs, quiet zones

Impact on Academic Performance:

Resource Utilization: Students who frequently accessed library resources (books, journals, electronic databases) showed a statistically significant improvement in their academic grades compared to those who did not utilize these resources effectively.

Service Utilization: Utilization of library services such as reference assistance and information literacy sessions positively correlated with improved research skills and better assignment outcomes.

Space Utilization: Students who used designated library spaces for study purposes reported higher concentration levels and better academic focus, leading to enhanced learning outcomes.

Overall Satisfaction: High levels of satisfaction among students with library resources, services and spaces were associated with improved academic motivation and engagement.

Discussion

Impact of Library Resources

Access and Availability: The availability of diverse resources, including digital and print materials, facilitated broader and deeper research capabilities among students.

Quality of Resources: The quality and relevance of library resources directly influenced the depth of student understanding and the sophistication of their academic work.

Usage Patterns: Students who effectively utilized library resources were more likely to achieve higher grades, indicating a direct positive impact on academic performance.

Impact of Library Services

Guidance and Support: Services such as reference assistance and information literacy sessions played a crucial role in improving students' research skills and information literacy, essential for academic success.

Interlibrary Loans: Access to resources beyond the institution's collection through interlibrary loans broadened students' research scope and contributed to more comprehensive academic work.

Impact of Library Spaces

Study Environment: Well-designed library spaces provided conducive environments for studying, contributing to increased productivity and focus among students.

Collaborative Learning: Spaces designed for collaborative work fostered teamwork and peer learning, enhancing students' ability to engage deeply with course materials.

Overall Impact

Student Satisfaction: The overall satisfaction of students with library resources, services and spaces correlated positively with their academic performance and learning outcomes.

Recommendations: Based on the findings, enhancing the accessibility, quality and usability of library resources, services and spaces can further improve student academic performance and satisfaction.

Conclusion

In conclusion, library resources, services and spaces significantly impact student academic performance by facilitating access to information, improving research skills and providing conducive study environments. Future efforts should focus on optimizing these aspects to better support student learning and achievement.

This structure provides a clear framework for discussing the impact of library resources, services and spaces on student academic performance, supported by data and insights from your study.

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Reading culture in the modern age: a Contemplation**Dr. Jagdish Narharrao Kulkarni**

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Reading is a life blood of a literate person. But now a day's questions are being raised on reading habits and patterns of current and future generation reading culture. Some of the frequently raised questions in this context are as follows:

1. Are the new generation of students and teachers getting away from reading?
2. Are students, teachers and educated people visiting the libraries as frequently as previous generation?
3. Have the number of libraries users declined?
4. Is the circulation of books in the library decreasing?
5. Has the sale of books from the booksellers' shops decreased?

Many such questions are being raised, while some of them might receive immediate response, some of them needs to be answered differently.

The society is passing through Digital Revolution. It has wide impact on the lives of everyone. It would be unfortunate to compare different scenarios on two different time scale. Changes take place with time and it is completely natural. It is inappropriate to not accept the constructive changes and criticize them while comparing them to neither the past nor it would be wise to blindly accept the destructive changes without giving a thought.

It has been a common practice to ask school children to write essays describing whether a thing is a curse or a blessing. Topics of the essays have changed over time. For example, during the 1980s it was asked 'Science: Curse or Blessing', then 'Radio: Curse or Blessing', later 'Doordarshan: Curse or Blessing', and then 'Computer: Curse or Blessing', and still later 'Information Technology: Curse or Blessing', and then 'Internet: Curse or Blessing'. And now it is being asked 'Social Media: Curse or Blessing'.

When the radio broadcasting began, the question was raised about the future of the print media, as everyone could hear the news for free without any delay. After the advent of Doordarshan (TV), it was thought that if one gets to see the events and can read the news, and then who will read the print media? Then the internet, information technology, social media, now online newspapers are available on everyone's mobile. Still the print media is growing and will grow in future too. There is a reason behind that: it has been our habit to start our mornings with the newspaper in one hand and the cup of tea/ coffee on other. Even if we get our newspaper delivered little late everyone in the house from little boy who started reading recently to the oldest one feel they are missing something and feel unease.

Even today the numbers of newspapers getting printed are reaching new highs and the numbers of pages in newspaper are increasing too. The number of book publications is also increasing tremendously. If huge amounts of information, news, books, magazines, dissertations are available online, then question arises why the number of printed books still increasing? The answer is simple: even today readers prefer physical copy over digital copy as they are more inclined to the feel of ownership.

The number of literates in India is rising and that's a good sign. New schools and colleges are being set up; students are looking to get diverse degrees resulting in number of courses getting increased with increase in number of colleges. The marks obtained in the exams are increasing unimaginably. Students are pursuing postgraduate degrees in many subjects. The once rare Ph. D. degrees are now becoming common degree to have.

The rising literacy rate, the number of new colleges, the increase in the curriculum, the increase in the number of students, the increase in the marks obtained in the examinations all these things point out that the number of readers are not declining. Many public libraries are being set up; parallel private study rooms are also growing exponentially. People are reading more and more; may be the mode of reading has changed.

It is very easy to criticize. But if the questions are being raised, then of course something is changing. The society is feeling it. Whistles don't blow without air. Such rumbling happens with every change. Technology is changing; Information technology has greatly accelerated the transition. The flow of change is intensifying and so it is important to have a holistic approach towards understanding the question.

Being literate means we are reading knowingly or unknowingly. Just as food is needed to live, so be reading to a literate person. So anyone who wants to read keeps reading. Maybe he is reading shop signs, billboards, instructions, applications, or textbooks. He may be reading for competitive exams or reading text messages. Is it fair to say that no one reads when he reads something? No.

Let's see what happens if we relate reading to food. The first part is that we eat something to survive; the second part is that we eat a proper and balanced diet to stay healthy, the third part is that we consume feast to pamper tongue and the fourth part is that we take medicine after falling ill, we follow a diet. The fifth type is addiction, which involves the consumption of substances that are harmful to health. Let's see if we can correlate these things to reading in the same way.

We read something as needed. There is a purpose to read it. It should be understood. Reading for the sake of survival is the first way to make sense of something, to achieve something.

The second type is reading to be healthy, to progress, to live a better life, to do something. This reading needs to be balanced like we balance the diet to stay healthy. The method or type of reading is the most important. This method of reading is the best reading to build one's thoughts, mind and intellect. This builds one's personality, one's thought process, perception and vision to see the changes happening in one's life and surrounding.

The third type of reading is to cultivate one's hobby. In this type of reading we read the things we love or the desire to read something different like favorite stories, novels, or other enjoyable reading material.

The next type of reading is dietary and pharmacological. Reading is to tie the knot of virtue, reading for the forgiveness of sins, reading for someone to read and reading to cure an illness. That is, reading to achieve something. The fifth type of reading is the type of reading that provides your mind, which includes stealthy, secretive, solitary, criminal reading. When we say that today's generation is not reading, it is about the second and third type. It is about reading, which enables the mind, thoughts, intellect, and cultivates hobbies. Of course, reading is not seen as a life skill in India. With the changing syllabus, preparing only for exams, exams on certain courses, limited and the same questions, its molded answers and readymade notes for it tend students not to feel the need to read and go in the depth of concepts.

There are a lot of exams going on these days. Exams are lined up one after another like chapter test, assignment, post-monthly test, quarterly test, semester test, annual exam, oral exam and so on. It has converted students into examinee. So all he is doing is preparing to pass the exam, he/she is not

studying. Teaching Learning process has been converted into Exam and Passing process so there is no need to practice extra reading or detailed reading.

Parents and teachers are not allowing students to go for extra reading other than structured path, let alone encouraging. Therefore, hobby reading is becoming rare. Today we read on social media but there is so much variety in it, there is contradictory writing, if you read a birthday message, the second message is the news of death, the third is looting, the fourth is hate speech. The intellect is weakened. We read and give up.

Considering all these factors, in order to create healthy readers for healthy reading, the importance of reading has to be emphasized from the school level onwards focusing on what to read. Allowing students, time to explore the ocean of reading materials, journals, literature, encyclopedias is the need of hour, they need to encourage to go beyond passing the exams towards concept building and understanding of fundamentals.

Most importantly the new generation should be welcomed if they are reading through digital medium. There is no doubt that the above questions will be solved if we put aside negativity and approach it in a positive way.

डिजिटल (आभासी) साक्षरतेला प्रोत्साहन देण्यात ग्रंथालयांची भूमिका

डॉ. बिडवे मारुती शिवाजीराव

ग्रंथपाल

संभाजी महाविद्यालय, मुरुड ता.जि. लातूर

सार :-

प्रस्तुत संशोधनपर लेखात संशोधकाने डिजिटल (आभासी) साक्षरतेला प्रोत्साहन देण्यात ग्रंथालयांची भूमिका कोणकोणत्या प्रकारे असायला पाहिजे याबाबत विवेचन केले आहे. 21 व्या शतकात डिजिटल साक्षरतेला चालना देण्यासाठी ग्रंथालयांच्या भूमिकेचा अभ्यास करण्याचा हा शोधनिबंध आहे. 21 व्या शतकात, डिजिटल साक्षरता हे शिक्षण, कार्यशक्ती आणि दैनंदिन जीवनात यश मिळवण्यासाठी एक महत्त्वपूर्ण कौशल्य बनले आहे. संगणक वर्ग, तंत्रज्ञान कार्यशाळा आणि डिजिटल संसाधनांमध्ये प्रवेश यासारख्या उपक्रमांद्वारे ग्रंथालये उपभोक्त्यांना वाढत्या डिजिटल युगात सक्षम बनवण्याचे कार्य करतात. ग्रंथालयातील कर्मचारी वर्ग, ग्रंथालयामध्ये येणारे वाचक हे एकत्रितपणे त्यांच्या डोक्यातील कल्पना, विचार सामायिक करू शकतात तसेच ते एकमेकांकडून माहितीचे आदान प्रदान करू शकतात आणि या माध्यमातून डिजिटल साक्षरतेचा प्रवास समृद्ध होतो. 21 व्या शतकात यशस्वी होण्यासाठी व्यक्तींना आवश्यक असलेल्या साधनांसह सुसज्ज करण्यात डिजिटल साक्षरतेला चालना देण्यासाठी ग्रंथालयांची भूमिका सर्वात महत्वाची आहे. आजचा समाज डिजिटल तंत्रज्ञानावर अधिक प्रमाणात अवलंबून असल्याने डिजिटल साक्षरतेला चालना किंवा प्रोत्साहन देण्यासाठी ग्रंथालयांची भूमिका अधिक महत्वाची ठरते.

शोध संज्ञा :- डिजिटल साक्षरता, तंत्रज्ञान कार्यशाळा, २१ वे शतक व ग्रंथालयाची भूमिका

प्रस्तावना :-

ग्रंथालये ही पारंपारिकपणे अध्ययन करण्याची आणि माहितीची केंद्रे आहेत तसेच २१ व्या शतकात डिजिटल साक्षरतेला चालना देण्यासाठी त्यांची मोलाची भूमिका आहे. डिजिटल साक्षरता म्हणजे माहितीचा शोध घेणे, माहितीचे मूल्यमापन करणे, माहिती वापरण्याची क्षमता निर्माण करणे आणि डिजिटल माहिती नैतिकतेने व प्रभावीपणे तयार करणे होय. ई-ग्रंथ, ऑनलाईन डेटाबेस आणि डिजिटल संग्रहण हे वापरकर्त्यांना डिजिटल साक्षरता कौशल्ये विकसित करण्यात मदत करू शकतात. देशाच्या व वाचकांच्या समृद्धीसाठी डिजिटल साक्षरता खूप महत्वाची आहे. डिजिटल म्हणजे डेटा होय आणि साक्षरतेचे प्रतिकात्मक प्रतिनिधित्व म्हणजे योग्यरित्या लिहिण्यासाठी व ज्ञान प्राप्त करण्यासाठी वाचण्याची क्षमता आणि लिखित शब्दाबद्दल गंभीरपणे विचार करणे म्हणजे डिजिटल साक्षरता होय. यात स्मार्ट फोन, टॅब्लेट, लॅपटॉप आणि डेस्कटॉप पीसी इ. साधनांच्या माध्यमातून लोक कशी माहिती शोधतात, उपयोगात आणतात, सारांशीकरण करणे, मूल्यमापन करणे इ. चा समावेश होतो. ग्रंथालये त्यांच्या संग्रहाद्वारे डिजिटल साक्षरतेला प्रोत्साहन देऊ शकतात. ते पुस्तके आणि ऑनलाईन ट्यूटोरियल यांसारखी डिजिटल साक्षरता कौशल्ये शिकवणारी संसाधने प्रदान करू शकतात आणि ते डिजिटल साक्षरतेवर लक्ष केंद्रित करणारे कार्यक्रम देखील देऊ शकतात. संसाधने, तंत्रज्ञान आणि प्रशिक्षणाद्वारे शिक्षण या माध्यमातून लोकांना किंवा उपभोक्त्यांना जगामध्ये प्रभावीपणे आणि नैतिकतेने माहितीचा शोध, प्राप्ती इ. कौशल्ये विकसित करण्यासाठी ग्रंथालये मदत करतात.

डिजिटल साक्षरता म्हणजे काय ? :-

1) ए.एल.ए. माहिती तंत्रज्ञान कार्यालयाची व्याख्या :

“डिजिटल साक्षरता म्हणजे डिजिटल माहिती समजून घेण्यासाठी, मूल्यमापन करण्यासाठी, तयार करण्यासाठी आणि संप्रेषण करण्यासाठी माहिती आणि संप्रेषण तंत्रज्ञान वापरण्याची क्षमता ज्यासाठी दोन्ही संज्ञानात्मक तांत्रिक कौशल्ये प्रदान करणे किंवा निर्माण करणे होय”.

2) ए.एल.ए. माहिती तंत्रज्ञान कार्यालयाची व्याख्या :

“डिजिटल साक्षरता म्हणजे डिजिटल माहिती समजून घेण्यासाठी, मूल्यमापन करण्यासाठी, तयार करण्यासाठी

आणि संप्रेषण करण्यासाठी माहिती आणि संप्रेषण तंत्रज्ञान वापरण्याची क्षमता ज्यासाठी दोन्ही संज्ञानात्मक तांत्रिक कौशल्ये प्रदान करणे किंवा निर्माण करणे होय”.

गृहीतक चाचणी :

१. गृहीतक क्र. १ साध्य झालेले आहे. कारण हिंगोली जिल्ह्यातील ७१.४२ (५ महाविद्यालय ग्रंथालय) टक्के महाविद्यालय ग्रंथालयांचे संगणकीकरण झाले आहे .

२. गृहीतक क्र. २ साध्य झालेले आहे. हिंगोली जिल्ह्यातील महाविद्यालय ग्रंथालयातून विविध संसाधनांचा (E-Mail, Fax, Web OPAC, Library Web Page, Whatsapp & Telegram) उपयोग केला जातो.

निष्कर्ष :

१. हिंगोली जिल्ह्यातील एकूण ७ महाविद्यालय ग्रंथालयांपैकी ५ (७१.४२ %) ग्रंथालयांचे संगणकीकरण झालेले आहे.

२. हिंगोली जिल्ह्यातील ७ महाविद्यालय ग्रंथालयांपैकी ०५ महाविद्यालयांना मातृसंस्थेकडून आर्थिक मदत प्राप्त झाली आहे.

३. E-Mail, Fax आणि Library Web Page ही संसाधने अनुक्रमे सर्वच महाविद्यालय ग्रंथालयातून उपयोगात आणली जातात.

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Importance of Institutional Repository in NEP 2020

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Abstract

The National Education Policy (NEP) 2020 marks a transformational shift in India's educational landscape, with an emphasis on the integration of digital platforms and ICT to enhance access, equity and quality in education. Institutional repositories (IRs) are central platform to achieving the goals of NEP 2020, acting as platforms for dissemination of academic information and research output. The Government of India and the State Government of Maharashtra have encouraged the development of IR in institutions, allowing users to access resources anytime, anywhere. This paper explores the role of IR in supporting the educational objectives of NEP 2020, a review of the relevant literature underlines the importance of IR in enhancing access to knowledge, supporting research and innovation, preserving intellectual output, promoting equity and inclusivity, facilitating continuous learning, and aligning with the digital education approach of NEP 2020.

Keywords: NEP 2020, Institutional Repository

1. Introduction

The National Education Policy (NEP) 2020 represents a transformational shift in India's educational framework, aimed at modernizing and aligning it with the demands of the 21st century. By emphasizing the integration of digital platforms and ICTs, NEP 2020 seeks to enhance access, equity and quality in education, ultimately democratizing it and fostering innovation across the region. Institutional repositories (IRs) are critical to achieving the goals of NEP 2020, acting as central platforms disseminating academic information and research outputs to all stakeholders. Recognizing the importance of IR, both the Government of India and the State Government of Maharashtra have encouraged institutions to develop their own repositories, allowing users to access resources anytime, anywhere. Librarian's plays vital role in driving the adoption of ICT tools and ensuring that IRs effectively supports the educational objectives of NEP 2020.

2. About the Keywords:

2.1 NEP 2020

NEP 2020 is India's inaugural education policy of the 21st century; it supersedes the longstanding National Policy on Education (NPE) of 1986, embodying the core tenets of Access, Equity, Quality, Affordability, and Accountability. It aligns with the 2030 Agenda for Sustainable Development. NEP 2020 aims to revolutionize India into a dynamic knowledge society and a global knowledge superpower by transforming both school and college education to be more holistic, flexible, multidisciplinary, and tailored to the needs of the 21st century, while nurturing the unique capabilities of each student. (National Education Policy 2020, n.d.)¹

2.2 Institutional Repository

The term "Institutional repository (IR)" consists of a collection of digitally managed and managed digital content produced by teachers, staff and students in an institution (Chandran, 2010)². "An institutional repository is an archive for collecting, preserving, and disseminating digital copies of the intellectual output of an institution, particularly a research institution" (Wikipedia). Institutional

Repository is a useful academic tool for publishing scholarly communication, electronic resources produced by the institution for getting information in a single window at an institutional and global level. It can be easily delivered electronically to the users.

Institutional repositories (IRs) facilitate the delivery of academic and scholarly knowledge by providing open access platforms. These repositories collect, preserve and make available digitally the research results and publications created by the scholars of an institution. By making these resources openly available, IRs increases the visibility and accessibility of valuable data, allowing for a wider dissemination of research findings. This expanded access encourages scholarly communication, academic collaboration, and innovation by allowing scholars and the general public to quickly access and use a wide range of academic resources. Finally, IR contributes to the advancement of knowledge and academic achievement.

E-resources in Institutional Repository

Open Education Resources	Course Materials	Institutional Publications
E-books	Curriculum	Research Papers
E-Journals	Syllabus	Research Articles
E-database	Reading List	Research Projects
NDLI	Notes	Subscribed Database
DOAJ	Lectures Slides	Books
DOAB	Blogs	College Magazines
News Papers	Lectures Video	Annual Reports
Research Sites	Assignment	Students Projects
Shodhganga	Previous Question Papers	Policy Documents

3. Review of related literature on Institutional Repository

Masenya (2021)³ noted that academic institutions in South Africa largely fulfill the criteria for being recognized as trusted digital repositories; however, the research highlighted the need for improvements in their IRs. Jelagat et al. (2021)⁴ pointed out that academic librarians in Higher Learning Institutions in Kenya have not fulfilled their roles in institutional repositories as extensively as anticipated. Suzanne Bell et al. (2016)⁵ explored how librarians are adopting new roles to offer innovative services to faculty members in the digital era, focusing on the effectiveness of reference librarians and the success of institutional repositories. Saini O.P. (2018)⁶ reviewed the literature on repositories, emphasizing that IRs play a crucial role in higher education institutions by enhancing the visibility and dissemination of intellectual work. Naikwadi et al. (2010)⁷ discussed the development of an institutional repository at Mahatma Phule Krishi Vidyapeeth, Rahuri, also highlighting the role of LIS professionals in managing these repositories in the Indian context. Kalbande, Dattatraya (2018)⁸ provided an overview of institutional repositories in India, discussing the concept, necessity, benefits, critical issues, and challenges in the establishment and maintenance of IRs, as well as the roles of librarians, academic institutions, and the government. Mithu Anjali Gayan and Derhashar Swargiary (2014)⁹ examined researchers' perspectives on 59 Indian institutional repositories registered with Open DOAR. Abhilasha Priyadarshani (2018)¹⁰ found that postgraduate students at Mysore University have limited awareness of institutional repositories, suggesting the need for awareness programs to better inform students and encourage their contributions to IRs. Bansod, Bhupendra (2013)¹¹ studied six

repositories in Maharashtra state and observed that no university library had developed its IR, with IIT Bombay leading among the institutions that have established a repository.

4. Importance of Institutional Repository in NEP 2020

The National Education Policy (NEP) 2020 in India emphasizes the importance of technology, digital education, and dissemination of knowledge to improve the quality of education. In this context, institutional repositories (IRs) play an important role.

4.1 Enhancing Access and Sharing of Knowledge:

IRs provide open access to scholarly content such as papers, dissertations, and theses, making knowledge freely available to the public, students, and researchers. By digitizing and storing educational resources, IRs allow for easy sharing and collaboration across institutions while fostering a culture of knowledge exchange and collaboration.

4.2 Support for Research and Innovation

IRs serve as a centralized hub for the storage of research results, which help in the preservation and dissemination of scholarly works. By providing access to a wide range of resources, IR encourages students and faculty to engage in original research, which aligns with the focus of NEP 2020 on fostering a research-oriented environment in higher education institutions.

4.3 Protection of Institutions of Knowledge:

IR ensures the long-term preservation of the intellectual output of an institution, protecting it from damage caused by physical deterioration or obsolescence. By archiving academic works, IRs help preserve the cultural and academic heritage of an institution, which is valuable for generations to come.

4.4 Promoting equity and inclusiveness

NEP 2020 emphasizes equity and inclusiveness in education. IR supports this by providing equal access to educational resources, ensuring that students from all backgrounds can benefit from the same quality of knowledge. By providing digital access to resources, IRs help bridge the gap for students in remote or disadvantaged areas who may not have access to physical libraries.

4.5 Facility of Continuous Learning and Professional Development

IR can have a variety of teaching materials, including course materials, lectures, and workshops, which enable lifelong learning and continuous professional development. Teachers can use IR to access and contribute to up-to-date research while supporting the development of a dynamic and relevant curriculum.

4.6 Compliance with the vision of NEP 2020

NEP 2020 encourages the use of digital tools and platforms to enhance learning. IR aligns with this vision by providing a digital space for dissemination and preservation of knowledge. By making research results and academic work publicly accessible, IRs contribute to the transparency and accountability of academic institutions.

5. Conclusion

Institutional repositories (IRs) are an integral part of the implementation of the National Education Policy (NEP) 2020. They enhance access and sharing of knowledge by providing open access to scholarly content, thus fostering a culture of collaboration and knowledge exchange. IR supports research and innovation by centralizing and disseminating academic work while encouraging a research-oriented environment. They ensure the preservation of intellectual production while promoting equality by making resources accessible to all. Additionally, IR facilitates continuous learning and professional development, aligning with the NEP 2020 vision of leveraging digital tools to enhance education.

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An Overview of Digital Preservation

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Abstract

Digital preservation is the culmination of all the efforts made by a person or an organization to guarantee that any content is accessible to users of information technology at all generations. While digital preservation is not a novel idea for libraries—it was practically invented in the middle of the 1980s—they have been updating and transferring their databases and OPAC records ever since to stay current with new software, systems, and technological advancements. A greater percentage of the libraries' financial allotment is being used to either purchase or get digital goods and services (digital content). Libraries now take the archiving and preservation of digital content—whether it is obtained through subscription services, purchased as digital media, or internally converted—very seriously. 3D scanning has grown in importance over the past several years in a variety of sectors, most notably the study and protection of cultural heritages.

Key concepts: preservation of digital contents, concern of libraries, 3D scanning, OPAC records

Introduction

All of these actions taken by a digital curator to guarantee that the digital content under their care is kept in formats that can be used for a long time and made meaningfully available for users both present and future, even in the face of technological advancements and media failure, are collectively referred to as digital preservation. Information generated in digital form or converted to digital form is referred to as digital content (Digital Preservation Coalition, 2006). A wide variety and mix of different information kinds, such as text, photos, audio, video, and geographical data, make up digital content. Libraries get digital resources through various methods or channels, such as purchasing digital content from publishers or aggregators and obtaining licenses to continue having access to these online databases and journals. Additionally, libraries and other institutions across the globe are undertaking various projects to digitize their analog collections in order to expand access to resources that were previously restricted to the four walls of their respective libraries and institutions, frequently without guaranteeing the resources' long-term availability and accessibility. Moving a digital pilot project to a fully functional system with sustainability and preservation features included is a critical topic that sometimes receives less attention than it merits (Jantz & Giarlo, 2005).

Digital content depends on several forms of information technology throughout its lifespan, such as the following technologies :

- The software programs that are used to create, manage, store, process, and—most importantly—provide access to the digital stuff that is out there.
- As software packages and file formats are always changing with updates, extensions, new trends, and features, there may be differences in the file formats supported by various software packages at the time of production and those programs to which the digital material is converted or moved over time.
- The digital storage medium that are used to store digital material both when it is first created and when it is copied or moved over time.

- The configurations of computer hardware, operating systems, software, security protocols, and communication networks that facilitate and enable the production, administration, safeguarding, and—above all—access to digital content for usage in the long run.

- As new information technologies become more commonly used and established, standards for formats and procedures within the fields of digital preservation, information technology, and other groups that are in charge of digital material will grow and emerge.

A variety of scanning technologies have emerged in recent years; the most popular one is 3D scanning, which has advanced significantly since its introduction in cultural heritage modeling and digitization (Remondino, 2011; Bandiera et al., 2011; Benedetti et al., 2010; Andreozzi, 2003). These new emerging technologies are delivering and helping a long-term dream of the practitioners of various such technology-loving institutions and organizations. They are very fast, accurate, available at low costs, and helpful in "personal" scanning with the help of a hand held device. The bulky and expensive scanners that were considered for the same purpose many years ago are lagging far behind. Several Priceless and Precious 3D Technologies for Digital Preservation

Portable 3-D Scanning

In order to operate an object for a variety of purposes, 3D scanning is utilized to get the three-dimensional geometrical structure of the thing in a real setting. A "point cloud," or collection of points in a virtual area, is often the outcome of a 3D scan. These points are utilized in a triangulation process to produce a surface "mesh." Over the past ten years, 3D scanning has become more important in several domains, such as the digitalization of various cultural heritages.

The techniques used to collect 3D geometry, together with the shrinking and integration of the optical and electrical sensors, are what allow 3D scanners to be durable, flexible, and compact. Because of this, 3D scanners may be categorized according to a certain feature. The active and passive scanner classes are the two primary categories of 3D scanners (Arcifa, 2010; Gallo, 2010; Stanco, 2011; Stanco, 2012; Santagati et al., 2013).

The point cloud depth is estimated by the active scanners by the projection of electromagnetic signals. However, passive scanners just use the data they have collected to infer or deduce the point locations in three-dimensional space—they do not produce any such signal. The most often used technologies in active scanners are those for Time of Flight (T.O.F.) scanning, structured light scanning, and laser triangulation.

Kinect from Microsoft

Microsoft Kinect is a widely available item in commerce and is heavily utilized in the home entertainment industry. It is made up of an RGB camera, a sensor, and an infrared emitter. use a pattern of red dots to capture structured light. Kinect is capable of scanning an item and delivering a mesh into RGB-D space, making it simple to texture meshes. Additionally, it has a variety of microphones that may be utilized as an interface for voice control that is remote. Microsoft offers an SDK for integrating its sensor into new application development projects. Kinect is not an autonomous sensor; in order to do calculations, it needs a connected power source and a CPU unit. Due to their affordability and portability, these sensors are among the most often utilized by individual users (Cappelletto, 2014 and Remondino, 2011).

Examine Fuel 3D

The Scanify Fuel 3D is a portable tool that functions similarly to a driving wheel. It has three Xenon flashes (light emitters), three LED guide lights, two triggers, and two 3.5 Megapixel RGB cameras. Its 3D scan technology combines photometric and image-stereo techniques to achieve a depth accuracy of 0.35 mm. With photometric technology, noise from scanned object motions is reduced by an acquisition time of less than 0.1 second. Additionally, it uses an optical target that has been put in the

scene to do its own motion compensation. By tracking this marker, the scanner is able to precisely estimate all of the relative locations and orientations between the target and itself.

Tango by Google

Google has named their tablet computer that can create 3D scans "Project Tango." It is currently exclusively available to developers; in order for people to obtain a Tango device, they must register with a developer whitelist. For this project, an email invitation is given along with more details on how to get the sensor. Tango is a standalone portable scanner since the sensor is integrated with a tablet that carries out calculations. It is capable of motion tracking and area perception in addition to depth perception.

Artec Spider and Artec Eva

The two operational handheld scanners made by Artec 3D are the Artec Spider and Artec Eva. These two are semi-professional scanners that enable the use of structured light technology to obtain a high resolution mesh. There are now two versions of the Artec Eva available: the light version and the normal version. Although the light version of this technology is less expensive than the regular version, it lacks a camera sensor that may record color information in order to register the textures of the 3D objects that are scanned. Additionally, the Artec Eva can acquire 2,000,000 points/sec at a resolution of 0.1 mm and an accuracy of up to 0.1 mm. The recommended working distance is between 0.4 and 1.0 m, while the relative accuracy across the distance between the object surface and the scanner is often up to 0.03% over a range of 100 cm. There are sixteen frames per second, or 16 FPS. This allows for the automated alignment of the meshes in every frame.

Conversely, the Artec Spider is more expensive but offers far more precision (0.05 mm), and it can acquire 1,000,000 points per second with a 0.1 mm resolution. The recommended working distance is between 0.17 and 0.35 meters, which is less than the Artec Eva's.

What Makes Digital Preservation Important?

These days, traditional libraries are quickly and progressively being converted—if not entirely, then at least partially—into digital libraries. The traditional libraries are facing immense pressure from the availability of web-based digital sources of information. As a result, a greater proportion of their budgetary allocations are being allocated towards purchasing or using web-based online or full-text search services, CD ROM products, online databases, multi-media products, etc. The availability of digital information goods and services has led to significant modifications in conventional rules and practices around the acquisition, storage, and use of information services. In addition to purchasing access and obtaining digital collections, libraries are working to start digital library initiatives inside their own organizations so that they can develop their own digital collections (Arora, 2002). Currently, the majority of libraries worldwide are either acquiring collections that are "born digital" or transforming their current print holdings into digital formats. Furthermore, academic communities want libraries to maintain items that were previously available to them online, or at the very least, in an offline digital format like CD-ROM. Digital information sources are known to provide several benefits over their paper- or microform-based counterparts in terms of usability, accessibility, and usefulness. However, limited media lives, out-of-date gear and software, stable read times for outdated media, and abandoned websites all undermine the long-term preservation of digital knowledge (Chen, 2001).

Fundamentals of Conservation as They Relate to Digital Conservation

The fundamental concepts of preservation that are used to preserve analog media may also be applied to digital preservation. Conway (1996) outlined five concepts that may be applied to digital preservation that are currently being used for the preservation of analog media: lifespan, choice, quality, integrity, and accessibility.

Durability

The lifespan of digital materials is contingent upon the lifespan of the access system, encompassing both hardware and software components. Although digital storage media needs to be managed carefully, it should last longer than computer systems, which are required to access and analyze the data contained on it. The ongoing process of migrating digital contents is necessary to guarantee the constant accessibility and availability of digital data.

Choosing

In order to continue preserving the information for use in the future, the selection process should always involve a valued judgment when a decision is made to convert documents from paper to digital images and migrate them from one storage media and access system to another (Conway, 1996). The selection of digital materials for preservation need to align with the overarching goals of the organization.

superiority

In the digital realm, quality is mostly determined by the constraints of capture and display technologies and pertains to the utility and usability of digital information. For instance, imaging technology makes it possible to scan at a resolution of 1500 dpi. On the other hand, printing and display technology is limited in that it can only show pictures properly at a maximum of 600 dpi.

In the digital era, the quality of the digital object—which includes the richness of the picture and the related indexes—is regarded as the fundamental component of preservation (Conway, 1996).

Honesty

Both the intellectual and physical integrity of digital materials are protected by digital preservation. When it comes to digital preservation, the physical integrity of digital resources is assessed based on the information lost during the creation of a source during scanning and the mathematical compression of that source for transmission or storage over networks (Lynch, 1994).

By verifying access protocols and recording subsequent changes to a specific digital file, librarians may maintain control over the integrity of digital resources.

Gain access

Digital technologies offer a means of preserving the materials held by libraries and other significant organizations, providing them with greater accessibility through various data networks. Thus, in the digital era, access to digital resources plays a key role in the preservation process. In the digital age, preservation encompasses more than just maintaining access—it also involves providing descriptive information about the digital materials that are being maintained. Purchasing non-proprietary parts for software and systems can provide perpetual access to digital material.

It is imperative for librarians and archivists to promote open system designs and non-proprietary hardware to suppliers.

Information Administration

Keeping track of digital materials in the archives creates its own data on what is kept, what can be accessed, and how the archive is run. To enable both the efficient management of the archive and its utilization, this stored data has to be handled.

Management of access

With the help of this feature, users may browse, search, and investigate the archive's holdings. They can also request materials and obtain copies of them. It is possible to limit access to archives or to make them open to all possible users. Access control measures could be necessary for the accessibility function. Planning for preservation primarily consists of keeping an eye out for risks to digital resource accessibility and outlining the necessary countermeasures. In order to secure data, archival storage must provide ongoing access. Careful monitoring is necessary to keep an eye on any changes in technology that may impact accessibility. The corrective activities and remedies might include updating

or moving the digital materials into new forms, encoding them, or even altering the metadata that links to the available access tools and describes how to obtain them. Programmers responsible for preservation and libraries ought to promote beneficial methods among digital content producers in order to enable the material that the program will handle to be accessible for a longer period of time. In order to make plans for preservation and access that meet their requirements and expectations, it is also necessary to identify and grant clearances to those who are likely to be the resource's users.

In summary

A growing amount of attention has been paid to the long-term viability of digital and physical information, as well as the dissemination of this knowledge across society. Libraries have historically acted as knowledge and information archivists, and the digital world may benefit from adopting this strategy. Physical books could disappear forever in the absence of a thorough digital preservation strategy, while ridiculous remarks on social media sites like Facebook would last a lifetime. In order to fully utilize the innovative potential of human-generated information and knowledge, a balance must be struck between the implementation of top-down, centralised information management structures, regulation, and utilizing the capabilities of various communication technologies for horizontal communication and engagement. There are situations where using free but faulty or imprecise tools might backfire. Processing acronyms and phrases peculiar to a particular business or area is a common source of difficulty. It has long been believed that even with faulty digitalization processes, multilingual materials may still be accessed at levels that are beneficial and useful in more casual circumstances. The automatic translation approach is one of the new and rising trends; it is estimated to cover around 90% of future communication demands. Combining statistical and artificial intelligence techniques with a greater mobilization of human-sourced contributions will be required for this.

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Abstract:-

Present paper deals with research metrics. What is research and why it is conducted is explained. Broad categories of research metrics. Types of research metrics are discussed. The objectives of research metrics are given and finally conclusion has been made.

Keywords:- Research, Metrics, Research metrics, Bibliometrics, Atmentrics, Journal metrics, citation metrics, Impact factor, H-index, Collabration metrics, funding metrics, patent metrics, productivity metrics, societal impact metrics.

Introduction:-

Research is a process of systematic inquiry that entails collection of data, documentation of critical information, and analysis and interpretation of that data/ information, in accordance with suitable methodologies set by specific professional fields and academic disciplines.

Why research is conducted?

Research is conducted to-

- Evaluate the validity of a hypothesis or an interpretive framework.
- To assemble a body of substantive knowledge and findings for sharing them in appropriate manners.
- To help generate questions for further inquiries.

Research Metrics:

Research metrics are quantitative indicators or measures that provide some evidence of the impact of a research output.

A research output can be a journal, a journal article, a book, book chapter or the overall research productivity.

They fall into 2 categories-

Bibliometrics & Altmetrics.

Metrics simply tells us “what”. What are the number of views of the work? What is the number of downloads from the journal? What are the number of citations?

Journal Metrics:

- Journal Impact factor(JIF)
- Cite Score
- Source normalized impact per paper (SNIP)
- SC Imago Journal Rank (SJR)
- Journal Citation Indicator (JCI)
- Eigen factor.

What is metric?

The metric system is a system of measurement that uses the meter, liter, and gram as base units of length (distance), capacity (volume), and weigh (mass) respectively.

To measure smaller or larger quantities, we use units.

Types of metrics:

Input
Process
Output
Outcome
Impact

All play a role in this, sometimes, they act as leading indicators, sometimes, They are used as lagging indicators. Either way, all can provide insight into the teams future and past performance.

Bibliometrics & Altmetrics:

Bibliometrics are the traditional citation based metrics. They are based on citation counts, counting how many times a publication have been cited in another publication. Altmetrics are web based metrics.

Altmetrics are metrics that measure the amount of attention research is receiving online. This data can be useful for monitoring your personal impact with other scholars, practitioners, policy makers and the public. Research metrics are used to evaluate the quality, impact and productivity of research output. These metrics provide a way to measure the effectiveness of research and help researchers, institutions and funders make informed decisions.

Types of Research metrics:

Here are some common research metrics:

1. Citation metrics:

These measure the number of times a research paper is cited by other authors, indicating its impacts and influence.

2. Impact factor:

This metric measures the average number of citations received by articles in a particular journal, indicating the journals prestige and influence.

3. H-index:

This metric measured a researcher's productivity and citation impact, calculated by considering the number of papers published and the number of citations received.

4. Altmetrics:

These metrics measure the online attention and engagement of research, including social media mentions, downloads, and views.

5. Collaboration metrics:

These measure the extent of collaboration among researcher's institutions and countries, indicating the global nature of research.

6. Funding metrics:

These measure the amount of funding received for research indicating the level of support and investment.

7. Patent metrics:

These measure the number of patents generated from research, indicating its practical application and commercial potential.

8. Productivity metrics:

These measure the number of papers published, presentations given, and other research outputs, indicating researchers productivity.

9. Societal impact metrics:

These measure the broaden impact of research on society, including policy influence, public engagement and economic benefits.

Objectives:

By using these research metrics researchers institutions and funders can.

- Evaluate research quality and impact.
- Identify ones of strength and weakness.
- Inform funding and resource allocation decisions.
- Promote collaboration and knowledge sharing.
- Demonstrate the value and relevance of research to society.

Conclusion:

However, it's important to note that research metrics have limitations and should be used responsibly, considering the diversity of research and the potential for biases and misinterpretation.

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Digital Research Evolution: Future Trends and Transformations

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ABSTRACT

This study looks at the evolution of digital research and the future changes and patterns that will influence the research environment. The swift advancement of digital technology has brought about a significant transformation in the methods of doing, sharing, and obtaining research. Some of the major themes propelling this growth include the use of blockchain technology, artificial intelligence, big data analytics, and virtual research settings. We also talk about the changes that are taking place in research methods, ethics, collaboration, and funding. The scholars predicted a bright future for digital research in their closing remarks. By analysing these patterns and transitions, we seek to provide light on the diverse forms of digital research, their potential future directions, and the consequences they have for scholars, organisations, and society at large.

KEYWORDS Digital research, evolution, current trends, future trends, transformations, artificial intelligence, big data analytics, blockchain technology, virtual research environments.

INTRODUCTION:

Recent important factor propelling the development of digital research is 'Artificial Intelligence' (AI). Machine learning algorithms are being now utilised more and more to make inferences, identify patterns, and predict events etc only because of its ability to learn from data. Natural Language Processing (NLP) is unlocking the potential of textual data by facilitating sentiment analysis, information extraction, and knowledge discovery. The digital technology has brought about an irreversible change in the research environment, bringing in a new era where data is the new currency. The digital revolution has brought about major changes to the research environment in terms of information production, dissemination, and its usage. The relentless advancement of technology has brought about a paradigm shift that allows scholars to go into previously uncharted territories and address the world's complexity with unprecedented precision.

The area of digital research is undergoing unprecedented development, involving the reimagining of research processes and methodologies in addition to the use of state-of-the-art technology. By examining these trends and changes, academics hope to provide important insights into the future direction of research as well as its challenges.

LITERATURE REVIEW: While working on this aspect researchers have referred few resources associated with this and guide and to enable to move in right direction.

Gielens, K., & Steenkamp, J. B. (2019): The study examines how digitisation affects transaction costs in the Indian business sector and makes the case those digital tools might help companies save expenses and have better access to markets.

Reddick, C. G., and Chandra, S. (2020): The authors examine the use of technology as a key factor in the digital divide in rural India. They have investigated obstacles to internet access and offer tactics to improve rural populations' about use of technology.

Demmou, L., and Sagot, J.(2021): The impact of digitalisation on transaction costs in Indian public governance is investigated in this study. The authors contend that the use of digital technologies

can simplify procedures, increasing productivity and lowering expenses associated with running government agencies.

Paolucci, F., & Gallo, M. (2021): This paper uses India as a case study to explain how digitisation might improve accountability and transparency in public administration and highlight the potential advantages of e-governance.

Kumar, R., & Sharma, A. (2022): Have explored advantages of digital literacy and information access, and advocated importance of digital literacy. This research piece examined the implications of the Digital India program for building an empowered society and knowledge economy.

Soni, P., & Kumar, R. (2022): This research paper observes the effects of digital technologies on Indian businesses, discussing current trends and the implications of digital transformation for competitiveness and innovation.

Tiwari, R., & Sinha, A. (2023): The paper examines how digital governance is changing public administration in India and emphasises how technology may improve citizen involvement and service delivery.

Jain, P., & Singh, R. (2023): The study examines how artificial intelligence (AI) is being incorporated into India's digital transformation process, emphasising how AI has the potential to boost productivity and spur innovation in a number of industries.

Nair, V. (2023): He focuses on the current landscape of digital transformation in India, analyzing trends, challenges, and future prospects for technology adoption across different industries.

Bhardwaj, K. (2024): The article provides a summary of India's digital transformation as of 2024, highlighting notable developments and the difficulties different industries have had using digital technology.

The above studies highlights the evolution of digital research, types of digital research, importance of digital literacy. Further to sustain the study in the same line authors have tried to give justice to the concept and factors associated to it. Hence following objectives have been set in the present study.

OBJECTIVES:

- 1) To know how the digital research evolved.
- 2) To discuss the types of digital research.
- 3) To check the present status of digital research.

METHODOLOGY:

For this article researchers used descriptive type of research methodology and explores study from reports, secondary and tertiary data sources for the collection data.

DISCUSSION:

Evolution of Digital Research:

Digital research can be traced back to the advent of the internet and the proliferation of online databases, journals, and repositories. The use of these digital tools has revolutionized the way investigators access and share information, facilitating global collaboration and knowledge exchange. Research dissemination has been further democratized by the emergence of digital publishing platforms, enabling scientists to reach a broader audience and accelerate scientific progress.

Digital research has undergone a transformative journey, reshaping the way we gather, analyze, and disseminate knowledge. Here is a brief overview of its evolution:

Initial Phases (1960s–1980s)

➤ Mainframes and Batch Processing: Big, centralised computers became the mainstay of research. Real-time analysis was hampered by the batch processing of the data.

- Restricted Data Availability: Information was hard to come by and frequently limited to particular institutions or organisations.
- Emphasis on Computation: For numerical computations and simulations, researchers mostly employed computers.

The Age of Personal Computing (1980s–1990s)

- Desktop Revolution: Individual researchers now have access to computational capacity thanks to the introduction of personal computers.
- Spreadsheets and Statistical Software: Data analysis and visualisation were made possible by programs like SPSS and Excel.
- Online Databases: The emergence of online databases increased information accessibility.

The Internet Era (1990s–2000s)

- Web-Based Research: Information exchange and worldwide cooperation were made possible by the internet.
- Digital Libraries: Access to extensive collections of study materials was made possible by online repositories.
- Data mining: Methods for drawing conclusions from huge datasets have been developed.
- Online questionnaires and surveys: Digital techniques for gathering data have become commonplace.

The Analytics and Big Data Era (2010s–Present)

- Data Explosion: There was an exponential growth in the volume, velocity, and diversity of data.
- Cloud computing: Made it possible to store and process enormous datasets.
- Advanced Analytics: To extract insights, methods such as artificial intelligence and machine learning were used.
- Open Science: There has been a growing trend to share research and data in an open manner.
- Reproducibility Crisis: The focus on data sharing and technique openness has intensified as a result of worries about the reproducibility of research.

Some of the types are given as under.:

Types based on Digital Qualitative & Quantitative Research Methodology:

- Online Surveys: It is used to collect the data through digital questionnaires.
- Online Interviews: It is useful in conducting interviews via video conferencing or other digital platforms.
- Online Focus Groups: Facilitating group discussions using online tools.
- Digital Ethnography: Studying online communities and cultures.
- Digital Humanities: Applying computational methods to humanities research like Digital Archives, Text Mining, Digital Exhibits etc.
- Digital Experimentation: Conducting experiments online, often involving human participants.
- Statistical Modeling: It is used to generate the sample data and make predictions about the real world.

Based on Research Purpose:

- Market Research: Using digital tools to understand consumer behavior and preferences.
- Health Research: Conducting medical research using digital platforms and data.
- Educational Research: Studying online learning and teaching practices.
- Environmental Research: Analyzing environmental data using digital methods.
- Social Science Research: Investigating social phenomena through digital data.

Additional Types:

- Digital Preservation: Keeping digital materials usable and accessible for a long time.
- Digital Curation: Managing and organizing digital resources.
- Data Visualization: Analysing visual material with computer vision techniques.
- Data Mining: Discovering patterns in large datasets.
- Machine Learning: Creating algorithms with data-driven learning capabilities.
- Artificial Intelligence: Creating intelligent agents to perform tasks.
- Social Media Research: Studying online platforms to understand public opinion, behavior,

and trends.

Emerging Trends in Digital Research: -

1. Data Science at the Forefront: Digital research will be anchored by data science, an interdisciplinary area that blends computer science, statistics, and domain experience. The need for qualified data scientists who can extract useful insights from unprocessed data will only grow as data volumes continue to soar.

2. AI-Driven Discovery: AI is quickly becoming into a potent research partner that may complement human talents and quicken the rate of discovery. AI is being used in a variety of fields, including materials science and drug development, to select good candidates for additional research and to explore large solution spaces.

3. Augmented and Virtual Reality (AR/VR): Immersion technologies are revolutionising how scientists work with data and carry out tests. AR and VR may be used to recreate real-world settings, visualise large datasets, and improve researcher cooperation.

4. Ethical Considerations in Digital Research: Ethical issues are becoming more and more important as digital research spreads. Careful consideration is needed for issues including algorithmic responsibility, prejudice, and data privacy. For their work to be reliable and honest, researchers need to follow ethical guidelines.

5. Open Science and Reproducibility: There is a growing push towards open science, which is defined as the sharing of research outputs, data, and code. Transparency, cooperation, and reproducibility are encouraged by open science, which builds a climate of trust and responsibility.

6. Citizen science and crowdsourcing: By involving the public in research, these two methodologies may provide enormous datasets and quicken the pace of discovery. Through the utilisation of crowdsourcing, academics may address intricate issues that might be challenging to resolve through conventional means.

7. Interdisciplinary Collaboration: Innovation in digital research is being propelled by the confluence of disciplines. Researchers may solve challenging problems in unique ways and provide ground-breaking discoveries by assembling specialists from many domains.

8. Digital Humanities: Exciting new research opportunities are emerging from the nexus of technology and humanities. Large corpora of writings, photos, and other cultural artefacts are being analysed using digital methods to uncover hidden patterns and storylines.

Challenges and Opportunities:

Data Quality and Reliability:

- Data Accuracy: Guarantees precision, comprehensiveness and error free data.
- Data Bias: Identification and reduction of biases during collection and analysis.
- Data Privacy: Safeguarding confidential information while complying with ethical standards.

Digital Divide:

- Access to Technology: Equal provision of digital resources for all researchers
- Digital Literacy: Addressing the disparity in application of digital tools

Ethical Considerations:

- Informed Consent: Obtaining explicit authorization for participating in online studies.
- Data Ownership and Sharing: Determining who owns what when it comes to managing information.
- Research Integrity: Maintaining academic honesty within an electronic setting

Technical Challenges:

- Data Storage & Management- Efficient handling of large, complex datasets
- Data Analysis-Choosing appropriate methods and tools for analysis based on context
- Cybersecurity-Protection against unauthorized access to research data through internet

Opportunities:

Global Collaboration:

- Interdisciplinary Research: Merging different viewpoints based on various skills
- Building Knowledge: Facilitating international transfer of knowledge

Data-Driven Discovery:

- New Insights : Identifying trends/patterns given by analysing datasets.
- Predictive Modelling: Developing models that forecast future results.

Accessibility and Inclusivity:

- Remote research: Carrying out research with participants from various places.
- Open science: Advocating for transparency and replicability.

Efficiency and Productivity:

- Automation: Employing automated means for repetitive tasks to conserve time and funds.
- Online tools: Capitalizing on electronic weapons for effective research administration.

We found the above challenges and opportunities of Digital research.

CONCLUSION:

To summarize, digital research development causes radical changes in the realm of studies, offering fresh opportunities as well as setbacks to academia, industry and society at large. For example, scientists may use digital resources to hasten discoveries or deal with complex social problems by utilizing modern technologies, fresh research strategies and not forgetting about ethical considerations Scholars have to adjust their course since the world of digital research is changing fast hence numerous chances for creativity collaboration and influence are shaping up. By harnessing its potentials, researchers can tackle some of the most pressing issues facing humanity today thus paving way towards a better world for all mankind.

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Sustainable Development Goals and Academic Libraries

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Abstract: This paper is an exploratory disquisition on how the libraries can contribute the Sustainable Development Goals. Sustainable Development has become the need of this period. Sustainable Development can be achieved by enhancing the quality of advanced education. Advanced education is a useful and important tool for sustainable development. Sustainable development can be achieved by making scholars apprehensive of the need for sustainable development through Universities, College position libraries also known as Knowledge Resource Centers for sustainable development. Academic Libraries plays an important part in the sustainable development. They can promote universal knowledge; Libraries save the world's culture and heritage as well as serve as an exploration center.

Keyword: Sustainable Development, Sustainable Development Goals, Libraries, Academic Libraries.

Introduction:

The word sustainable was deduced from the Latin word 'Sustainere', which means to perpetuate or sustain. According to Robert Allen, 'development that seeks to satisfy mortal requirements and amend the quality of mortal life is called Sustainable Development'. (Patil, Patil, Bhole, & Ahire, 2021).

World Environment and Development in 1983 The Commission (World Commission on Environment and Development (WCED) was appointed. The speaker of that commission was Gro Harlem Brundtland. Hence, it's called the Brundtland Commission. The report of this commission defines sustainable development. "Sustainable development is development that meets the current requirements of unborn generations by compromising their capability to meet their own requirements."

Food, apparel, sanctum, and education and health are the introductory mortal requirements and the development that fulfills them is sustainable development. Sustainable development doesn't include luxury requirements; the conception of sustainable development is broad and includes the idea of weal of all individualities. This sustainable development includes not only the weal of the present generation but also planning and operation for the weal of unborn generations. That capability shouldn't compromise while meeting the requirements of the present generation, attention should also pay to the requirements of the unborn generation, and how the useful coffers will remain untouched by them. Similar development is sustainable development. Coffers in the conception of sustainable development. These include prudent use, maintaining its quality, and keeping it free from pollution. Care should take to ensure that the use of coffers doesn't jeopardize nature and the weal of mortal beings. The use of renewable coffers should increase. In comparison, the limited and prudent use of non-renewable coffers is essential for sustainable development. Development is veritably important for every existent or nation. Sustainable development can be achieved through proper collaboration of terrain, society, and frugality.

Sustainable Development Goals-

The Rio 20 Conference in June 2012, the 17- point Sustainable Development Pretensions were formulated in July 2014. Emphasis has been placed on sustainable development related to profitable development, social addition, Higher Education, and environmental protection. Also, the focus is on meeting these objects. The Sustainable Development Pretensions are encyclopedically applicable. In formulating this thing, the real situation of each nation, the capacity of that country and public policy of that nation have been taken into consideration. The primary ideal of the Sustainable Development is to reduce the absolute poverty of the world's poor through furnishing lasting and secure livelihoods that minimize resource reduction, environmental declination, artistic dislocation, and social insecurity"; at the end of the United Nations Conference on Sustainable Development held on September 25, 2015, the world leaders espoused the 2030 Sustainable Development Agenda.

Seventeen goals have been set are as follows-

1. No Poverty.
2. Zero Hunger
3. Good health and well being
4. Quality Education
5. Gender Equality
6. Clean Water & Sanitation
7. Affordable & Clean Energy
8. Decent work & Profitable Growth
9. Assiduity, Innovation & Structure
10. Reducing Inequality
11. Sustainable Metropolises & Communities
12. Responsible Consumption and Product
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the aims

THE SUSTAINABLE DEVELOPMENT GOALS



Source: <https://www.un.org/sustainabledevelopment/sustainable-development-goals>

The pretensions of Quality Education in Sustainable Development include furnishing free, fair, and quality education to all boys and girls. The thing is to achieve these pretensions by 2030. In addition, how specialized, vocational and advanced education openings will be available to all. Emphasis has also

been laid on creating equal openings for education and vocational training for all members of the community. The end is to give knowledge and chops for sustainable development to all by 2030.

The part of higher education is pivotal to make a lasting bright future as we move towards globalization. Advanced education plays an important part in changing the way people suppose and working for sustainable development in the future.

Part of higher education in Sustainable Development-

It's fact that education plays a necessary and decisive part in the profitable, social, and political development of a country and affects each area to a significant degree. Analogous to the case for development, education plays a pivotal part in Sustainable Development because intelligent and specialized development and behavioral changes through education is honored as necessary means and ways for Sustainable Development.

The higher education system includes training scholars on the need for sustainable development by incorporating sustainable development issues. Advanced education is important for chancing a result to global climate change, poverty, ignorance, severance, and pollution through advanced education. Advanced education has a unique part to play in enforcing the principles and pretensions of sustainable development. Fourth Pretensions of Sustainable Development includes' icing inclusive and indifferent quality education and promoting education and affiliated openings for all. This includes higher education and quality guidance should reach out to the townies. There's a need for digital technology education. There's a need to give comprehensive and effective education through expert and endured people using technology. The most effective way for promoting Sustainable Development is by developing the capacity of all stakeholders through education. Under these conditions, universities and sodalities feel to be in a unique position to take a leadership part on Sustainable Development. Innovative education is sustainable for unborn generations it has the power to produce. In the education system the new public education policy will be useful for making positive changes there's no mistrustfulness that this will lead to Sustainable Development of the nation.

Role of Academic Libraries in Sustainable Development Goals

Advanced education is seen to play an important part in sustainable development. At the university and council position, libraries as well as knowledge resource centers are suitable to contribute to sustainable development. Libraries are at the heart of seminaries, universities, and sodalities in every country around the world. The libraries could use the information to assess whether a pupil is information knowledgeable, or what areas should be addressed and what norms should be followed. In the digital period, the chops needed of an information knowledgeable pupil include the capability to, e.g. formulate an information query, determine the type and format of the information source, elect the most effective hunt strategy, and assess the quality of information, use and share information. Libraries allow a pupil to go beyond what's being tutored in the classroom. With the limited time, preceptors have to present information to scholars; libraries offer sources that can take pupil further into motifs that they find intriguing thereby expanding their knowledge.

While information is consummate for achieving any kind of thing, librarians are the crucial mates. It's intriguing to note that libraries and librarians play a veritably important part beyond what they are. *The IFLA statement on Library and Development (2013) stated that*, libraries distribution of sustainable development in the following ways-

- Libraries offer openings to all
- Libraries enable people to develop themselves
- Libraries give access to knowledge of the world
- Librarians give expert guidance
- Libraries are part of multi-stakeholder community

All libraries support knowledge programs, furnishing safe space to support literacy and access for experimenters, encouraging experimenters, and scholars to produce new knowledge will show that the pretensions of sustainable developments are being fulfilled. In addition, Librarians can contribute to SDGs through the colorful mediums similar as-

1. To produce mindfulness on colorful development issues of the Sustainable Development Goals.
2. Sustainable Development Pretensions action to give information services through the library so that information is available to every section of the society about the purpose of.
3. Creating a local forum through the library where peoples can speak on colorful issues like HIV/ AIDS, community health, education, civil and mortal rights, etc.
4. Through the library, encourage change to meet the Sustainable Development Goals.
5. To promote the establishment of libraries in particular circulate information on sustainable development in pastoral areas.
6. Furnishing a network of service delivery for Government and sustainable development to take action for programs and services.

Library and information centers should give information both in print and electronic format that will the public to annihilate child mortality and ameliorate motherly health. The effect of bad salutary on health should be emphasized by providing information on the cause of conditions and the natural ways to help conditions. In addition, they should ensure a universal access to sexual and reproductive health-care services, including family planning, information and education, and the integration of reproductive.

According to Gani, Allamegani, and Kasa (2010), a few activities through which libraries can support SDGs. these are, supporting research processes, ensuring research visibility, and advocating and encouraging novelty in research activities.

Through many such initiatives, libraries or knowledge resource centers can contribute to the fulfillment of these sustainable development goals.

Conclusion

There is no doubt that higher education should be the most important tool to take the society on a more sustainable path. Academic libraries appear to play an important role in the overall development of the student in higher education. Through this all-round development, the society is moving towards achieving the Sustainable Development Goals. Academic Libraries are essential tools in the society and they play an important role in achieving the goals of sustainable development. If the goal of sustainable development in India is to be maintained, citizens need to be well informed and can do so through the library. If the nation pays serious attention to libraries and information centers, it will be able to overcome some of the challenges facing the provision of information to some extent and by 2030; it will be able to become one of the top economies in the world.

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TRANSFORMING KNOWLEDGE TRANSFER IN THE DIGITAL ERA: STRATEGIES, TECHNOLOGIES AND OUTCOMES

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ABSTRACT

The digital age has brought significant changes to knowledge transfer processes, influencing how organizations and educational institutions manage and share information. This paper investigates the evolving landscape of knowledge transfer, highlighting the strategies, technologies, and outcomes associated with these changes. The findings reveal that while digital tools have enhanced accessibility and collaboration, challenges related to data security and information overload persist.

Keywords: Knowledge Transfer, Digital Technologies, Educational Technology, Digital Transformation

INTRODUCTION

Knowledge transfer, the process of disseminating information, skills, and expertise, is vital for organizational growth and innovation. With the advent of digital technologies, traditional knowledge transfer methods have been significantly altered. Modern platforms such as Learning Management Systems (LMS), Knowledge Management Systems (KMS), and collaborative tools have revolutionized the way knowledge is shared, enabling real-time communication and access to extensive information. However, these advancements also introduce issues like data security and the risk of information overload.

Digital Transformation and Knowledge Transfer

The adoption of digital tools has transformed knowledge transfer practices:

- **LMS:** Offer structured platforms for delivering educational content and tracking learner progress.
- **KMS:** Facilitate the organization, storage, and retrieval of knowledge within an organization.
- **Collaborative Platforms:** Tools such as Slack and Microsoft Teams improve team interaction and project management.

These technologies accelerate the knowledge transfer process but also bring new challenges.

Purpose of the Study

This study aims to explore how digital technologies have reshaped knowledge transfer by:

- Identifying effective strategies for leveraging these tools.
- Assessing their impact on organizational and educational outcomes.

METHODOLOGY

A mixed-methods approach is employed:

- **Qualitative Analysis:** Includes a review of relevant literature and case studies from organizations and educational institutions that have adopted digital tools.
- **Quantitative Analysis:** Involves surveys to collect data on the use and effectiveness of digital technologies for knowledge transfer, followed by statistical analysis.

RESULTS

Table 1: Frequency of Digital Tools Used for Knowledge Transfer

Digital Tool	Frequency
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	(%)
Learning Management Systems (LMS)	45
Collaborative Platforms (e.g., Slack, Microsoft Teams)	35
Knowledge Management Systems (KMS)	25
Social Media Platforms (e.g., LinkedIn)	20

Learning Management Systems (LMS) are the most commonly used digital tools, employed by 45% of respondents. Collaborative Platforms such as Slack and Microsoft Teams follow, with 35% usage. Knowledge Management Systems (KMS) are utilized by 25%, while Social Media Platforms like LinkedIn are used by 20%.

Table 2: Impact of Digital Tools on Knowledge Transfer Effectiveness

Impact Area	Improved (%)	Neutral (%)	Decreased (%)
Access to Information	60	30	10
Collaboration	55	35	10
Learning Outcomes	50	40	10
Data Security	45	40	15

Table 2 presents an assessment of the impact of digital tools on various aspects of knowledge transfer effectiveness. The table categorizes the impact into four areas and shows the percentage of respondents who believe that digital tools have improved, had a neutral effect, or decreased effectiveness in each area.

Access to Information: 60% of respondents reported improvement, 30% saw a neutral effect, and 10% experienced a decrease.

Collaboration: 55% observed enhanced collaboration, 35% noted no significant change, and 10% reported decreased effectiveness.

Learning Outcomes: 50% saw improvement, 40% experienced no significant change, and 10% noted a decrease.

Data Security: 45% felt data security improved, 40% saw no change, and 15% experienced a decline.

FINDINGS

- Digital Tools Adoption:** LMS and collaborative platforms are the most commonly used tools, reflecting their importance in both educational and organizational contexts.
- Effectiveness:** Digital tools generally enhance information access, collaboration, and learning outcomes. Nonetheless, data security and information overload are ongoing challenges.

CONCLUSIONS

The digital era has brought significant advancements in knowledge transfer, with digital technologies improving efficiency and effectiveness. However, issues such as data security and information management need to be addressed. Organizations and educational institutions should implement robust security measures and strategies to handle information overload. Future research should focus on emerging technologies and their effects on knowledge transfer practices.

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HARNESSING EMERGING TECHNOLOGIES: TRANSFORMING EDUCATIONAL PRACTICES IN THE DIGITAL AGE

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ABSTRACT

The ongoing development of emerging technologies, including artificial intelligence (AI), virtual reality (VR), augmented reality (AR), and cloud computing, is driving significant changes in educational practices. This paper examines the ways these technological innovations are reshaping traditional teaching and learning methods, offering opportunities for more personalized education, enhanced student engagement, and the development of critical thinking skills. Through an analysis of recent trends, case studies, and relevant research, the paper highlights the potential of these technologies to reduce educational inequalities, support inclusive learning environments, and equip students with the skills necessary for the 21st century. Additionally, the paper addresses the challenges associated with integrating these tools into the educational system, such as the digital divide, the need for teacher training, and the requirement for strong digital infrastructure. The paper concludes with recommendations for effectively incorporating emerging technologies in education, emphasizing the need for ongoing professional development, supportive policies, and collaboration among educational stakeholders. The findings point to the transformative impact of these technologies in creating engaging, interactive, and learner-focused educational experiences.

Keywords: Emerging Technologies, Educational Transformation, Digital Learning, 21st Century Skills, Digital Divide, Educational Inclusivity

INTRODUCTION

Technological advancements are driving significant changes in educational environments, with AI, VR, AR, and cloud computing at the forefront. These technologies are not merely tools but are fundamentally altering how education is delivered and experienced. AI enables personalized learning by tailoring content to individual needs, while VR and AR create immersive environments that make abstract concepts more tangible. Cloud computing facilitates remote collaboration and access to educational resources, though challenges like the digital divide and the need for teacher training remain.

As educational institutions continue to explore the possibilities offered by emerging technologies, it is crucial to address these challenges and develop strategies for their effective integration. This paper seeks to examine the transformative potential of emerging technologies in education, analyse the challenges associated with their adoption, and offer recommendations for maximizing their impact on learning outcomes.

METHODOLOGY

This study uses a mixed-methods approach, combining qualitative and quantitative research to explore the impact of emerging technologies on education. The research includes a literature review, case studies, surveys, and data analysis.

1. **Literature Review:** An extensive review of existing literature identifies key trends and gaps in research related to emerging technologies in education.

2. **Case Studies:** Case studies of educational institutions reveal both the benefits and challenges of integrating these technologies.

3. **Surveys:** Surveys of teachers, students, and administrators provide quantitative data on the use and effectiveness of these technologies.

4. **Data Analysis:** The data is analysed using qualitative and quantitative methods to identify common themes and measure the impact of these technologies.

RESULTS

1. Literature Review Findings:

- **AI:** Personalized learning through adaptive systems is reported to improve student performance and engagement. AI-driven tools are increasingly used to tailor educational experiences to individual learning styles (Holmes *et al.*, 2019).
- **VR and AR:** These technologies enhance learning by providing interactive and immersive experiences. They are particularly effective in subjects that benefit from visual and spatial understanding, such as science and history (Freina and Ott, 2015).
- **Cloud Computing:** Facilitates remote collaboration and access to resources, making educational materials available across different locations. However, issues such as data security and internet access remain concerns (Wang, 2012).

Table 1: Literature Review Findings

Technology	Key Findings
AI	-Enhances personalized learning with adaptive systems. - Improves student engagement and performance.
VR	-Provides immersive learning experiences. - Effective in subjects requiring spatial understanding.
AR	-Enhances interactive learning. - Effective for visual and spatial subjects.
Cloud Computing	-Facilitates resource access and remote collaboration. - Issues with data security and internet reliability.

2. Case Studies:

- Institutions implementing AI have observed improved student engagement and academic performance. However, high costs and the need for ongoing technical support are significant challenges.
- VR and AR applications have shown promise in enhancing subject comprehension and student interest, though the need for specialized equipment and training presents obstacles.
- Cloud computing has enabled better resource sharing and collaborative projects, but institutions report difficulties related to internet reliability and data protection.

Table 2: Case Studies

Technology	Institutional Observations	Challenges
AI	- Improved student engagement and performance. - High costs and need for technical support.	High implementation costs.
VR	- Enhanced subject comprehension and	Cost and

	student interest. - Need for specialized equipment and training.	technical training.
AR	- Increased student engagement in interactive subjects. - Need for training and equipment.	Lack of training and high costs.
Cloud Computing	- Better resource sharing and collaborative projects. - Difficulties with internet reliability.	Internet reliability and data protection.

3. Surveys:

- **AI Use:** 25% of respondents use AI technologies daily, 40% weekly, and 20% monthly. 75% report positive impacts on student learning outcomes.
- **VR Effectiveness:** 60% find VR highly effective in increasing student engagement, though 30% cite high costs as a barrier.
- **AR Challenges:** Main challenges include lack of training (35%), cost (30%), and technical issues (20%).
- **Cloud Computing Impact:** 70% of respondents believe cloud computing greatly enhances collaborative learning, but 15% express concerns about data security.

Table 3: Surveys

Tec hnology	Usage Frequency	Perceived Effectiveness	Challenges
AI	-Daily: 25% -Weekly: 40% - Monthly: 20%	75% report positive impacts on student outcomes.	High costs and technical support.
VR	- High effectiveness reported by 60% of respondents. - Cost cited as a barrier by 30%.	Effective in increasing engagement.	High cost and technical issues.
AR	-Lack of training: 35% -High cost: 30% - Technical issues: 20%	Effective for interactive learning.	Training and cost concerns.
Clo ud Computing	-Enhances collaborative learning: 70% - Data security concerns: 15%	Facilitates remote collaboration and resource access.	Data security and connectivity issues.

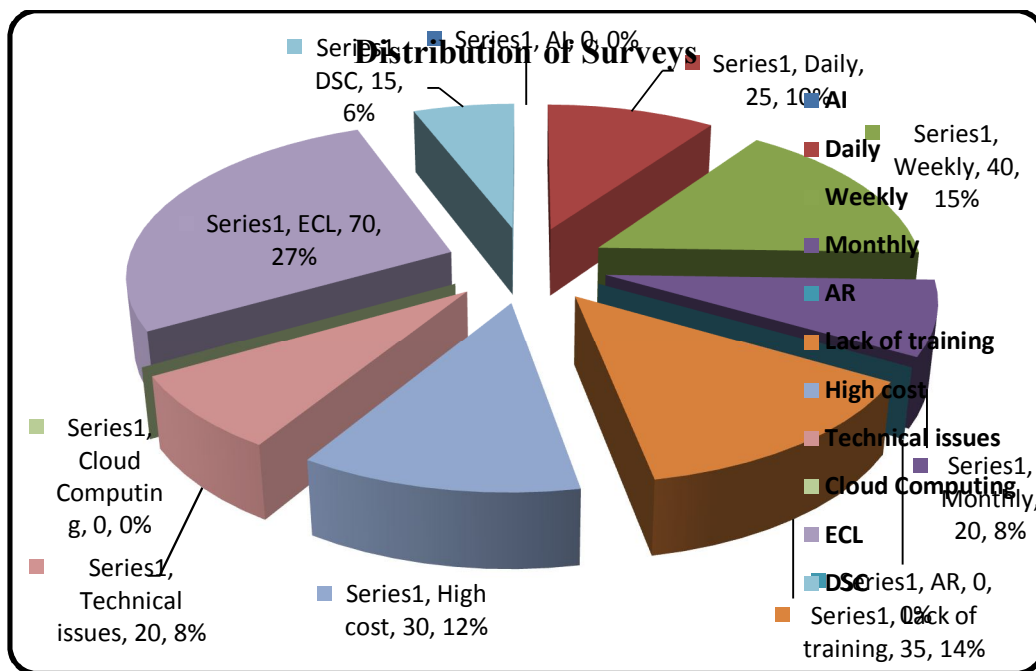


Figure 1: Distribution of Surveys

CONCLUSIONS

Emerging technologies have the potential to transform education by enhancing learning experiences and improving outcomes. However, challenges such as high costs, technical issues, and the need for adequate training must be addressed. Future research should focus on overcoming these barriers and exploring the long-term impact of these technologies on educational effectiveness.

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Advancements in Digital Research: Trends Shaping the Future

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Abstract:

This paper explores the emerging trends in digital research, driven by advancements in technology, artificial intelligence, big data, and the increasing need for interdisciplinary collaboration. It examines how these trends are reshaping research methodologies, data analysis, and the dissemination of knowledge across various disciplines. The paper also discusses the ethical considerations, challenges, and opportunities that come with these digital transformations, offering insights into the future of research in the digital age.

Keywords: Digital research, Artificial Intelligence, Big Data, Interdisciplinary collaboration, Research methodologies, Ethical considerations

Introduction:

The evolution of research practices has always been closely tied to technological advancements. From the early days of print and the advent of the scientific journal to the introduction of computers and the internet, each technological leap has reshaped how researchers gather, analyze, and disseminate knowledge. The transition from analog to digital technologies in the late 20th century marked a significant turning point, fundamentally altering the landscape of research.

The digitization of research tools and resources enabled unprecedented access to information, transforming libraries from physical spaces into vast digital repositories accessible from anywhere in the world. Online databases, digital archives, and electronic journals have become essential components of modern research, allowing for quicker retrieval of information and facilitating more extensive literature reviews. The development of specialized software for data analysis, such as SPSS and MATLAB, further streamlined the research process, enabling researchers to handle large datasets with greater efficiency and precision.

In recent years, the rise of artificial intelligence (AI), big data, and machine learning has introduced even more profound changes to research practices. These technologies have expanded the boundaries of what is possible in research, enabling new methods of data analysis, predictive modeling, and even hypothesis generation. Digital tools now support collaboration on a global scale, with researchers able to work together in real-time across different continents, sharing data and insights instantaneously.

As digital technologies continue to advance, the research landscape is poised for further transformation. The future of digital research will likely be characterized by the increasing integration of AI, the growth of open science, and the rise of new ethical considerations. Understanding these trends and their implications is crucial for researchers, institutions, and policymakers as they navigate the complexities of the digital age.

Future Trends in Digital Research

2.1 Historical Evolution: The Transition from Traditional to Digital Research Tools

The shift from traditional to digital research tools marks one of the most significant transformations in the history of scholarly inquiry. Historically, researchers relied heavily on physical libraries, printed journals, and manual data collection methods. The process was often time-consuming,

with access to information limited by geographical and institutional constraints. The introduction of digital technologies in the late 20th century began to change this landscape dramatically. Digital libraries and online databases provided researchers with immediate access to vast amounts of information, while early data analysis software introduced new efficiencies in handling and processing research data.

The evolution from traditional to digital tools did not happen overnight. It was a gradual process influenced by the advent of personal computers, the internet, and eventually, more sophisticated software and platforms tailored to research needs. Over time, these tools not only replaced their analog counterparts but also expanded the possibilities for research, allowing for more complex analyses and broader dissemination of findings. This historical evolution set the stage for the current digital research environment, which is characterized by rapid technological innovation and the widespread adoption of digital tools across all disciplines.

2.2 Current Digital Tools: A Review of Existing Digital Research Tools and Platforms

Today's research environment is rich with digital tools and platforms that have become integral to the research process. These tools range from comprehensive databases like PubMed and JSTOR, which offer vast repositories of academic articles, to specialized software for statistical analysis, such as R and SPSS. Digital tools for literature management, like Zotero and EndNote, help researchers organize and cite their sources efficiently, while platforms like Google Scholar enable easy access to a broad array of academic papers.

Collaboration tools have also advanced significantly, with platforms like Overleaf for collaborative writing and GitHub for version control and sharing code among researchers. Digital repositories such as arXiv and Figshare facilitate the sharing of preprints and data sets, ensuring that research outputs are more accessible and reusable. These tools not only streamline the research process but also enhance transparency and reproducibility, key components of modern scientific inquiry.

2.2.1 Key Trends Identified

- **AI and Machine Learning in Research** Artificial Intelligence (AI) and Machine Learning (ML) are revolutionizing research methodologies. These technologies allow for the analysis of vast datasets far beyond human capacity, enabling researchers to uncover patterns and insights that were previously unattainable. AI-driven tools are being used in everything from automating data collection and analysis to generating hypotheses and even conducting literature reviews. The ability of AI to process and analyze complex data sets quickly and accurately is transforming fields like genomics, climate science, and social sciences.

- **The Rise of Big Data and Data Analytics** Big Data has become a cornerstone of modern research, offering new opportunities for data-driven discoveries. The sheer volume of data available today, from social media to sensor networks, requires sophisticated analytical tools to process and interpret. Data analytics platforms like Hadoop and Apache Spark have become essential in managing and analyzing big data. These tools allow researchers to extract meaningful insights from large datasets, leading to more informed decision-making and innovative research outcomes.

- **Digital Collaboration Tools and Platforms** The rise of digital collaboration tools has enabled researchers to work together more effectively across geographical boundaries. Platforms like Slack, Zoom, and Microsoft Teams have become essential for communication and collaboration, especially in an increasingly remote and global research environment. Additionally, collaborative platforms such as Overleaf and GitHub allow for real-time co-authoring and sharing of research outputs, facilitating interdisciplinary research and speeding up the research process.

- **Open Access and Open Science Movements** The Open Access and Open Science movements are driving significant changes in how research is conducted and disseminated. Open Access

journals and repositories like PLOS ONE and arXiv make research findings freely available to the public, increasing the accessibility and impact of scholarly work. Open Science initiatives promote transparency, reproducibility, and collaboration by encouraging researchers to share their data, methodologies, and results openly. These movements are challenging traditional publishing models and pushing for a more inclusive and democratic approach to knowledge dissemination.

- **The Role of Digital Repositories and Archives** Digital repositories and archives play a crucial role in preserving and providing access to research data and outputs. Institutions and researchers are increasingly turning to repositories like Zenodo, Dryad, and institutional repositories to store and share data, ensuring that it remains accessible and reusable for future research. These repositories also support the principles of FAIR (Findable, Accessible, Interoperable, Reusable) data, which are becoming increasingly important in the research community.

2.2.2 Challenges and Gaps: Ethical Concerns, Data Privacy, and the Digital Divide

While the rise of digital research tools offers numerous benefits, it also presents significant challenges. Ethical concerns are paramount, particularly regarding data privacy and the potential for misuse of sensitive information. As AI and big data technologies become more prevalent, questions around data ownership, consent, and the ethical use of AI in research are gaining importance.

Additionally, the digital divide remains a critical issue, as access to advanced digital tools and platforms is unevenly distributed across the globe. Researchers in low-resource settings may face barriers to accessing the latest technologies, which can exacerbate existing inequalities in research capacity and output. Addressing these challenges requires concerted efforts from researchers, institutions, and policymakers to ensure that the benefits of digital research are accessible to all and that ethical considerations are central to the development and use of new technologies.

3. Methodology:

3.1. Approach

The research methodology for this paper involves a multi-faceted approach to explore and analyze future trends in digital research. This approach includes a comprehensive review of scholarly articles, case studies, and expert interviews to provide a well-rounded understanding of the subject. The combination of these methods allows for both breadth and depth in examining how digital tools are shaping the future of research.

3.1.1 Review of Scholarly Articles: A systematic review of existing literature was conducted to identify and understand the key trends in digital research. This included peer-reviewed journal articles, conference papers, and review articles that discuss the evolution, current state, and future direction of digital research tools and methodologies.

3.1.2 Case Studies: Selected case studies were analyzed to provide concrete examples of how digital research tools are being implemented in various fields. These case studies offer insights into practical applications, benefits, and challenges of using digital technologies in research. By examining specific instances of digital research practices, the study can draw conclusions about broader trends.

3.1.3 Expert Interviews: Semi-structured interviews with experts in the field of digital research were conducted to gather firsthand insights. These experts included academics, researchers, and industry professionals who are actively engaged with digital research tools and platforms. Their perspectives helped to validate findings from the literature and case studies, while also offering forward-looking views on emerging trends.

3.2 Data Collection

Data for this study was gathered from a variety of sources to ensure a comprehensive analysis. The data collection process involved the following steps:

3.2.1 Literature Database Search: Online databases such as Google Scholar, JSTOR, and PubMed were used to identify relevant scholarly articles. Keywords such as "digital research tools," "AI in research," "big data," "open science," and "digital repositories" were employed to search for articles published within the last decade. The selected articles were then reviewed for relevance, and key themes were extracted for analysis.

3.2.2 Case Study Selection: Case studies were selected based on their relevance to the identified trends in digital research. These case studies were sourced from academic journals, industry reports, and conference proceedings. Each case study was chosen to illustrate specific aspects of digital research, such as the use of AI in data analysis or the implementation of open science principles.

3.2.3 Expert Interviews: Experts were identified through professional networks, academic institutions, and industry organizations. Invitations to participate in interviews were sent out, and interviews were conducted via video conferencing platforms. The interviews were recorded and transcribed for analysis, with the participants' consent. Key topics discussed included the current challenges and opportunities in digital research, as well as predictions for future trends.

3.3 Analysis

The analysis of the collected data was conducted using qualitative methods, focusing on identifying patterns, themes, and implications of the trends in digital research. The following analytical steps were taken:

3.3.1 Thematic Analysis: A thematic analysis was conducted on the reviewed literature, case studies, and interview transcripts. This involved coding the data to identify recurring themes related to digital research trends, such as the adoption of AI, the rise of big data, and the growth of open science. Themes were grouped into categories that align with the key trends identified in the literature review.

3.3.2 Comparative Analysis: The case studies were compared to identify common practices, challenges, and outcomes associated with the use of digital research tools. This comparison helped to highlight the practical implications of the trends and provided a basis for drawing broader conclusions about the future of digital research.

3.3.3 Synthesis of Expert Insights: The insights from expert interviews were synthesized with the findings from the literature review and case studies. This synthesis provided a holistic view of the current state of digital research and offered predictions for future developments. The experts' perspectives were particularly valuable in identifying emerging trends and potential challenges that may not yet be widely recognized in the literature.

4. Discussion:

4.1 AI and Machine Learning

Artificial Intelligence (AI) and Machine Learning (ML) are at the forefront of the digital transformation in research methodologies. These technologies have the potential to revolutionize how data is analyzed and interpreted, introducing new levels of efficiency and accuracy. AI and ML are particularly valuable in predictive analysis, where they can process vast amounts of data to forecast trends, identify patterns, and suggest potential research directions that might not be apparent through traditional methods.

One of the key impacts of AI in research is its ability to automate complex data mining tasks. In fields such as genomics, climate science, and social sciences, AI-driven tools are used to sift through enormous datasets, extracting relevant information and uncovering relationships that would be impossible for human researchers to detect manually. For instance, AI can analyze millions of academic papers, datasets, and other sources in a fraction of the time it would take a human, enabling researchers to stay updated with the latest developments in their fields more effectively.

Moreover, AI is increasingly being used in natural language processing (NLP) to analyze text data, such as academic articles and research reports. This capability is transforming literature reviews by automating the extraction of key concepts, summarizing findings, and even identifying gaps in the literature. As AI technology continues to evolve, it is likely to become an even more integral part of the research process, driving innovation and opening new avenues for exploration.

4.2 Big Data

The rise of big data is another significant trend that is reshaping the research landscape. Big data refers to datasets that are so large and complex that traditional data processing methods are inadequate. The availability of vast amounts of data from various sources, including social media, sensors, and transactional records, has created new opportunities for data-driven discoveries.

Big data enables researchers to conduct large-scale studies that were previously infeasible due to limitations in data collection and analysis. For example, in healthcare, big data analytics can be used to track disease outbreaks in real-time, analyze patient records to improve treatment outcomes, and even predict potential health crises based on historical data. In the social sciences, big data allows researchers to study societal trends and behaviors on a global scale, providing insights that are both comprehensive and granular.

However, the use of big data also presents challenges, particularly in terms of data management, privacy, and the ethical implications of data use. Researchers must navigate these challenges while leveraging the potential of big data to drive new discoveries and contribute to the advancement of knowledge.

4.3 Interdisciplinary Collaboration

Digital tools are significantly enhancing interdisciplinary collaboration by bridging gaps between different research domains. Traditional research often occurred within isolated disciplines, but the rise of digital platforms has enabled more fluid and dynamic interactions between researchers from diverse fields.

Collaboration tools such as Slack, Microsoft Teams, and Zoom facilitate real-time communication and coordination, making it easier for teams to work together regardless of their physical locations. These platforms support various forms of interaction, from text-based discussions to video conferences, allowing researchers to share insights and progress efficiently.

In addition, collaborative software such as Overleaf for writing and GitHub for code sharing and version control has transformed how research projects are managed and executed. These tools enable simultaneous contributions from multiple researchers, streamline the integration of diverse expertise, and ensure that updates and changes are tracked meticulously. This collaborative environment fosters innovative approaches by combining knowledge and methodologies from different fields, leading to more comprehensive and interdisciplinary research outcomes.

Furthermore, digital platforms like ResearchGate and Academia.edu provide networking opportunities and facilitate the sharing of research findings across disciplines. By enabling researchers to connect with peers outside their primary field, these platforms help break down disciplinary barriers and encourage the cross-pollination of ideas.

4.4 Open Science and Open Access

The movement towards Open Science and Open Access is reshaping how research is conducted and disseminated. Open Science promotes transparency and accessibility in research by encouraging the sharing of data, methodologies, and findings with the broader community. This approach aims to make scientific knowledge more freely available, facilitating greater public engagement and scrutiny.

Open Access journals, such as those published by PLOS and BioMed Central, provide free access to research articles, removing financial and institutional barriers that previously restricted access to

scholarly work. This democratization of knowledge helps level the playing field, allowing researchers from institutions with limited resources to access and contribute to cutting-edge research.

The benefits of Open Science extend beyond accessibility. By making research data and methods openly available, researchers can build on existing work more effectively, replicate studies to validate findings, and engage in collaborative research efforts that might not have been possible under traditional publishing models. Open data repositories, such as Zenodo and Figshare, play a crucial role in this movement by providing platforms for the dissemination and preservation of research data.

4.5 Digital Repositories and Archives

Digital repositories and archives are becoming increasingly important for the preservation and accessibility of research data. As the volume of digital research outputs grows, the need for robust systems to manage and safeguard these resources has become more critical.

Digital repositories, such as institutional repositories and subject-specific archives, provide a centralized location for storing research data, publications, and other scholarly outputs. These repositories ensure that research materials are preserved for long-term access and can be easily retrieved by other researchers. They also support the principles of FAIR (Findable, Accessible, Interoperable, Reusable) data, which enhance the usability and impact of research resources.

The role of digital archives extends beyond preservation; they also facilitate the curation and dissemination of historical and contemporary research. By maintaining comprehensive and accessible records, digital archives contribute to the continuity of scholarly work and support the creation of new knowledge by providing a rich resource for future research.

4.6 Ethical Considerations: Future Trends in Digital Research

- **Data Privacy**

Data privacy is a critical ethical concern in the digital research landscape. The collection and use of digital data, particularly large-scale datasets, raise significant questions about how personal and sensitive information is handled. Researchers must navigate complex legal and ethical frameworks to ensure that data is collected, stored, and used in compliance with privacy regulations and standards.

5. Concerns include:

1. **Informed Consent:** Ensuring that individuals whose data is being collected are fully informed about how their data will be used and have given their explicit consent. This is especially important in research involving sensitive information, such as health records or personal identifiers.

2. **Data Security:** Protecting data from unauthorized access and breaches is essential to maintain privacy. Researchers must implement robust security measures to safeguard data and prevent data leaks or cyber-attacks.

3. **Anonymization and De-identification:** Techniques such as anonymization and de-identification are used to protect individuals' identities within datasets. However, there are concerns about the effectiveness of these methods in fully protecting privacy, particularly as data de-anonymization techniques become more sophisticated.

4. **Ownership and Control:** Issues of data ownership and control are increasingly prominent. Researchers and institutions must address questions about who owns the data, who has the right to access it, and how it can be used or shared.

6. Conclusion:

The research landscape is being transformed by key trends such as AI and machine learning, big data, interdisciplinary collaboration, open science, and digital repositories and archives. AI and machine learning enable advanced predictive analysis and data mining, while big data offers new opportunities for data-driven discoveries. Interdisciplinary collaboration is facilitated by digital tools breaking down traditional barriers and fostering dynamic interactions among researchers from diverse fields. The shift

towards open science and open access is making research more accessible and transparent, promoting greater public engagement and inclusive knowledge dissemination. The growing importance of digital repositories and archives underscores the need for robust systems to preserve and provide access to research data. To adapt to these trends, researchers, institutions, and policymakers should embrace AI, develop robust data management practices, foster interdisciplinary collaboration, support open science initiatives, and invest in digital preservation. By addressing these recommendations, stakeholders can navigate the evolving digital research landscape effectively, leveraging emerging trends to advance knowledge and drive innovation.

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Comparing Traditional and AI-Driven Research Tools: A Library Science Perspective

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Abstract This paper explores the comparative effectiveness of traditional research tools and AI-driven technologies in the context of library science. It evaluates how these tools impact information retrieval, user experience, and research outcomes. By analyzing various case studies and scholarly sources, the paper aims to provide insights into the advantages and limitations of each approach, offering recommendations for integrating AI technologies into library practices.

Key world: Traditional Tools, AI Tools, Research Tools

1. Introduction

1.1 Background

The landscape of research tools in library science has undergone profound transformations over the past several decades. Traditionally, libraries were reliant on manual and physical resources such as card catalogs, printed reference materials, and microfilm archives. These tools played a crucial role in the organization, retrieval, and dissemination of information, but their scope and efficiency were limited by physical constraints and the need for manual effort.

The advent of digital technology marked the beginning of a new era in library science. The introduction of electronic databases, online catalogs, and digital archives significantly expanded access to information, allowing researchers to locate and retrieve resources more swiftly. This transition to digital resources streamlined many processes and increased the volume and diversity of accessible materials.

In recent years, the rise of artificial intelligence (AI) has introduced another paradigm shift in the research landscape. AI-driven tools, such as machine learning algorithms, natural language processing systems, and advanced data analytics, have begun to complement and, in some cases, replace traditional methods. These AI-driven tools offer capabilities such as predictive search, personalized recommendations, and automated data processing, which promise to enhance research efficiency and uncover insights that might be challenging to achieve through conventional means.

1.2 Definition and Significance

1.2.1 Traditional Research Tools: Traditional research tools encompass the classic resources and methods used in libraries before the widespread adoption of digital technology. These include:

- **Card Catalogs:** A manual system for indexing and locating books and other resources, typically organized by author, title, and subject.
- **Printed Reference Materials:** Physical books, encyclopaedias, and journals that provide information on various topics.
- **Microfilm and Microfiche:** Methods for preserving and accessing large volumes of historical documents and periodicals in a compact format.

The significance of traditional tools lies in their foundational role in library science. They provided structured systems for information retrieval and had a significant impact on the development of research methodologies. However, their limitations included restricted access to information, time-consuming retrieval processes, and the need for physical storage space.

1.2.2 AI-Driven Research Tools: AI-driven research tools represent a modern approach to information management and analysis, utilizing advanced technologies such as:

- **Machine Learning Algorithms:** These algorithms can analyze large datasets, identify patterns, and make predictions based on data-driven insights.
- **Natural Language Processing (NLP):** NLP allows computers to understand, interpret, and generate human language, enhancing search capabilities and providing more accurate and contextually relevant results.
- **Data Analytics:** Advanced analytics tools can process massive volumes of data to develop insights, uncover trends, and aid decision-making processes.

The significance of AI-driven tools lies in their potential to transform research practices by offering faster, more accurate, and personalized information retrieval. They enable researchers to manage and analyze complex datasets more effectively, providing opportunities for new forms of knowledge discovery and enhancing overall research efficiency.

2. Research Objectives

- To compare traditional research tools with AI-driven tools
- To assess the impact on research efficiency and user satisfaction

3. Traditional Research Tools

3.1 Overview

Traditional research tools have been the cornerstone of academic and informational research for many decades. Despite the rise of digital technologies, these tools continue to play a significant role in libraries and research environments. This section provides an overview of key traditional research tools, including catalogs and card catalogs, indexes, abstracts, bibliographies, and microform and physical archives.

3.1.2 Catalogs and Card Catalogs

- **Catalogs:** Libraries have traditionally used catalogs to organize and locate resources. These catalogs are systematic lists of books, journals, and other materials available in the library. They are organized by various classification systems, such as the Dewey Decimal System or the Library of Congress Classification. Catalogs can be accessed in physical formats, such as printed catalogs, or through computerized library systems.

- **Card Catalogs:** Before the advent of digital technology, card catalogs were the primary method for organizing library collections. Each card contained bibliographic information about a book or resource, including author, title, subject, and publication details. Cards were organized in drawers by author, title, and subject, making it possible to locate items manually. Card catalogs required physical interaction and were limited by the physical space available.

3.1.3 Indexes, Abstracts, and Bibliographies

- **Indexes:** Indexes are comprehensive lists of subjects, authors, or titles referenced within a book, journal, or article. They help users quickly locate specific information within larger works. Indexes are often found at the end of books or in dedicated volumes for periodicals. They provide a method for accessing detailed information on a specific topic without needing to read the entire text.

- **Abstracts:** Abstracts are concise summaries of academic articles, research papers, or reports. They provide an overview of the main points, findings, and relevance of the work. Abstracts help researchers quickly assess the content and relevance of a resource without reading the full text. Abstracts are commonly found in academic journals and databases.

- **Bibliographies:** Bibliographies are lists of sources and references used in research or cited within a publication. They provide detailed information about books, articles, and other resources,

including authorship, publication dates, and publishers. Bibliographies are essential for tracking sources and verifying information in academic research.

3.1.4 Microform and Physical Archives

- **Microform:** Microform technology includes microfilm and microfiche, which are methods of storing and preserving documents by photographing them at a reduced scale. Users can view and print these documents using microform readers. Microforms were widely used for preserving historical newspapers, journals, and other documents before the digital age.

- **Physical Archives:** Physical archives consist of collections of documents, manuscripts, records, and other materials stored in physical formats. These archives are often preserved in controlled environments to prevent deterioration. Researchers access physical archives through on-site visits, requiring manual handling and examination of materials. Archives play a critical role in preserving historical and primary source materials for research.

3.1.5 Advantages

Reliability and Proven Methods: Traditional tools have been rigorously tested and refined over time, providing reliable methods for information retrieval.

Familiarity: Many researchers and librarians are well-acquainted with traditional tools, making them a trusted and comfortable resource.

Comprehensive Coverage: Physical archives and indexes often include historical and hard-to-find documents not yet digitized.

3.1.6 Limitations

Time-Consuming: Accessing information through traditional tools can be slow and labor-intensive, especially when searching through extensive physical archives or card catalogs.

Limited Search Capabilities: Traditional tools lack advanced search functionalities and often require manual sorting through large volumes of material.

Physical Space Requirements: Maintaining physical catalogs, indexes, and archives requires significant storage space, which can be costly and impractical for some institutions.

3. 2. AI-Driven Research Tools

3.2.1 Overview

AI-driven research tools represent a significant advancement in the way information is accessed, retrieved, and utilized. Leveraging artificial intelligence technologies, these tools enhance the research process by offering more efficient, accurate, and user-friendly methods for discovering and managing information. This section provides an overview of key AI-driven research tools, including search engines and digital databases, AI-powered recommendation systems, and Natural Language Processing (NLP) tools and chat bots.

3.2.2 Search Engines and Digital Databases

- **Search Engines:** AI-driven search engines, such as Google Scholar and Microsoft Academic, use sophisticated algorithms to index and retrieve academic and scholarly information. Unlike traditional catalogs, these search engines can process vast amounts of data in real time, providing users with relevant search results based on keyword queries. AI algorithms optimize search results through relevance ranking, semantic understanding, and contextual analysis, making it easier for researchers to find pertinent information quickly.

- **Digital Databases:** Digital databases, like JSTOR, PubMed, and IEEE Xplore, incorporate AI technologies to enhance search functionality and data retrieval. These databases often use AI to improve indexing, manage large volumes of data, and provide advanced search options, such as Boolean operators, filters, and keyword suggestions. AI-driven analytics help in tracking trends, identifying emerging research areas, and providing insights into the usage patterns of research materials.

3.2.3. AI-Powered Recommendation Systems

- **Personalized Recommendations:** AI-powered recommendation systems use machine learning algorithms to analyze user behaviour, preferences, and past searches to suggest relevant research materials. These systems are employed in various platforms, including digital libraries and online research tools. For instance, recommendation engines in academic databases can suggest articles, books, or journals based on the user's previous interactions and search history, thereby enhancing the discovery process.

- **Content Curation:** AI systems curate content by analyzing vast amounts of academic literature and extracting key trends and themes. This curation helps in providing users with tailored content feeds, relevant alerts, and notifications about new research developments in their field of interest. By personalizing the content delivery, AI-driven systems aim to improve user engagement and research productivity.

3.2.4 Natural Language Processing (NLP) Tools and Chatbots

- **NLP Tools:** Natural Language Processing (NLP) tools enable machines to understand, interpret, and generate human language. In the context of research, NLP tools facilitate advanced text analysis, such as topic modelling, sentiment analysis, and keyword extraction. These tools help in summarizing large volumes of text, extracting meaningful insights, and providing more intuitive search functionalities. For example, NLP-based search engines can understand queries in natural language, offering more relevant search results compared to keyword-based searches.

- **Chatbots and Virtual Assistants:** AI-driven chatbots and virtual assistants offer interactive support for research inquiries. These systems use NLP to understand and respond to user questions, provide information about library resources, and guide users through research processes. Chatbots can assist with tasks such as locating materials, answering frequently asked questions, and providing recommendations based on user needs. They enhance user experience by offering immediate, 24/7 assistance and reducing the dependency on human librarians for routine queries.

3.2.5 Advantages

- **Efficiency and Speed:** AI-driven tools significantly enhance the speed and efficiency of information retrieval by automating search processes and providing instant access to relevant data.

- **Advanced Search Capabilities:** These tools offer advanced search functionalities, including semantic search, contextual understanding, and personalized recommendations, which improve the accuracy and relevance of search results.

- **Personalization:** AI-driven tools provide personalized research experiences by analyzing user preferences and behaviour, leading to more tailored and relevant content delivery.

3.2.6 Limitations

- **Bias and Accuracy:** AI algorithms may add biases depending on training data, resulting in skewed or erroneous search results. Ensuring fairness and accuracy in AI-powered technologies is an ongoing problem.

- **Dependence on Data Quality:** The effectiveness of AI-driven tools relies heavily on the quality and comprehensiveness of the data available. Incomplete or outdated data can affect the reliability of search results and recommendations.

- **Complexity and Accessibility:** The implementation and maintenance of AI-driven tools require significant technological infrastructure and expertise. Some institutions may face challenges in adopting and integrating these technologies due to resource constraints.

4. Comparative Analysis

4.1 Methodology

To effectively compare traditional and AI-driven research tools, this analysis employs a multifaceted methodology. The criteria for comparison include efficiency, accuracy, user satisfaction, and cost. Each criterion is evaluated through a combination of qualitative and quantitative methods to provide a comprehensive understanding of the strengths and weaknesses of both types of tools.

- **Efficiency:** Efficiency is assessed based on the time required to retrieve information and the ease of use. This includes evaluating how quickly users can locate relevant resources and how streamlined the process is for various types of queries.
- **Accuracy:** Accuracy is measured by the relevance and correctness of search results. This involves comparing how well traditional tools and AI-driven tools match user queries with the most pertinent and reliable information.
- **User Satisfaction:** User satisfaction is gauged through surveys, interviews, and usability studies. This criterion examines the overall user experience, including ease of navigation, satisfaction with search results, and overall satisfaction with the research process.
- **Cost:** The cost analysis includes both the financial investment required to implement and maintain the tools and the cost-effectiveness in terms of user time and resource utilization. This also considers ongoing operational costs, such as software updates and hardware requirements.

4.2 Case Studies

4.2.1 Comparative Study of Library Patrons' Experiences

A comparative study was conducted involving library patrons who used both traditional and AI-driven research tools. This study focused on:

- **User Groups:** Participants included a diverse group of library patrons, including students, researchers, and general users.
- **Experience Measurement:** Patrons were asked to use both traditional tools (e.g., card catalogs, physical indexes) and AI-driven tools (e.g., digital databases, AI-based search engines) for similar research tasks. Surveys and interviews were conducted to gather feedback on their experiences.
- **Data Collection:** Data were collected on the time taken to complete research tasks, the ease of use of each tool, and the perceived effectiveness of the tools in finding relevant information.

4.2.2 Analysis of Research Productivity and Outcome Differences

This analysis compared the research productivity and outcomes achieved using traditional versus AI-driven tools:

- **Productivity Metrics:** Metrics included the number of resources accessed, the relevance of the information found, and the efficiency of the research process. Researchers using both types of tools were tracked over a set period to assess their productivity.
- **Outcome Evaluation:** The quality of research outcomes was evaluated based on factors such as the depth of information retrieved, the ability to meet research objectives, and the overall success of the research projects.

4.3 Findings

4.3.1 Key Differences in Performance and User Feedback

- **Performance:** AI-driven tools generally outperformed traditional tools in terms of speed and efficiency. Users reported that AI-driven tools provided quicker access to relevant information and offered advanced search functionalities that traditional tools lacked.
- **User Feedback:** Users expressed higher satisfaction with AI-driven tools due to their intuitive interfaces, personalized recommendations, and advanced search capabilities. Traditional tools

were appreciated for their reliability and familiarity but were often criticized for being time-consuming and less effective in handling complex queries.

4.3.2 Impact on Research Processes and Outcomes

- **Research Processes:** AI-driven tools streamlined the research process by reducing the time needed to locate information and offering more precise search results. This led to a more efficient research workflow and reduced manual effort compared to traditional tools.
- **Research Outcomes:** The quality and relevance of research outcomes improved with AI-driven tools. Researchers using these tools were able to access a broader range of resources and obtain more accurate and relevant information. However, traditional tools still provided valuable contextual and historical perspectives that were sometimes less accessible through AI-driven platforms.

5. Implications for Library Science

5.1 Integration Strategies

5.1.1 Combining Traditional and AI-Driven Tools for Optimal Results

- **Holistic Approach:** Libraries should consider adopting a holistic approach that integrates both traditional and AI-driven tools to maximize their benefits. Traditional tools, such as physical catalogs and archives, offer valuable historical context and reliable indexing methods. AI-driven tools enhance these with advanced search capabilities and personalized recommendations. By providing access to both types of tools, libraries can cater to diverse user needs and research styles.
- **Seamless Integration:** Implementing systems that allow seamless integration between traditional and digital resources is crucial. For example, digital catalogs can include references to physical collections, and AI-driven databases can be linked to traditional indexes. This approach ensures that users can easily navigate between different types of resources, leveraging the strengths of each.
- **User Interfaces:** Developing user interfaces that combine traditional and AI-driven functionalities can improve accessibility and usability. Interfaces should be designed to accommodate both experienced users familiar with traditional tools and newcomers who are more comfortable with digital platforms.

5.1.2 Training and Support for Library Staff and Users

- **Staff Training:** Training programs should be established to equip library staff with the skills needed to effectively use and support both traditional and AI-driven tools. This includes understanding how to operate new technologies, integrate them with existing systems, and assist users in navigating complex research tasks.
- **User Education:** Libraries should offer workshops and resources to help users become proficient with both traditional and AI-driven tools. Educational programs can cover topics such as advanced search techniques, effective use of AI recommendations, and understanding the strengths and limitations of different tools.
- **Technical Support:** Providing ongoing technical support is essential for ensuring that both library staff and users can effectively utilize integrated systems. Support teams should be trained to troubleshoot issues with both traditional and AI-driven tools and offer solutions that address user needs.

5.2 Future Directions

5.2.1 Trends in AI Development and Their Potential Impact on Library Services

- **Advancements in AI Technology:** Emerging trends in AI, such as more sophisticated machine learning algorithms, enhanced natural language processing, and increased automation, have the potential to significantly impact library services. For instance, AI could enable even more accurate

and context-aware search results, predictive analytics for resource management, and advanced personalization features.

- **Integration with New Technologies:** Putting AI together with new technologies like virtual reality (VR) and augmented reality (AR) could completely change how libraries work. For example, VR and AR could provide immersive experiences for exploring digital archives or historical documents, while AI could facilitate real-time, interactive research assistance.

- **Ethics Considerations:** As AI technology develops, ethics issues will become more significant. Libraries need to talk about data protection, algorithmic bias, and how to use AI in a smart way. Making sure AI systems are open and fair is important for keeping users' trust and making sure everyone has equal access to information.

5.2.2 Recommendations for Future Research and Technology Adoption

- **Ongoing Evaluation:** Continuous evaluation of both traditional and AI-driven tools is necessary to understand their evolving effectiveness and user impact. Libraries should regularly assess the performance of their research tools, gather user feedback, and make data-driven decisions to refine their offerings.

- **Pilot Programs:** Implementing pilot programs to test new AI-driven technologies or integrated systems can provide valuable insights into their potential benefits and challenges. These programs can help libraries identify best practices and develop strategies for broader implementation.

- **Collaborative Research:** Libraries should collaborate with technology developers, researchers, and other institutions to explore innovative solutions and share knowledge about effective technology adoption. Collaborative research can lead to the development of new tools and methodologies that address emerging needs and improve library services.

- **User-Centric Design:** Future research should focus on understanding user needs and preferences to guide the development of research tools. Designing tools with a user-centric approach ensures that technological advancements align with the practical requirements of researchers and library patrons.

6. Traditional Tool & AI Tools

Research setup	Traditional tools	AI Tools
Topics search Tools	Answer the Public (keyword research tools)	Elicit
	Google Keyword planner	Research rabbit
	Semrush	Scite
	Googls Trends	ChatGpt/Claude
	QuestionDB	Briwer AI
	Google Search Console	Connected papers
	Free keyword research tools (etc.)	Semantic Scholar (etc.)
Review of Literature	ScienceOpen	Citing generative AI
	The Lens	Jenni Ai
	Citation Gecko	Iris.Ai
	Local Citation Network	Rayyan
	ResearchRabbit	Whisper AI

	Open Access Button	Consensus
	Unpaywall	Litmaps
	EndNote Click	Research Buddy
	Read by QxMD	Research Pal
	CiteAs	Review Bomb me
Statistical Testing Tools	GraphPad	ChartPixel
	Microsoft Excel	Graphy.app
	Easy calculation	Teste.ai
	Daniel soper	PlotGPT
	Vassar Stats	AskExcel
	Socscistatics	Datayaki
	Spss/R softwer	AI Geometric
Academic Writing Tool	Ref-n-write.com	Quillbot
	Grammarly	Writerightai
	Mendeley	writfull
	Zotero	WritefullAcadem izer
	LaTex	Prowriting
	Microsoft Tools	AcadenucGpt
Plagiarism Checker	Turnitin	Plagiarismserch.c om
	urkund	Plag
	drill bit	NoPlagio
	iThenticate	Copyleaks- Plagiarism detector
	Copyleaks	AI Plagiarism Checker
	Unicheck	Gremmarly
	Easybib&QueText	ZeroGpt.Tools

7. Conclusion

The paper compares traditional and AI-driven research tools, revealing their strengths and challenges. Traditional tools, such as catalogs and physical archives, offer reliability and familiarity but have limitations like slower search processes. AI-driven tools, on the other hand, excel in efficiency, accuracy, and personalization, offering rapid access to relevant information through advanced algorithms and machine learning. While AI-driven tools generally outperform traditional methods in terms of speed and precision, traditional tools still hold value for their reliability and contextual depth. To address these challenges, libraries should adopt a hybrid model that combines the strengths of both approaches, invest in ongoing training and support, and focus on continuous improvement. A balanced approach that leverages both traditional and AI-driven tools will be key to meeting diverse researchers' needs and advancing library science.

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The Impact of Use of Artificial Intelligence Tools on Higher Education

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Abstract:

In today's modern era, a new concept of artificial intelligence has emerged. We are going to study the impact of this concept in various fields and the application of this concept in the field of teaching especially in higher education. Because of this, you want to study the changes in assessment skills in higher education as well as its future implications and its contribution to higher education. Because this concept is definitely going to be a boon for the future as well as the society. Because this is going to change the face of education system in higher education. A skilled qualitative personality development will emerge. From this we want to study how much we can influence the education system of the past as well as the present and future education system and its development. For that we are going to see the impact of this concept in the higher education system.

Keywords: AI; Higher education; impact; teaching & Learning.

Introduction:

(AI) is a sophisticated branch of computer science with artificial intelligence which is a sophisticated computer system that acts like human intelligence which has been ambitiously used to conduct various experiments in robotics/auto vehicles/digital classrooms/mobile phones/research work. You want to study how higher education has changed over the past few decades and how the advent of (AI) has impacted higher education.

History:

The history of artificial intelligence (AI) began in [antiquity](#), with myths, stories and rumors of artificial beings endowed with intelligence or consciousness by master craftsmen. The seeds of modern [AI](#) were planted by philosophers who attempted to describe the process of human thinking as the mechanical manipulation of symbols. This work culminated in the invention of the [programmable digital computer](#) in the 1940s, a machine based on the abstract essence of mathematical reasoning. This device and the ideas behind it inspired a handful of scientists to begin seriously discussing the possibility of building an [electronic brain](#).

Definition:

Definition of AI: Artificial intelligence (AI) refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, or solving problems.

AI Impact on the Learning and Teaching Process:

The use of (AI) in higher education has given the higher education system a modern as well as a secular status. The difficulties that were faced in the earlier education system are now being removed due to this concept. Enrollment in higher education as well as accuracy in curriculum will increase. AI has brought about a big change in the higher education system because previously education was done face to face in the classroom but now due to the concept of AI we can take education from any place in the world in a digital form outside the classroom. You can see a big change. Imagine a classroom where every student receives personalized attention, where lessons adapt in real-time to suit individual learning styles and paces. This is not the future—it's happening

now, thanks to artificial intelligence (AI) in education. Today, over 60% of U.S. educators are harnessing AI tools to revolutionize the way they teach and students learn. These tools are not just about efficiency; they're about enhancing educational outcomes in ways previously unimaginable.

This article will discuss the best 12 AI Tools for Education that are bringing about new standards in individualized and engaging teaching and learning. Education is being transformed by tools that are capable of targeting areas where pupils are not learning and those that create lessons specific to them.

Here's a breakdown of different types of AI tools used in education:

Personalized Learning Tools:		
Adaptive learning platforms:		• Adjust materials based on student performance.
Recommendation engines:		• Suggest resources based on interests.
AI-powered tutors:		• Offer personalized instruction.
Assessment and Feedback Tools:		
Automated grading systems:		• Grade assignments.
AI writing assistants:		• Provide feedback on grammar and style.
Performance analysis tools:		• Analyze student data to predict performance.
Engagement and Support Tools:		
Interactive learning simulations:		• Practice skills in a safe environment.
Game-based learning platforms:		• Motivate students with gamification.
Accessibility Tools:		
Text-to-speech tools:		• Convert text to audio.
Language translation tools:		• Translate materials.
Speech recognition tools:		• Interact through voice commands.
Administrative Tools:		
Chatbots:		• Answer student questions.
Automated scheduling		• Manage class schedules.

systems

The Biggest Impact In Higher Education Has Come From The Use of The Following Tools.

1. **Cognii:** Cognii is an AI tools for education that helps both in assessment and tutoring. Cognii is one of the best apps for educators and students that also provide insights and analytics. Cognii is an **artificial intelligence assistant** developed by **Dee Kanejiya**. It is a handy tool for both educators and scholars.



remote learning and online students that not only helps to summarize provides various features. It consists of grammar checker, paraphraser, AI writer, generate structured emails, documents developed by Rohan Gupta who is also it's

2. **QuillBot:** QuillBot is a popular AI tools for



education, among written text but also various tools like etc. You can even and posts. QuillBot was CEO.

3. **Quizlet:** Another efficient AI powered writing tool, is considered as one of the best AI tools for education, developed by Andrew Sutherland, Quizlet helps you make **quiz questions, flashcards, practice questions**, etc. for better understanding. Quizlet smartly uses the AI technology in producing organized subject matter for **memorizing, presentation or exams**.



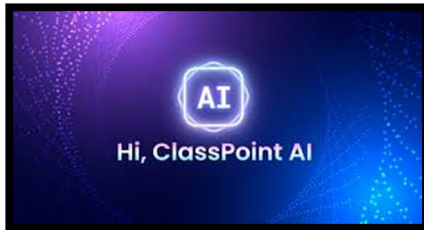
4. **Wolfram / Alpha:** created by Wolfram Research is a **problem solving AI** Tool that solves any question within seconds and is considered as best AI tools for remote learning and online education. Increase knowledge in a particular theme by asking Wolfram questions which will provide you with easy answers and step by step solutions.



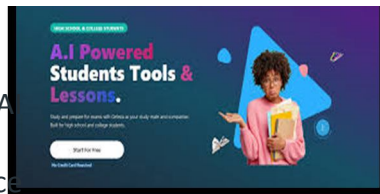
5. **Curipod:** This AI tool for educators and students can help them create more interactive **Lectures and presentations**. There are other features in this one of the best AI tools for education, which enhances the work of the user. Curipod develops your critical thinking by **producing interactive lessons**. It can also be utilised for translating content. It is also used for meetings and workshops. Curipod was developed by **Jens Aarre Seip**.



6. **ClassPoint AI:** ClassPoint AI generates quiz questions through **PowerPoint slides**. It is extremely useful for both **students** and **teachers**. With **quiz questions** being extremely easy to make you can improve your knowledge in various areas.



7. **Geleza:** Geleza is an interactive AI tool, considered as one of the best AI tools for student's assignment that helps students to score the highest in their exams. It is a multi-tasking tool that incorporates smart learning with fast learning. Students can also discuss their doubts with other students studying the same topic and theme.



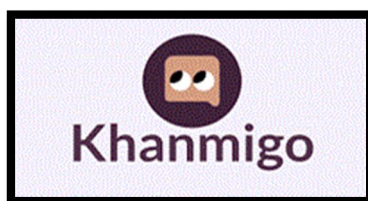
8. **Yippity:** Yippity is an AI tool that can generate any piece of question



any piece of question

website with learning tools which convert of Information into and answers and **flashcards**. It is

known to be one of the best AI tools For education, from **filling in the bank to multiple choice questions** you can develop a diverse range of questions with ease.



9. **Khan Academy Khanmigo:** Intelligence, considered as one of the best AI Tools For

Education, to help **student-directed learning**, provides **quick feedback** and has tools for engaging sessions. It said to be different from the **regular AI** which is often **direct** and **analytical**. It provides solutions to student's queries in various subjects. It can also be used by teachers.

10. **Coursebox:** Coursebox is an AI course creator, considered as one of the AI tools

in

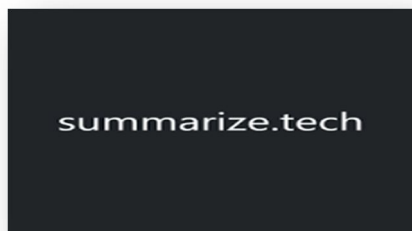


for education, that helps you create and design a course under one hour with the guidance of a course editor. Features like event calendar, event management, and knowledge management help in enhancing your course. A fermium plan is also available to help in modifying your course

11. **Goodgrade.ai:** GoodGrade.ai is an AI-powered tool focused on enhancing educational experiences by assisting with writing essays, finding quotes, and humanizing text. Designed to make students' lives easier, GoodGrade.ai offers robust features that cater to various academic needs, ensuring quality and efficiency in completing assignments.



12. Summarize.tech: Powered by ChatGPT, Summarize.tech, is one of the best AI tools for remote learning and online education, summarizes the given subject matter to get a gist of the theme and



topic in video format. Here you can copy the URL link of any YouTube lecture and then get a summary including main key points.

Conclusion:

AI In this research paper, while teaching and learning in the higher education system, if tools are used, then what is the impact on the education system and the use of these tools has made teaching and learning easier. Tools have created a new evolution and will be a boon to mankind. Will be needed

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A New Paradigm for Including Technological Intelligence and Digital Literacy in Indian Higher Education Curriculum

Dr.Vishwasrao Sadu Mane

Abstract:

Background: Because students in the twenty-first century can be referred to as digital natives, any conversation about pedagogies and curricula must center on integrating digital literacy skills, and instruction and learning resources must emphasize the growth of students' technological intelligence. The main concern of curriculum designers and educationists alike is how to adapt and change higher education to better equip the students of this century to meet the demands of the modern workforce.

Keywords: Technological intelligence, Curriculum, Media Literacy, Digital literacy skills, Partnership for 21st-century skills

1. Introduction:

Higher education always plays an active role in the transformation of societies and, as a consequence, the curriculum of higher education can be considered as a framework and design that allows tracing development paths. On the other hand, the world is changing due to advances in technology and communication, nature and the functioning of society also change. It is a natural process that occurs over time. As people and societies evolve with the demands of the times, the bottom line is that stakeholders need to provide reforms in higher education programs. That is important. Simple application and ICT insertion into the curriculum is not enough, but you need to develop a digital technical culture between students. Digital coaches and digital immigrants must be well equipped and equipped with digital literacy skills by developing technological intelligence. The curriculum needs to incorporate fundamentals that promote a new paradigm that synchronizes the two variables of digital literacy skills and technological intelligence.

The theoretical background of this paper is the Partnership for 21st Century Skills which lists digital skills as one of the skill sets of 21st century skills and technological intelligence as one of the key intelligences of 21st century leaders. This is mentioned in the contextualized multiple intelligences theory proposed by Prof. Ying Cheong Chen, Director of the Centre for International Research and Cooperation, Hong Kong Institute of Education: Digital skills and technology intelligence are essential for success in society in the 21st century. (Abla, 2017)

2. Objectives of the Study:

The paper addresses two key questions for higher education educators:

1. The current status of preparing graduates with 21st-century skills.
2. How to integrate digital and technological intelligence into the curriculum.

3. Research Methodology:

The Study is based on secondary data. This is collected through various publications, books, the Internet, and articles. Exploration of the current Indian higher education curriculum and critical analysis of the findings of various studies conducted in a similar field, as well as an examination of newspapers, educational policies, public survey results, and literature on trends and developments in higher education academia.

4. Scope of the Study:

There is a huge need to update and modify the curriculum and pedagogical approaches to better match the learners' learning styles and expectations.

5. Theoretical Background:

With a focus on the Indian context, this paper seeks to critically examine how higher education is currently doing in terms of fostering technological intelligence and providing students with digital skills. Thus, as noted in the Partnership for 21st-century Skills, 2006, the writers critically analyze the Indian higher education curriculum, which places more emphasis on grades and scores than on the integration of skills and the importance of digital literacy. Thus, the current study's goals were to: assess how the Indian higher education system prepares students for technological intelligence and digital skills; and determine how to integrate these abilities into the curriculum for higher education.

The process for collecting and analyzing data involved reading and evaluating academic literature on trends and developments in higher education, as well as closely examining the findings of numerous studies carried out in related fields and scrutinizing newspaper articles, educational policies, public survey results, and survey results.

The status of higher education in providing students with digital skills and fostering technological intelligence is discussed using a prescribed procedure. This process is outlined in three steps: a) the current state of higher education's ability to equip graduates with 21st-century skills; b) the inclusion of technological intelligence and digital literacy skills in the curriculum; and c) a suggested roadmap for the integration of digital skills

6. Discussions and Results

• *What is the current status of higher education in preparing graduates with 21st-century skills?*

The twenty-first century is known as the knowledge era because knowledge has significantly changed work and other practices while also acting as a catalyst for economic growth. The current digital revolution has ultimately resulted in a number of challenges for the educational system as a whole as well as the growing need for new types of digital literacy skills. The quality of higher education becomes more important as India attempts to enter a globalized economy in fields that require highly skilled professionals. We can see from other developing nations that they are constantly incorporating technological advancements into their higher education curricula to create universities of the highest caliber (Lee, 2013). The fact that the current higher education system and curriculum do not fulfill the intended purpose makes me feel extremely sorry. As a result, the shortcomings of the curriculum for higher education highlight the need for changes to make it worthy and advantageous for everyone. The majority of stakeholders agree that the lack of scientific temper, innovation, research outlook, and quality assurance in Indian higher education poses significant challenges and issues in both quantitative and qualitative ways (Agarwal, 2006; Sharma, 2020). To meet the challenges and opportunities of the 21st century, there is currently an urgent need to work toward the improvement of all educational segments.

The biggest problem facing Indian higher education is that it has not developed a curriculum or program of study in the context of the twenty-first century when issues related to ecology, technology's latest advancements, human welfare, and the planet's welfare are all equally important. Only a curriculum that connects and integrates these issues and uses critical thinking to address them will enable us to make a significant breakthrough. The curriculum's output must have a technological impact, so students must be able to acquire digital skills, which will eventually cause the learners to develop a digital culture. Regardless of gender, caste, or geography, higher education curricula are designed to prepare students to acquire the knowledge, skills, and competencies specifically for their chosen careers. However, a closer examination of the enrolment in professional courses in Indian higher education shows that there is still a discernible gender gap. The All-India Survey on Higher Education

data unequivocally shows that private institutions enroll more students in professional courses than government-funded higher education institutions do, both at the undergraduate and graduate levels. When compared to their enrollment in undergrad and graduate social science and humanities courses, women are underrepresented in professional education. This disparity is rather large. (Aishe, 2019)

There are other fundamental issues that higher education in India is currently facing that need to be addressed here, even as we draw attention to the problems and difficulties with the curriculum. These include inadequate facilities and infrastructure, a high number of open faculty positions, low student enrollment rates, outmoded teaching strategies, declining research standards, uninterested students, crowded classrooms, and pervasive racial and ethnic disparities. Numerous rural colleges lack viability, have low enrollment, subpar facilities, and infrastructure, and only a small number of instructors.

The need for constant curriculum updates to keep up with the rapid advancements in science and technology, globalization, and the ensuing competition from international universities are some of the major challenges facing the higher education system. While ICT integration into higher education policies may be important, it won't be able to completely address all of these problems, even though it will likely play a significant role in the sharing of resources and information.

If the government implements educational policies that emphasize the value of incorporating technological methods of curriculum transaction, then this kind of challenge may be mitigated to some extent. With SWAYAM, for example, we can observe that every educational transaction is completed online. Thus, it is imperative to improve higher education by digitizing it and to provide teachers and students with the tools they need to use ICT and digital technology wisely. The curriculum has to be updated to foster a generation of students who are technologically savvy and digitally literate. Thus, it stands to reason that technological intelligence and digital literacy abilities would help students create a digital culture in the classroom. Current demands call for updating and modernizing our curricula to improve our higher education system and produce more technically trained youth who can benefit our nation.

- ***Incorporating digital literacy and technological intelligence into the curriculum.***

Higher education policymakers and curriculum planners should give this issue careful thought because there is an urgent need to equip and enable the youth to effectively handle the challenges of the twenty-first century. This presents difficulties for educators, and the uncertainties and ambiguities in the globalized world for curriculum reform in higher education are the issues faced by policymakers and other stakeholders.

The changes in education and the endless opportunities for lifelong learning have been accelerated by ICT advancements once again. As a result, it is imperative to create a new paradigm for higher education that properly synchronizes technological intelligence with digital literacy abilities. Digital literacy skills comprise a wide range of complex cognitive, motor, sociological, and emotional abilities that learners must have to function well in digital environments. They go beyond simply knowing how to use software or operate a digital device (Leahy & Wilson, 2014).

In addition to giving academics a more efficient way to communicate when creating better user-oriented environments, this recently developed idea of "digital literacy" may be used to assess how well students perform in digital contexts. The ability to use technology effectively and appropriately is known as digital literacy. Information, media, and communication are all included.

✓ **Information Literacy:**

Because there is so much information available to learners in the 21st century, information literacy is important. Parents, teachers, and students can all access the vast information repository at their fingertips. Therefore, the difficulty lies in determining and comprehending the authenticity and

reliability of the information that is easily accessible. From now on, being "information literate" would refer to having the ability to find, evaluate, analyze, and apply accurate and reliable information from reliable sources. Students must ensure that the material they use is trustworthy, accurate, and dependable in higher education since they are expected to be self-directed learners. They must be able to pick the most important and useful information and know how to combine it and present it to others for their benefit. (Trilling and Fadel, 2009).

✓ **Media Literacy:**

The connecting, producing, and contributing of knowledge by the learner is the essence of 21st-century learning. Therefore, students who are confined by digital media and technology must learn how to make the most of the resources they obtain from diverse media sources and employ media production tools to generate captivating media products and messages. Hence, having media literacy skills allows one to access, analyze, and produce information and messages in a variety of ways. Learners must understand how to use the media resources at their disposal for their education when they are surrounded by diverse media messages. In this context, media literacy is defined by Partnership for 21st Century as the capacity to both create and analyze media. The ability to create media products requires the use of a variety of media creation tools, and the ability to analyze media messages entails looking at how people interpret and comprehend the media messages.

Information and Communication Technology: In the twenty-first century, literacy is an essential skill. The students of the twenty-first century were immersed in digital media from birth and have grown up digitally since childhood. Even though today's students are typically more adept at using digital technology than their parents and teachers were, they will still require instruction on how to use and incorporate it properly for their educational goals. Therefore, a curriculum created for them needs to include strategies for making the most of the new ICT tools to deliver a better education in a manner that the learners find appealing. Technology should be used as a primary tool for teaching, learning, and communication in real-world settings.

This skill suggests using communication networks and technology to access, manage, and create knowledge. A person with ICT literacy skills can access, manage, and use social media, internet resources, and information and communication tools to function effectively in the knowledge economy.

These digital literacies are also driving learners' learning styles and are critical to preparing a learning approach in the contemporary educational scenario. The degree of technological intelligence possessed by an individual determines their level of digital literacy. Because various regions of the world are currently experiencing a globalization of technology and education, technological intelligence is crucial. The world is changing quickly to become a global village, and through various forms of technological intelligence and communications in educational settings, India is quickly becoming more globally networked. The ability of learners to understand and utilize the most recent technological advancements needs to be raised in this context. The goal of the higher education curriculum of the modern era must be redesigned to produce technologically literate individuals. It speaks to learners' capacities to think, act, and manage technologically to optimize the advantages of diverse forms of technology. The graduates may thus go on to become technologically savvy leaders who can further society's technological advancement. The development of digital literacy abilities requires technological intelligence as a necessary and fundamental component. The latter helps students become more technologically literate.

As a result, it is evident that improving technological intelligence and including digital literacy skills in the curriculum are vital. Integrating the teaching, innovation, and research components is crucial to achieving this goal and raising the professional competency of graduating students. It was further noted that fostering students' capacity for creative thought requires the provision of friendly

surroundings. Additionally, curriculum flexibility is necessary for meaningful learning outcomes and is urgently needed to produce human resources that are more employable.(Cheng, 2000).

- ***A Proposal Roadmap for the Integration of Digital Skills.***

The needs of graduates in higher education settings today and in the world at large are very different from those of the previous century. The skills required to compete in the twenty-first century are far more complex and multifaceted. As a result, a curriculum designed for students in this century must include the components, competencies, and skills necessary for meeting the challenges of this century. Creating self-sufficient and complete human beings is the main goal of designing a curriculum for higher education. Thus, the curriculum for digital natives needs to be completely redesigned, with an emphasis on technological intelligence and digital literacy skills. The following policies can be prioritized to achieve this: graduates of higher education in this century ought to be considered knowledgeable leaders and contributors to the advancement of society, not just technicians or specialists in particular fields. (Barr & Tagg, 1995).

Given that the entire century is focused on digitization, they must be technologically astute leaders. Thus, the development of critical thinking, creativity, and innovation must be the main goals of the higher education curriculum in the twenty-first century. This is accomplished in cooperative and team-oriented learning environments where media literacy, information, and communication skills are integrated.

The curriculum's integration of technological intelligence and digital literacy skills aids in the more precise and accurate achievement of educational objectives. Teachers and students can discover each other's teaching methods and learning preferences by incorporating technology.

The use of ICTs in higher education has far-reaching effects because they increase student accessibility, interest, effectiveness, and innovation. But using software, PowerPoints, and audiovisual materials alone is not the right way to teach. To help students and teachers become ethical digital natives and gain a thorough understanding of 21st-century digital culture, appropriate guidance is required. This will enhance students' learning experiences. Individual differences were not taken into consideration and the traditional higher education curriculum was never flexible. All of the students, regardless of their unique differences, were given the same materials and forced to learn the material in the manner that the teachers deemed appropriate.

As a result, the primary goals of higher education in terms of fostering productivity, creativity, and critical thinking lag. However, by rethinking the higher education curriculum to integrate technological intelligence and digital literacy skills, this problem can be resolved successfully. With this strategy, different online courses will be created using a model that digital natives can easily understand and value, which will lessen the limitations.

In the future, the educational scenario will include a discussion on technology infrastructure. To conduct higher education courses in the twenty-first century, higher education institutions must have strong computing, networking, and connectivity infrastructure. The curriculum needs to mandate the inclusion of digital aspects to close the digital divide between students and educational institutions in the upcoming years. This would imply that every educational institution needs to create a simpler digital and technological environment.

Several approaches are needed to address the very pertinent question of how to integrate these skills into the higher education system. The strategies include creating a curriculum that emphasizes digital skills with a special reference and 21st-century skills, putting skills-centered pedagogy into practice in higher education institutions, and cultivating digital skills through a range of extracurricular activities. The following are a few of the methods.

- ✓ **Courses to Improve ICT Skills**

The appropriate integration of 21st-century skills into the curriculum can promote the maximum development of skills related to learning, life, and digital skills. This necessitates higher education courses that are skills-based. Teaching ICT as a stand-alone skill-based course is necessary to foster ICT literacy, which includes the knowledge, abilities, and application of information and communication technology. In other words, study ICT as a subject, use ICT as a tool for learning, and learn with it. We ensure that students grasp digital literacy in every situation.

✓ **Pedagogy centered on competency:**

The lack of ICT skills among young people can be somewhat addressed if there is a framework in place to encourage innovative and comprehensive methods of incorporating digital skills into daily life and education. Students would surely learn the material and acquire the skills needed to access, manage, evaluate, and apply the knowledge kept in knowledge repositories if a competency-based approach.

✓ **Extracurricular pursuits:**

The relevance of extracurricular activities may aid in improving students' digital literacy abilities because it is a common misconception that the majority of learning occurs outside of the classroom. The design of the extracurricular activities should give the students the chance to become proficient in online learning and to become more knowledgeable about utilizing different digital technologies.

The digital and technological skills have been integrated into the higher education system, it is concluded, taking into account the aforementioned ICT skillsenhancing courses, competency-centered pedagogy, and co-curricular activities.

7. Conclusion:

The twenty-first century has seen an explosion in knowledge across the globe thanks to information and communication technologies. Many job opportunities arise as a result, and changes in the educational and economic spheres happen quickly. Additionally, this forces complicated business, political, scientific, health, and environmental issues on the entire planet. Thus, there is a pressing need for a new generation that can grasp the many opportunities and possibilities that lie ahead and respond to the needs of the modern era.

Rather than lingering on particular concepts and ideas, the curriculum for higher education in the twenty-first century needs to emphasize different ways to engage and enrich students. To create knowledge rather than merely transmit it, it must improve collaboration and ensure learning outcomes. Government educational agencies' main responsibility is to comprehend how learners' needs are changing and adapt to regional and international trends in education.

The digital revolution has had a significant impact on education, with more and more classrooms being connected to the internet. As a result, educational authorities can prepare students for the future by updating the curriculum, introducing new programs, and encouraging technological advancements in the classroom. The knowledge revolution may have changed our lives and our educational system, so we must change it as well. However, are our educational institutions utilizing the majority of the new technologies? Rethinking education in the age of technology would make this possible. We need to reconsider how we educate the next generation if we want to stay up with a globalized technological culture; otherwise, India will fall behind. To include online social networks, remote learning with "anytime, anywhere access," digital homeschooling models, online learning environments, and more, the higher education curriculum of the twenty-first century must extend far beyond the classroom.

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Emerging Technologies in Education**Dr. Sanadi Dinesh Annappa Shalini.**

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Abstract

As technologies develop quickly, they emerge impacts on various sectors, one of them being education. New technologies, as artificial intelligence, virtual reality, and blockchain, are impacting the future of education by ensuring better learning experiences, personalization, and increasingly better administrative efficiency. This paper looks to present an overview of current trends and possible benefits and challenges that may emanate in today's educational space through in-depth analysis of implications for the future of education.

Keywords: Emerging Technologies, Education, Artificial Intelligence, Virtual Reality, Blockchain, Personalised Learning

Introduction

New technologies of education have been put into place for only a few years. These innovative methods and tools used in the educational institutions are continuously adopted for more effective teaching and learning. The technologies not only offer new ways of delivering content but also provide opportunities to respond to questions of access, equity, and students' engagement in learning education. The focus of this paper is the contribution of emerging technologies to education, namely AI, VR, and blockchain, that have the ability to transform the educational ecosystem in many ways.

Artificial Intelligence in Education**1) Personalization in Learning**

Artificial intelligence can change the way personalized learning in education works by customizing the educational content according to the needs of a student. AI can analyze students' learning patterns, preferences, and their progress to customize and create learning experiences for students (Chen et al., 2020). Such systems can be developed to identify the problem areas of each student and suggest interventions in a clearly, efficiently, and effectively presented manner.

2) Intelligent Tutoring Systems

Another application of artificial intelligence in education is through the development of ITS, which can simulate one-on-one tutoring. ITS can provide instant feedback as well as guidance to students. So, in this process, it fulfills the shortfall between a student and a teacher, specifically in those large-classroom situations where attention to every individual is not possible.

3) Educational AI

is brimming with potential, yet it faces some challenges: data privacy issues and possible algorithm biases. These are real problems that have to be properly addressed if AI technology is to be put into use responsibly and equitably in an educational milieu.

4) Virtual and Augmented Reality**Immersive Learning Experiences**

More immersive learning can be positively impacted by the appearances of virtual reality and augmented reality. The technologies create a medium in which learners could interact with digital content in three-dimensional spaces—hence, abstract ideas could be transformed into practical and

effective comprehension. For example, VR could be used for simulating historical events, giving the students firsthand experience.

5) Increased Engagement and Motivation

As for VR and AR, they actually help promote students' involvement and interest in the learning process. They can make learning fun, interactive, and more engaging. Such technologies will allow making a process of learning in games. Therefore, an individual can get an immediate response and rewards for the students' achievements (Liu et al., 2017).

Challenges and Limitation

There are, however, several problems in the wide acceptance of VR and AR for educational uses: first, high equipment costs, and second, technical knowhow to develop and implement them (Dede, 2009). Moreover, it runs the risk of the novelty of VR and AR overshadowing the actual content of education—that is, focusing on the technology rather than learning outcomes.

6) Blockchain Technology in Education

Secure Credentialing

Blockchain technology is best known for its application in cryptocurrencies, but it is now being investigated for what is possibly meant by secure credentialing in education. Blockchain has been proposed as a way to have a decentralized, tamper-proof system for issuing and verifying educational documents and credentials, like diplomas and certificates. This helps in avoiding fraud and ensuring the authenticity of such academic documents.

7) Decentralized Learning Platforms

It can also potentially support decentralized learning platforms where students have access to educational resources and credentials, not having had to rely on traditional education providers. With this democratization of education, more control will be given to learners over their educational journeys.

Challenges and Considerations

Even though blockchain use in education holds potential, its application in this domain is still at a preliminary stage, with several challenges having to be overcome, like problems of scalability and wide acceptance (Chen, 2018). Furthermore, the regulatory and legal projects of the usage of blockchain for educational purposes are still unclear.

8) Implications for the Future of Education

Thus, the integration of new learning technologies into education can create a real change in the educational landscape. Still, it is necessary to treat the new technologies with care and attention paid to the wide context of its application for society. If educators and policymakers are to tread carefully through this new terrain, they must ensure that technology is used to enhance, rather than replace, the human element in education.

Conclusion

Innovational technologies such as AI, VR, AR, and blockchain are changing education with new strategies for content delivery, new student engagement techniques, and new models for managing educational processes. These technologies have great potential but, at the same time, challenge the status quo with issues that must be addressed to reap the benefits of these technologies fully. As the educational technology field continues to develop, it will be crucial to assure that these innovations are developed and implemented in such ways as to promote equity, access, and ethical use.

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राष्ट्रीय शिक्षण धोरण आणि शैक्षणिक ग्रंथालयाची भूमिका

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सार :

भारताला जागतिक ज्ञान महासत्ता बनविण्यासाठी, शालेय आणि उच्च शिक्षणामध्ये परिवर्तनात्मक सुधारणा घडवून आणणे आणि समतापूर्ण व गुणवत्तापूर्ण समाजाचा विकास करण्यासाठी, देशाच्या विकासाचा चालना देण्यासाठी, विकासात्मक क्षेत्रात धोरणाकडे लक्ष देणे आणि सार्वत्रिक शिक्षण लवचिक व बहुविद्याशाखीय बनवून 21 व्या शतकातील गरजा लक्षात घेऊन अष्टपैलू आणि कल्पक व्यक्तिमत्त्व विकसित करणे, त्याचप्रमाणे भारतातील उच्च शिक्षण प्रणालीमध्ये सध्या ज्या मुख्य समस्या व आव्हाने निर्माण झालेले आहेत त्यावर मात करण्यासाठी उच्च शिक्षण प्रणालीमध्ये नूतनीकरण करणे तसेच समता व सर्वसमावेशक असे उच्च गुणवत्तेचे उच्च शिक्षण अमलात आणून सर्वाना प्रदान करणे हे राष्ट्रीय शिक्षण धोरण 2020 (NEP- 2020) यामध्ये संकल्पित आहे.

त्याचप्रमाणे देशाच्या विकासाचा चालना देण्यासाठी व संपूर्ण प्रादेशिक भाषामध्ये शिक्षण सामुग्रीची सुलभता व उपलब्धता वाढविण्यासाठी आणि सार्वत्रिक शिक्षण प्रदान करण्यासाठी राष्ट्रीय शिक्षण धोरण- 2020 अंतर्गत व्यापक पुढाकार घेतला जाणार आहे. शैक्षणिक संस्था, शाळा, महाविद्यालय आणि ग्रंथालय (सार्वजनिक व शैक्षणिक) याबाबतीत देखील NEP- 2020 धोरणामध्ये सविस्तर नियमावली तयार केलेली आहे. त्यानुसार शाळा महाविद्यालय व ग्रंथालय यामध्ये आधुनिक पायाभूत सेवा आणि सुविधा यावर भर देण्यात आलेला आहे. शैक्षणिक संस्थांमध्ये डिजिटल ग्रंथालय विकसित करणे, राष्ट्रीय पुस्तक प्रोत्साहन धोरण अंतर्गत वाचनाचे महत्त्व लक्षात घेऊन प्रत्येक वाचकांच्या वाचन सवयींना चालना देण्यासाठी ग्रंथालयामध्ये वाचकांच्या आवडी व गरजा लक्षात घेऊन गुणवत्तापूर्ण व आनंददायी, प्रेरणादायी वाचनसंग्रह विकसित करणे तसेच सर्व प्रकारच्या वाचकांसाठी आधुनिक माहिती तंत्रज्ञानावर आधारित सेवा सुविधा पुरविणे, सामाजिक बुक क्लब स्थापन करणे संकल्पित आहे.

शोधसंज्ञा : राष्ट्रीय शैक्षणिक धोरण 2020, राष्ट्रीय शिक्षण धोरण 2020 मध्ये ग्रंथालयाची भूमिका

प्रस्तावना

सदरील शोधनिबंधात **राष्ट्रीय शिक्षण धोरण 2020** आणि ग्रंथालयाची भूमिका यावर आधारित माहितीचा शोध घेण्यात आलेला आहे. त्यामुळे शोधनिबंधामध्ये राष्ट्रीय शैक्षणिक धोरणाचा उद्देश व फायदे, शैक्षणिक धोरणातील प्रमुख बदल, राष्ट्रीय शैक्षणिक धोरणामध्ये ग्रंथालयासाठी प्रस्तावित असलेल्या तरतुदी इत्यादी बदल माहिती देण्याचा प्रयत्न संशोधकाने केलेला आहे. प्रस्तुत लेखातील माहिती विविध संकेतस्थळावरून संकलित केलेली आहे.

भारत हा जगातील सर्वात तरुण राष्ट्रांपैकी एक आहे. त्यामुळे जागतिक स्तरावर जे शैक्षणिक मानांकन आहेत त्यांचा स्वीकार करत भारताची जागतिक स्पर्धेमध्ये सामाजिक, आर्थिक, शैक्षणिक व क्रीडा तसेच संशोधन व विकास या क्षेत्रात ओळख निर्माण करण्यासाठी आधुनिक समाजाची गरज लक्षात घेऊन जुन्या शैक्षणिक धोरणातील उनिवा लक्षात घेऊन भारत सरकारच्या केंद्रीय मंत्रिमंडळाने दिनांक 29 ऑगस्ट 2020 रोजी ज्येष्ठ वैज्ञानिक पद्मभूषण कृष्ण स्वामी कस्तुरीरंगन यांच्या अध्यक्षतेखाली '**राष्ट्रीय शिक्षण धोरण- 2020**' (**National Education Policy-2020**) जाहीर करून मान्यता देण्यात आली आहे. यात नवीन शिक्षण पद्धतीची रुपरेषा मांडण्यात आलेली आहे. राष्ट्रीय शिक्षण धोरण- 2020 याबद्दल संक्षिप्त स्वरूपात असे म्हणता येईल की, समाजामध्ये करुणा, सहानुभूती, धैर्य व लवचिकता, वैज्ञानिक विचार व नैतिक मूल्य आणि मुलांमध्ये सर्जनशीलता, कल्पनाशक्ती असणारे तर्कशुद्ध विचार आणि तशी कृती करण्यास सक्षम, चांगले सुजाण नागरिक निर्माण करणे हा राष्ट्रीय शिक्षण धोरणाचा उद्देश आहे. त्याचप्रमाणे सर्वांसाठी सर्वसमावेशक आणि समान गुणवत्तेचे शिक्षण सुनिश्चित करणे आणि सर्वांसाठी निरंतर अध्ययनाच्या संधीना प्रोत्साहन देणे, ई-शिक्षण प्रणाली विकसित करणे यासाठी प्रयत्न करीत भारताला जागतिक ज्ञान महासत्ता बनवणे हा मुख्य उद्देश आहे.

राष्ट्रीय शैक्षणिक धोरणातील प्रमुख बदल : राष्ट्रीय शिक्षण धोरणातील सकारात्मक प्रभावांमध्ये शैक्षणिक लवचिकता, कौशल्य विकासावर भर, माहिती तंत्रज्ञानाचा वापर, बहुविषय शैक्षणिक दृष्टिकोन आणि उच्च शिक्षण प्रणाली मध्ये सुधारणा, व्यावसायिक शिक्षणाला प्रधान देणे इ. समावेश आहे. तसेच ५+ ३+ ३ + ४ अशा चार टप्प्यात नवीन शैक्षणिक संरचना करण्यात आलेली आहे.

राष्ट्रीय शैक्षणिक धोरण आणि शैक्षणिक ग्रंथालयाची भूमिका:

ग्रंथालय हे कोणत्याही शैक्षणिक संस्थेचे हृदय असते. त्यामुळे ग्रंथालयातील सेवा सुविधा, ग्रंथालयातील पारंपारिक व आधुनिक वाचन साहित्य जसे की शैक्षणिक पुस्तके, संदर्भ ग्रंथ वाङ्मय, नियतकालिके आणि ई-रिसोर्सेस, ई-बुक, व्हिडिओ इत्यादी खरेदी करणे व व्यवस्थापन करणे आणि माहिती तंत्रज्ञावर आधारित सेवा सुविधा पुरविणे यावर भर देण्यात येणार आहे.

नवीन राष्ट्रीय शिक्षण धोरण 2020 मध्ये काळानुसार परिस्थितीनुसार व वाचकांच्या गरजेनुसार पारंपारिक व आधुनिक वाचन साहित्याचा योग्य मेळ घालून ग्रंथालयातील वाचकांना शैक्षणिक व संशोधन विकासात गुणवत्तापूर्ण वाचन साहित्य उपलब्ध करून देणे तसेच ग्रंथालयामध्ये माहिती तंत्रज्ञानाचा वापर वाढवून आधुनिक सेवा सुविधा वाचकांना देणे. त्याचप्रमाणे NEP- 2020नुसार 'लर्निंग अँड रिसोर्स हब' म्हणून कार्य करणारी ग्रंथालय निर्माण करण्यावर भर देण्यात येणार आहे. म्हणून सर्व ग्रंथालये काळानुसार बदल स्वीकारून आधुनिक होऊन राष्ट्रीय शिक्षण धोरणाची जी उद्दिष्टे आहेत ती साध्य करण्यासाठी महत्वाची भूमिका बजावू शकतात. यादृष्टीने ग्रंथालयावर लक्ष केंद्रित करीत ग्रंथालयाचे बळकटीकरण, विविध भाषेतील प्रेरणादायी व उपयुक्त पुस्तकांचे प्रादेशिक भाषेत भाषांतर करून वाचकांना उपलब्ध करून देणे आणि शैक्षणिक व संशोधनात्मक वातावरण निर्माण करणे, वाचनाविषयी आवड निर्माण करणे इत्यादी बाबींवर एनईपी- 2020 मध्ये भर देण्यात आलेला आहे. त्यानुसार कांही महत्वाच्या तरतुदी खालील प्रमाणे सविस्तर सांगता येतील.

➤ **ग्रंथालयासाठी पायाभूत सोयी सुविधा निर्माण करणे :** ग्रंथालयांमध्ये योग्य व आवश्यक पायाभूत सुविधा निर्माण केल्या तर सर्वच इच्छुक वाचकांना शालेय शिक्षणापासून ते उच्च शिक्षणापर्यंत शिकण्यासाठी व शिकवण्यासाठी, संशोधनासाठी, प्रौढ-शिक्षणासाठी तसेच वंचित घटकातील व दिव्यांग वाचकांसाठी ग्रंथालयाचा उपयोग होईल. यादृष्टीने ग्रंथालय आधुनिक माहिती तंत्रज्ञानाने (ICT) सुसज्ज व समृद्ध असेल आणि ग्रंथालयातील पायाभूत सेवा सुविधांचा वापर व देवाण-घेवाण तसेच भौतिक आणि मानवी संसाधनाचा वापर करण्यास प्रोत्साहन देण्यात येणार आहे. त्याचप्रमाणे पिण्याचे स्वच्छ पाणी, शौचालय तसेच सुखदायी शैक्षणिक वातावरण, सुसज्ज अभ्यासिका व अद्यावत शैक्षणिक साहित्य व शैक्षणिक तंत्रज्ञान उपलब्ध असेल अशी तरतूद देखील एनईपी- 2020 मध्ये करण्यात आलेली आहे.

➤ **ग्रंथालयासाठी पुरेसा मनुष्यबळ :** मानवी संसाधने ही कोणत्याही संस्थेतील महत्वाचे घटक असतात. त्याचप्रमाणे ग्रंथालयातील सेवा सुविधा सर्व वाचकांना उपलब्ध करून देण्यासाठी प्रशिक्षित व कुशल ग्रंथालय कर्मचारी वर्ग महत्वाचा घटक आहे. ग्रंथालयामध्ये ग्रंथालय कर्मचारी + वाचक + वाचन साहित्यसंग्रह यांचा त्रिवेणी संगम असतो आणि यांना एकत्रित गुंफून ग्रंथालय सेवा सुविधांचे व्यवस्थापन ग्रंथपाल करीत असतो. म्हणून ग्रंथालयाच्या वाचकांना दर्जेदार सेवा सुविधा प्रदान करण्यासाठी पुरेसा ग्रंथालय कर्मचारी व मनुष्यबळ असणे अत्यंत आवश्यक आहे. त्यामुळे प्रेरित, उत्साही, कौशल्यपूर्ण सक्षम, गुणवत्तापूर्ण मनुष्यबळ निर्माण करण्यासाठी, आधुनिक प्रशिक्षण तसेच कायमस्वरूपी नोकर भरती, योग्य वेतन व मानधन आणि व्यावसायिक विकासाच्या संधी उपलब्ध करून देणारे उपक्रम राबविणे इत्यादी शैक्षणिक धोरणात सुनिश्चित करण्यात आलेले आहे.

➤ **ग्रंथालयातील वाचन साहित्याची उपलब्धता :** राष्ट्रीय शिक्षण धोरणामध्ये दर्जेदार शिक्षण, संशोधन विकास, प्रौढ शिक्षण, मूलभूत साक्षरता, नाविन्यपूर्ण उपक्रम आणि निरंतर अध्ययनाच्या सोयी उपलब्ध असतील असे पूर्वनियोजित केले आहे. तसेच दिव्यांग आणि इतर सर्व विद्यार्थ्यांच्या शैक्षणिक गरजा भागविण्यासाठी त्यांची आवड पूर्ण करण्यासाठी आणि वाचन संस्कृती जोपसण्यासाठी दर्जेदार पुस्तकांची उपलब्धता अत्यंत आवश्यक असते. त्यामुळे त्यादृष्टीने आजचा सर्व समुदाय आणि सर्व शैक्षणिक संस्था (शैक्षणिक ग्रंथालय, संशोधन ग्रंथालय व सार्वजनिक ग्रंथालय) यामधील वाचकांच्या /विद्यार्थ्यांच्या आवडीनुसार व गरजेनुसार सर्व समाजातील. सर्वच घटकातील ग्रंथालय वाचकांसाठी व विशेष प्रकारच्या दिव्यांग-अपंग-दृष्टीहीन इ. वाचकांसाठी आधुनिक सेवा सुविधा, त्यांच्या आवडीनुसार व गरजेनुसार वाचनसाहित्य संग्रह उपलब्ध करून देण्याच्या तरतुदी आहेत. तसेच प्रादेशिक भाषेत भाषांतरित

वाचनसाहित्य (इतर भाषेतील) उपलब्ध करून देणे देखील नियोजित आहे. त्यामुळे ग्रंथालयाने सुसज्ज असणे व पुढाकार घेणे आवश्यक आहे.

➤ **सद्यस्थितीत अस्तित्वात असलेल्या सर्वच ग्रंथालयाचे आधुनिकरण व बळकटीकरण करण्याची आवश्यकता :** भारतामध्ये सद्यस्थितीत अस्तित्वात असलेल्या सर्वच ग्रंथालयाचे म्हणजे शैक्षणिक ग्रंथालय, संशोधन ग्रंथालय, विशेष ग्रंथालय व माहिती केंद्र यांचे आधुनिकरण, बळकटीकरण व मजबूतीकरण करणे आवश्यक आहे. तसेच दुर्गम भागातील वंचित भागामध्ये ग्रंथालय स्थापन करणे, वाचन कक्ष निर्माण करणे, भारतीय भाषांमध्ये मोठ्या प्रमाणात वाचन साहित्य व शैक्षणिक सामग्री उपलब्ध करून देणे, मुलांसाठी बाल ग्रंथालय आणि मोबाईल लायब्ररी स्थापन करणे, वेगवेगळ्या विषयावरील 'सामाजिक बुक क्लब' ची स्थापना करणे तसेच ग्रंथालयामध्ये आधुनिक माहिती तंत्रज्ञानाचा वापर करून ग्रंथालय मजबूत करणेजेसे की, ग्रंथालय संगणकीकरण, मोबाईलद्वारे ऑनलाइन सेवा, शैक्षणिक ॲप्स, उपग्रहाद्वारे आधारितशैक्षणिक उपक्रम(टीव्हीद्वारे), ऑनलाइन पुस्तके, शैक्षणिक रिसोर्सेस व माहिती तंत्रज्ञाने सुसज्ज प्रौढ शिक्षण केंद्र व शैक्षणिक माहिती साधन केंद्र इत्यादी स्वरूपात राष्ट्रीय शैक्षणिक धोरणात तरतुदी करण्यात आलेले आहेत. त्यामुळे सध्याची विद्यमान ग्रंथालयाने शैक्षणिक विकास व संशोधनात नक्कीच महत्त्वपूर्ण भूमिका बजावतील व दर्जेदार शिक्षणाची अंमलबजावणी करीत राष्ट्राच्या प्रगतीत महत्त्वपूर्ण भूमिका बजातील असे स्पष्ट आहे.

➤ **अवांतर व विशेष वाचनसाहित्य :** शैक्षणिक धोरणामध्ये विशेष घटकांसाठी प्रौढ शिक्षण, दिव्यांग शिक्षण व वंचित घटकांचे शिक्षण यावर लक्ष केंद्रित केले आहे. त्यामुळे ग्रंथालयांमध्ये या विशेष वाचकांसाठी त्यांचे आवडीचे व उपयुक्त वाचन साहित्य उपलब्ध करून देणे सुनिश्चित केल्या गेले आहे त्याचप्रमाणे शैक्षणिक वाचन साहित्य याबरोबरच अवांतर वाचनासाठी कथा, कादंबरी प्रेरणादायी महापुरुषांची चरित्र व व्यक्तिमत्व विकासावरील पुस्तके यांचा संग्रह करून वाचकांना उपलब्ध करून देणे नियोजित आहे.

➤ **वाचन संस्कृती वाढीस लावणे :** देशभरात वाचन संस्कृती बळकट करण्यासाठी व नववाचकांमध्ये वाचन सवयींना प्रोत्साहन देण्यासाठी, विविध उपक्रम राबविणे नियोजित आहे. त्यामुळे ग्रंथालयाने वाचन संस्कृती वाढीस लावण्यासाठी पुढाकार घेणे आवश्यक आहे.

➤ **ग्रंथालय सहकार व ग्रंथालय जागेचा उपयोग :** आधुनिक माहिती परिस्फोटाच्या युगात कोणतेही ग्रंथालय मूलभूत सुविधा व वाचन साहित्याने परिपूर्ण असू शकत नाही त्यामुळे ग्रंथालय सहकार संकल्पनेचा वापर करून दर्जेदार आधुनिक सेवा सुविधा उपलब्ध करून देण्यावर भर देण्यात येणार आहे. राष्ट्रीय शैक्षणिक धोरणात प्रौढ शिक्षण, दिव्यांगांसाठी विशेष शिक्षण आणि शिक्षणात ज्यांना ज्यांना स्वारस्य आहे त्या सर्वानाच अजीवन शिकण्याची प्रक्रिया सुनियोजित केलेली आहे. त्यामुळे ग्रंथालय यासर्व वाचकांना पायाभूत सुविधा उपलब्ध करून देण्यासाठी कार्य करेल तसेच सार्वजनिक ग्रंथालय व शैक्षणिक ग्रंथालय यांच्या जागेचा व पायाभूत सुविधांचा वापर शैक्षणिक सुट्टीच्या दिवशी अथवा शाळेच्या तासानंतर निरंतर शिक्षणासाठी व विशेष वाचकांसाठी करण्यात येईल यासाठी माहिती तंत्रज्ञानाने सुसज्ज असलेली शैक्षणिक संस्था व ग्रंथालयांचा वापर करण्यात येणार आहे. तसेच मूलभूत सुविधा शेअर करणे व मनुष्यबळ संसाधनाचा कार्यक्षम वापर करणे नियोजित आहे.

सारांश: भारतीय शिक्षण व्यवस्थेत आधुनिक सुधारणा करण्याची फार मोठी क्षमता राष्ट्रीय शैक्षणिक धोरण 2020 मध्ये नक्कीच आहे. पण सदरील धोरणाची प्रमाणिकपणे अंमलबजावणी होणे आवश्यक आहे तसेच ज्या काही त्रुटी आहेत त्यांचा पुनर्विचार करणे देखील तितकेच महत्वाचे आहे.

सर्वच ग्रंथालयाचे आधुनिकीकरण व बळकटीकरण झाले पाहिजे तसेच पुरेसा कर्मचारी वर्ग व आर्थिक पाठबळ जर ग्रंथालयास लाभले तर नक्कीच राष्ट्रीय शैक्षणिक धोरणाची उद्दिष्टे साधे होतील. त्यामुळे ग्रंथालय आणि माहितीशास्त्र व्यावसायिकांनी आधुनिक व डिजिटल जगाशी जुळवून घेत ग्रंथालयामध्ये प्रत्यक्ष माहिती तंत्रज्ञानचा(आयसीटी) वापर करीत स्वतंत्रइंटरनेट सेवा,ऑडिओ- व्हिडिओ केंद्र, आधुनिक वाचन साहित्यहाताळणी सुविधा (ऑडिओ बुक,ई-वाचनसाहित्य), सुसज्ज वाचनकक्ष इत्यादी आधुनिकमाहितीसेवा देत माहिती साक्षरता व डिजिटल साक्षरता केंद्रम्हणून कार्य करीतशैक्षणिक, सामाजिक व संशोधन विकासात महत्त्वपूर्ण भूमिका बजावत देशाच्या प्रगतीत मुलाचे योगदान नक्कीच देतील.

संदर्भसूची

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शिक्षणातील उदयोन्मुख तंत्रज्ञान

डॉ. घटकार डी. टी.

सहायक प्राध्यापक ग्रंथालय आणि माहितीशास्त्र विभाग,
संभाजीराव केंद्रे महाविद्यालय, जळकोट

सार: आजचे युग हे विज्ञान तंत्रज्ञानाचे युग आहे असे संबोधले जाते. सध्याच्या युगात शिक्षण क्षेत्रातील सर्वात मोठे क्रांतिकारी बदल तंत्रज्ञानाच्या मदतीने झालेले दिसून येतात. शैक्षणिक क्षेत्रामध्ये विविध तंत्रज्ञानाचा समावेश करण्यात येत आहे ज्यामुळे परंपरागत शिक्षणासारखे हे शिक्षण ठराविक कालावधीसाठी न राहता शिक्षण ही नवीन काही शिकू पाहणाऱ्या विद्यार्थ्यांसाठी उपयुक्त संधी उपलब्ध करून देणारे माध्यम ठरत आहे असे विधान केल्यास चुकीचे होणार नाही.

कि वर्डस –तंत्रज्ञान, संवर्धित वास्तव (AR), कृत्रिम बुद्धिमत्ता, Internet of Things

महत्त्वपूर्ण संज्ञा :-

तंत्रज्ञान म्हणजे [अवजारे](#), [यंत्रे](#), त्यांपासून बनलेल्या प्रणाल्या यांचे संकल्पन, निर्मिती आणि उपयोजन अभ्यासणारी, तसेच त्यांत सुधारणा घडवून आणण्यासंबंधीची विद्याशाखा होय.¹

संवर्धित वास्तव (AR) ऑगमेंटेड रिलिटी (एआर) म्हणजे रिल टाइममध्ये वापरकर्त्याच्या वातावरणासह डिजिटल माहितीचे एकत्रीकरण.²

कृत्रिम वस्तूने दर्शविलेल्या बुद्धिमान वर्तनास कृत्रिम बुद्धिमत्ता (artificial intelligence, AI) असे म्हणतात. The Internet of Things (IoT) refers to a network of physical devices, vehicles, appliances, and other physical objects that are embedded with sensors, software, and network connectivity, allowing them to collect and share data.⁴

शिक्षणातील उदयोन्मुख तंत्रज्ञान :- शिक्षणातील उदयास आलेल्या तंत्रज्ञानामुळे शिक्षण प्रक्रियेत सुधारणा होत असल्याचे दिसून येत आहे. त्याचा जास्तीत जास्त फायदा घेण्यासाठी शिक्षण क्षेत्रातील अध्यापन करणाऱ्या शिक्षकास तंत्रज्ञानाचे महत्त्व माहित असणे आवश्यक आहे तसेच त्याने उपयुक्त तंत्रज्ञान हाताळता येणे यावर प्रभुत्व मिळविणे गरजेचे आहे.

१. माहिती विश्लेषण :-

माहिती शिवाय कोणतेही विश्लेषण नाही आणि विश्लेषणाशिवाय कोणतीही माहिती नाही. या दोन्ही बाबी परस्परावर अवलंबून आहेत. शैक्षणिक संस्थामध्ये माहिती विश्लेषणाचा वापर ही एक नवीन कल्पना आहे. अस्तित्वात असलेली माहिती व त्यांच्या भविष्यातील शिकण्याच्या शक्यता चांगल्या प्रकारे समजून घेण्यासाठी आणि प्रभावित करण्यासाठी माहिती विश्लेषण प्रक्रिया वापरता येते. माहिती विश्लेषणाच्या माध्यमातून प्रत्येक विद्यार्थ्याच्या शैक्षणिक क्षेत्रातील विकासाचे मोजमाप करण्यास सक्षम असतील, तरच महत्त्वपूर्ण समस्या असलेल्या बाबीवर कार्य करू शकतील. शैक्षणिक तंत्रज्ञान विद्यार्थ्यांना गुंतवून ठेवू शकते आणि माहिती

विश्लेषणाचा वापर विद्यार्थ्यांमधील अध्ययन अध्यापन प्रक्रिया सुधारण्यासाठी सर्वोत्तम मार्गाचा अंदाज मदत करेल.

२. कृत्रिम बुद्धिमत्ता :-

कृत्रिम बुद्धिमत्तामध्ये नियमित स्वरूपातील शिक्षण संस्थेतील अध्यापन आणि प्रशासन प्रक्रिया वेगवान आणि सुलभ करण्याची क्षमता आहे, जी शैक्षणिक क्षेत्रासाठी सर्वात आवश्यक आणि प्रभावी गोष्ट आहे. कृत्रिम बुद्धिमत्ता शिक्षकांना आणि प्रशासकांना गृहपाठ, निकाल, सराव करून घेणे, विद्यार्थ्यांचे प्रतिसाद मोजणे यासाठी एका सहायकाप्रमाणे मदत करू शकते. कृत्रिम बुद्धिमत्ता याचा अभ्यासक्रम आणि प्रश्नपत्रिका तयार करण्यात पण वापर करता येऊ शकतो. अध्ययन आणि अध्यापनातील या सर्व प्रक्रियांना खूप वेळ लागतो. कृत्रिम बुद्धिमत्ता व नियंत्रित तंत्रज्ञानाच्या सहाय्याने या क्रिया खूप वेगवान गतीने करता येऊ शकतात. अभ्यासक्रमातील साहित्याला पूर्ण म्हणून नवीन शैक्षणिक साहित्य विकसित करण्यातही कृत्रिम बुद्धिमत्ता मदत करू शकते.

३. मशीन लर्निंग :-

मशीन लर्निंग हा आर्टिफिशियल इंटेलिजन्स (AI) चा अविभाज्य भाग आहे. आधी घडून गेलेल्या सर्व माहितीवर आधारित निर्णय घेण्यासाठी विद्यार्थ्यांना संगणक अल्गोरिदम सक्षम करते. शिक्षक व्हर्च्युअल असिस्टंट वापरू शकतात. शिक्षणातील मशीन लर्निंग ऍप्लिकेशन्स वापरून वैयक्तिक स्वरूपातील अनेक प्रश्न सोडविले जाऊ शकतात. Learning management system प्रत्येक विद्यार्थ्यासाठी एक-एक प्रकारचा अनुभव उपलब्ध माहितीच्या माध्यमातून अनुभव आणि इतर अनेक योजनांवर आधारित माहितीचे मूल्यांकन करून देण्यास मदत करते. तंत्रज्ञानामध्ये विद्यार्थी वापरकर्त्याद्वारे पुरवलेल्या सर्व माहितीचे मूल्यांकन करण्याची आणि विद्यार्थ्यांचा गरजा पूर्ण करण्यासाठी यामध्ये बदल करण्याची क्षमता आहे.

४. Internet of Things :-

इंटरनेट ऑफ थिंग्ज म्हणजे सर्व भौतिक वस्तूंना इंटरनेटशी जोडणी करणे होय. एकंदरीत कोणतेही यंत्र इंटरनेटच्या माध्यमातून दूरवरून हाताळणे होय. जसे की पंखा लावणे, गाडी चालू करणे किंवा इतर कोणतीही भौतिक वस्तू हे Internet of Things वापरून दूरवरून करता येते. IoT मुळे शिक्षक आणि विद्यार्थ्यांमध्ये संवाद निर्माण करण्यात मदत करते. हे माध्यम विद्यार्थी आणि शिक्षकांना संपूर्ण जगभरातील त्यांच्याशी निगडित लोकांशी संवाद साधण्यास परवानगी देते.

५. Cloud Computing :-

या तंत्रज्ञानाच्या माध्यमातून प्रवेश सुलभता, मापन, संसाधन उपलब्धता या सर्व सुविधा पुरविल्या जातात. जे विद्यार्थी वर्गात उपस्थित राहू शकत नाहीत अशा विद्यार्थ्यांसाठी ऑनलाइन शिक्षण एक माध्यम उपलब्ध करून दिले आहे. पूर्वीनोट्स हस्तलिखित आणि नंतर झेरोक्स किंवा जसा आहेत तशा लिहून तयार केल्या जात होत्या. म्हणूनच शिक्षण क्षेत्रात क्लाउड कॉम्प्युटिंगच्या वापरामुळे कधीही कोठूनही माहिती मिळविणे व ती वापरणे सोपे झाले आहे त्यामुळे वेळ आणि पैसाही वाचतो तसेच ती माहिती उपलब्ध करून घेताना वेळचे बंधनही राहत नाही. ग्रंथालयात पण ई ग्रंथालय ४.० आणि soul ३.० Cloud Computing असलेल्या आज्ञावली वापरात असलेल्या दिसून येत आहेत.

६. Automation:-

प्रत्येक क्षेत्रात चांगल्या प्रकारे सुधारित आणि वेगवान सेवा देण्यासाठी स्वयंचलित करण्याच्या सुविधेचा वापर करतात. शिक्षण क्षेत्रात ऑटोमेशनमुळे विद्यार्थ्यांना अचूक वेळेत व्याख्यान मिळण्याची सुविधा उपलब्ध असते. ग्रंथालयातील उपलब्ध साधनाचा उपयोग या पद्धतीने चांगला करता येतो.

७. शिक्षणामध्ये 5G तंत्रज्ञानाचा वापर :-

वायरलेस तंत्रज्ञानाने आता त्याची पाचवी पिढी किंवा जनरेशन 5G म्हणून ओळखली जाते. जो कोणी याचा वापर करतो तो उच्च कार्यक्षमतेचा आणि कमी लेटन्सी वायरलेस तंत्रज्ञानाचा उपयोग करून घेऊ शकतो. अध्ययन आणि अध्यापन प्रक्रियेत विद्यार्थ्यांना या तंत्रज्ञानाचा खूप फायदा होण्याची शक्यता आहे. विद्यार्थी त्यांना आवश्यक असणारे साहित्य आणि संसाधने पटकन शोधू आणि मिळवू शकतात आणि अधिक चांगल्या शक्तिशाली नेटवर्कशी कनेक्ट होऊ शकतात.

८. संवर्धित वास्तव (AR) :-

एखाद्या ठिकाणापासून खूप दूर म्हणजेच ऑगमेंटेड रिलिटी या तंत्रज्ञानाच्या मदतीने ही संज्ञा अनेकांना शिकण्याच्या काही नवीन पद्धतींचा वापर कसा करावा याबाबत मार्गदर्शन करते. ऑगमेंटेड रिलिटी हे तंत्रज्ञान आजच्या युगात सर्वच क्षेत्रात वापरले जात आहे. ग्राफिक्स, अभियांत्रिकी आणि डिझाईनच्या क्षेत्रात ऑगमेंटेड रिलिटी आणि सिम्युलेशनचा प्रभाव पडला आहे. त्याचा प्रभावशाली वापरामुळे विद्यार्थी शिकत असलेला विषय कसा समजून घेतात याविषयी मदत होते. उदाहरण देऊन सांगायचे झाल्यास विज्ञानातील अनेक प्रयोग प्रत्यक्ष याच्या साह्याने दाखविता येतात. मानवी हृदय कसे कार्य करते या विषयी अध्यापन करत असताना या तंत्रज्ञानाचा चांगला उपयोग होतो. या तंत्रज्ञानामुळे विद्यार्थी शिक्षकांसोबत सहकार्य करतात म्हणून हे उपयुक्त असे माध्यम असल्याचे दिसून येते. ऑगमेंटेड रिलिटी आणि व्हर्च्युअल रिलिटी हे विद्यार्थी आणि शिक्षकांना अध्ययन आणि अध्यापनात गुंतवून ठेवण्याचा मार्ग आहे. विद्यार्थ्यांची अध्ययनातील एकाग्रता वाढवणे आणि त्यांची अध्ययन प्रक्रिया सुधारण्यासाठी तसेच त्याच्या कल्पना शक्तीला वाव देणे या क्रिया यामुळे होणे यात अपेक्षित आहे.

निष्कर्ष :-

शेवटी अध्ययन आणि अध्यापन यासाठी उदयोन्मुख तंत्रज्ञानामुळे शिक्षणात लक्षणीयरीत्या प्रगती होत असल्याचे दिसून येते. त्यासाठी शिक्षकांना प्रत्येक नवीन तंत्रज्ञानाचा अभ्यास करून त्यावर प्राविण्य मिळवावे लागेल. कोविड १९ च्या महाभयंकर साथीपासूनच शिक्षण क्षेत्रात नवीन नवीन तंत्रज्ञान वापरण्यावर भर दिला जात आहे.

संदर्भ :-

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Innovative Teaching And Learning Methods

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● Introduction :-

The objective of this work is to incorporate technology in to teaching learning methods to create a rich learning experience for students and a rewarding teaching experience for faculty. The two educational models practiced across the globe are face to face learning and hybrid learning the traditional method of teaching and learning is synchronous and typically involves the employment of a classroom where professor and students interact within time and space. This model of teaching is called synchronous. Interactions with face to face and distance learning techniques to disseminate information to members of a learning community. This type

of learning blends technology based asynchronous teaching method and traditional teaching method. The asynchronous

or hybrid teaching has following advantages. It motivates the learning process. It offers time flexibility for part time job or other assignment holders. It reduces overcrowded classrooms. Faculty can add more instructions overtime and maximizes student learning. The hybrid teaching model Students perspective is that they can interact better with the faculty and classmates remain engaged. Improvement in students soft skills, critical thinking and problem solving. Compute skill and technical skills of students increase. Faculty perspective is that they accomplish course teaching objective better, can re-evaluate course work material. The effectiveness of in-c

● Abstract:-

Advance pedagogy is the way to enhance teaching and learning performance. Different innovative teaching methods are now in use across the globe. Hybrid teaching includes e - learning in addition to the face to face teaching. Use of technology and multimedia is described in details. Use of smart gadgets for different tasks like teaching, designing question papers, assessment of student, feedback and research methodology is discussed. The application of innovative teaching and learning methods is critical if we are to motivate and engender a spirit of

learning as well as enthusiasm on the part of students, The role of education is to ensure that while academic staffs do teach, what is taught should also be intelligible to students emanating from culturally and linguistically diverse backgrounds and that they rapidly become familiar with the expected standards. It is more often than not the case that students underachieve because of the fact that they have not grasped an awareness of the level of assessment or what it is that the lecturer expects from them. Lecturers should thus apply themselves to utilizing innovative methods so that the students' learning process is as free-flowing as possible and that the methodology they adopt is conducive to learning. Innovative teaching and learning methodologies such as short lecture, simulation, role-playing, portfolio development and problem-based learning (PBL) are very useful in addressing the rapid technological advances and developing workplaces that will be required in the foreseeable future.

● What are Innovative Teaching Methods:-

Innovative teaching methods extend beyond the mere incorporation of cutting-edge teaching methods or a constant pursuit of the latest educational trends—they embody distinctive approaches to the teaching and learning process. These modern methods of teaching prioritize students, emphasizing

classroom engagement and interaction. Innovative strategies encourage proactive participation and collaboration among students and the teacher. While this demands increased effort from students, the approach is tailored to better meet their individual needs, fostering accelerated growth. In contrast to conventional teaching practices, which primarily measures student success by the amount of knowledge transferred to students, innovative teaching methods delve into the nuanced understanding and retention of the material. It's not just about what is taught but how effectively students internalize and apply the knowledge imparted during lectures.

- **Why Innovative Teaching Matters:-**

The educational landscape has undergone a transformation, transitioning from traditional classrooms to virtual and hybrid learning environments. However, the prevalence of staring at laptop screens introduces the risk of students becoming easily distracted or disengaged, perhaps even succumbing to the allure of sweet dreams in the comfort of their beds, all while feigning concentration. It's unfair to solely attribute this challenge to students' lack of diligence; teachers share the responsibility of avoiding tedious and monotonous lessons that can lead to student disinterest.

Amid this new normal, many educational institutions, educators, and trainers are exploring innovative teaching strategies to enhance student interest and involvement. Leveraging digital programs has proven instrumental in captivating students' attention, providing them with improved access to classes and expanding the avenues through which their minds can be reached.

- **Key Characteristics of Innovative Teaching Strategies**

- **Student-Centric Focus** :-Innovative teaching strategies prioritize the needs and engagement of students, fostering active participation in the learning process.
- **Active Learning** :-Encourages hands-on and participatory activities, moving away from passive learning to promote deeper understanding and retention.
- **Flexibility and Adaptability**:-Adapts to the diverse learning styles and needs of students, offering flexibility in content delivery and new teaching methods.
- **Technology Integration**:-Utilizes technology creatively to enhance effective learning experiences, incorporating digital tools and resources for effective and interactive instruction.
- **Collaborative Learning**:-Emphasizes group work, collaboration, and peer learning to enhance social and communication skills among students.
- **Problem-Solving Emphasis**:-Focuses on developing critical thinking skills and problem-solving skills, challenging students to apply knowledge in real-world scenarios.
- **Continuous Assessment**:-Moves beyond traditional exams and grades by implementing continuous assessment methods, providing ongoing feedback for improvement.
- **Creativity Encouragement**:-Cultivates a learning environment that stimulates creativity and innovation, allowing students to express themselves and explore new ideas.
- **Individualized Learning**:- Recognizes and accommodates the diverse learning preferences and paces of individual students, promoting personalized learning experiences.
- **Real-World Relevance**:- Connects classroom concepts to real-world applications, demonstrating the practical relevance of what students are learning.
- **Feedback-Oriented Approach**:-Prioritizes constructive feedback to guide students' progress, facilitating a continuous cycle of improvement and reflection.
- **Cultivation of Soft Skills**:-Integrates the development of soft skills, such as communication, collaboration, and time management, essential for success in various contexts.

- **Benefits of Innovative Teaching Methods:-**

Explore the positive benefits for teachers of these seven innovations on students and why they merit consideration

❖ **Encourage Research::**-Innovative approaches to education motivate students to delve into new things, utilizing various tools to broaden their horizons and foster a spirit of exploration.

❖ **Enhance Problem-Solving and Critical Thinking::**-Creative and effective teaching methods empower students to learn at their own pace, challenging them to brainstorm novel solutions rather than relying on pre-existing answers in textbooks.

❖ **Facilitate Incremental Learning::**-New teaching approaches involve breaking down information into smaller, more digestible parts, making it easier for students to grasp fundamentals while avoiding overwhelming them with a deluge of knowledge.

❖ **Cultivate Soft Skills:** Integrating complex tools into classwork enables students to acquire advanced skills. Engaging in individual or group projects teaches time management, task prioritization, effective communication, collaboration, and other vital soft skills.

❖ **Assess Understanding Beyond Grades::**-Innovation method of teaching enables educators to monitor classes actively, gaining deeper insights into students' challenges and learning capacities beyond what traditional grades and exams may reveal.

❖ **Promote Self-Evaluation::**-Innovation teaching methods provided by teachers empower student learning to assess their own learning. Understanding what they have mastered and identifying areas for improvement enhances their motivation to learn specific topics.

❖ **Create Vibrant Classrooms::**-Innovation of teaching methods in education inject excitement into classrooms, preventing monotony. This dynamic approach encourages students to actively participate, speak up, and foster increased interaction.

● **Innovative Teaching Strategies for Better Student Engagement:-**

1. Interactive Lessons

Interactive lessons involve innovation methods in teaching that actively engage students in the learning process. Instead of passively receiving information, students participate in activities, discussions, and exercises that require their input and involvement. This approach aims to foster a more dynamic and engaging classroom environment. Interactive lessons can take various forms, including group discussions, hands-on activities, simulations, case studies, and collaborative projects. Teachers may use technology tools, interactive whiteboards, or other resources to facilitate participation and feedback, encouraging students to take an active role in their own learning.

1.Example of Interactive Lesson

Imagine a biology lesson where students use a virtual dissecting table. Through a touch-sensitive screen, students can virtually dissect a frog. They can drag and drop tools, zoom in for a closer look, and receive real-time feedback on their technique. This interactive approach engages students actively in the learning process, making it more memorable and enjoyable.

2. Using Virtual Reality Technology

Virtual Reality (VR) technology creates a simulated environment that users can interact with, providing a unique and immersive learning experience. In education, VR can be used to transport students to virtual worlds that simulate historical events, scientific phenomena, or complex concepts. For example, students studying history might virtually explore ancient civilizations, while science students could conduct virtual experiments in an engaging learning environment. This technology enhances experiential learning, allowing students to visualize abstract concepts and engage with subject matter in a new way of teaching. It can be particularly beneficial in fields where hands-on experience is challenging to provide in a traditional classroom setting.

3 Example of Teaching with VR Technology

In a history class, students can put on VR headsets and be transported to historical events. For instance, they could experience the signing of the Declaration of Independence or walk through ancient

civilizations. This immersive experience allows students to better understand historical contexts, fostering a deeper connection to the subject matter.

4. Using AI in Education

Artificial Intelligence (AI) in education involves the integration of AI technologies to enhance the learning experience for students and support educators. AI can be applied in various ways, such as:

- Personalized learning
- Automated assessment
- Adaptive learning platforms
- Virtual assistants
- Data analysis

Integrating AI into education aims to make learning more efficient, personalized, and adaptive to the needs of each student, ultimately enhancing the overall educational experience.

5 Example of Using AI in Education

An AI-powered adaptive learning platform can be employed in mathematics. The system assesses each student's strengths and weaknesses, tailoring lessons to their individual needs. If a student struggles with a specific concept, the AI provides additional exercises and resources to reinforce understanding. Conversely, if a student excels, the AI advances them to more challenging material, ensuring personalized and efficient learning experiences.

6. Blended Learning

Blended learning is an educational approach that combines traditional face-to-face instruction with online learning components. It seeks to leverage the strengths of both in-person and digital learning to create more flexible and personalized learning strategies and experience. An example of blended learning might involve students attending in-person classes for lectures and discussions while also completing online modules, interactive simulations, or collaborative projects outside of the classroom. This approach allows for a mix of teacher-led instruction, self-paced online learning, and interactive activities, catering to different learning styles and promoting student engagement.

7 Example of Blended Learning

In a blended learning scenario, a history class might have students attend traditional lectures and participate in classroom discussions. Additionally, the teacher could integrate online modules featuring interactive timelines, virtual tours of historical sites, and collaborative research projects. Students might use online discussion forums to share their insights and engage with peers beyond the physical classroom. The blend of in-person and online activities aims to enhance the overall learning experience and provide students with more flexibility in how they access and interact with course content.

8 . 3D Printing

3D printing, also known as additive manufacturing, involves creating physical objects layer by layer based on a digital model. In education, 3D printing is utilized to bring concepts to life in a tangible and visual way. Teachers and students can design and print three-dimensional models that represent scientific structures, historical artifacts, mathematical concepts, or prototypes. This hands-on approach enhances understanding by allowing students to interact with physical representations of abstract ideas.

9 .Example of 3D Printing

In a science class studying the solar system, students could use 3D printing to create accurate models of planets, moons, and other celestial bodies. By designing and printing these objects, students not only gain a deeper understanding of the spatial relationships within the solar system but also develop skills in design and technology. The tactile experience of holding and examining 3D-printed models can significantly enhance the learning process and make complex topics more accessible.

10. Use the Design-thinking Process

The design-thinking process is a problem-solving approach that emphasizes empathy, ideation, prototyping, and testing. It encourages a creative and collaborative mindset to address complex challenges. In education, the design-thinking process can be applied to foster critical thinking, innovation, and real-world problem-solving skills among students.

- **Example of Design-thinking Process**

Let's consider a design-thinking project in a high school setting. Students might be tasked with addressing a local environmental issue, such as waste reduction. The process would start with empathizing, where students research and understand the perspectives of different stakeholders affected by the problem. Next, they would ideate, generating creative solutions to address the issue. In the prototyping phase, students might create physical or digital prototypes of their proposed solutions. Finally, they would test and refine their prototypes based on feedback and real-world observations. This design-thinking approach integrates various skills, including research, collaboration, critical thinking, and problem-solving, providing students with a holistic learning experience.

- **. Project-based Learning (PBL)**

Project-Based Learning is an instructional methodology that centers around students completing projects that require them to apply their knowledge and skills to real-world challenges. PBL emphasizes hands-on, collaborative learning, fostering critical thinking and problem-solving skills.

- **Example of Project-based Learning**

In a biology class, students could engage in a PBL project focused on environmental conservation. The project might involve researching local ecosystems, identifying environmental issues, proposing solutions, and implementing a community awareness campaign. Throughout the project, students would not only deepen their understanding of biology but also develop research, communication, and teamwork skills as they work towards a tangible goal.

- **. Inquiry-based Learning**

Inquiry-Based Learning is an approach where students actively explore and investigate topics, posing questions and conducting research to construct their understanding. This method encourages curiosity, critical thinking, and a deeper engagement with the subject matter.

- **Example of Inquiry-based Learning**

In a physics class, students could engage in an inquiry-based project to explore the principles of motion. They might formulate questions about the factors affecting the speed of an object and design experiments to test their hypotheses. Through hands-on exploration and data analysis, students would develop a conceptual understanding of physics principles while honing their research and analytical skills.

- **Jigsaw**

The Jigsaw technique is a cooperative learning strategy where students work collaboratively to become experts on specific topics and then share their knowledge with their peers. This promotes teamwork, communication, and a sense of shared responsibility for active learning method.

- **Example of Jigsaw**

In a history class studying a particular time period, each student could be assigned to become an "expert" on a different aspect, such as political, economic, social, or cultural elements of that era. After researching and becoming knowledgeable in their area, students would then form new groups with members who have expertise in different aspects. In these new groups, students share their knowledge, creating a comprehensive understanding of the historical period through collaborative learning.

- **. Cloud Computing Teaching:-**

Cloud computing teaching involves leveraging cloud-based technologies to enhance the learning experience. This includes storing and accessing data, collaborating on projects, and utilizing online tools and resources for teaching and learning.

Example of Cloud Computing

In an IT class, students might use cloud computing platforms to collaborate on coding projects. They could use cloud-based development environments to write and test code, store project files on cloud storage, and collaborate in real-time using cloud-based collaboration tools. This approach allows for seamless collaboration, easy access to resources, and the flexibility to work on projects from different locations, promoting a more modern and connected learning experience.

• **. Flipped Classroom:-**

The flipped classroom model reverses the traditional teaching approach by delivering instructional content, such as lectures, through digital media outside of the classroom. Class time is then used for interactive activities, discussions, and application of knowledge.

• **Example of Flipped Classroom**

In a math class, instead of the teacher delivering a lecture on a new concept during class time, students might watch a pre-recorded video lecture at home. Class time would then be dedicated to working on math problems, engaging in group discussions, and receiving personalized assistance from the teacher. This allows students to learn at their own pace, receive more individualized support, and actively apply what they've learned in a collaborative setting.

• **. Peer Teaching:-**

Peer teaching involves students taking on the role of the teacher to explain concepts or assist their classmates in understanding specific topics. This approach reinforces understanding through teaching and encourages collaboration.

• **Example of Peer Teaching**

In a language class, students could pair up to practice conversational skills. Each pair is responsible for teaching and correcting each other's pronunciation, grammar, and vocabulary usage. This not only provides additional practice for the students but also promotes a supportive learning community where students take an active role in each other's learning.

• **Peer Feedback:-**

Peer feedback involves students providing constructive feedback to their peers on their work, presentations, or projects. This encourages a culture of collaboration, communication, and continuous improvement.

• **Example of Peer Feedback**

In a writing class, students could exchange drafts of their essays with a peer. The peers would then provide feedback on the structure, clarity, and overall effectiveness of the writing. This process not only helps students improve their writing skills but also enhances their ability to critically evaluate and provide constructive feedback.

• **Crossover Teaching:-**

Crossover teaching involves educators from different subjects collaborating to integrate content from multiple disciplines. This interdisciplinary approach aims to show the interconnectedness of different subjects and enhance the relevance of learning.

• **Example of Crossover Teaching**

In a high school setting, a history teacher and a literature teacher might collaborate on a unit exploring a specific historical period. Students could read literature from that era, analyze historical documents, and discuss the cultural and social context. This crossover teaching approach helps students

see how knowledge from different subjects can complement and enrich their understanding of a particular topic.

- **Personalized Learning:-**

Personalized learning tailors the educational experience to the individual needs, preferences, and pace of each student. This can involve adapting content, pacing, and innovative methods of teaching to align with the unique learning styles and strengths of each learner.

- **Example of Personalized Learning**

In a science class, students might engage in personalized learning through adaptive online platforms. The educator support platform assesses each student's strengths and weaknesses and provides customized learning paths, offering additional resources or challenges based on individual progress. This approach allows students to move at their own pace, reinforcing concepts they find challenging and advancing more quickly through material they grasp easily.

- **. Active Learning:-**

Active learning involves strategies that engage students in the learning process through activities, discussions, and participation, rather than passive listening. It encourages students to think critically and apply their knowledge actively.

- **Example of Active Learning**

In a biology class, instead of a traditional lecture format, students might participate in a hands-on lab where they conduct experiments to understand cellular processes. The teacher facilitates discussions, and students actively work together to analyze results and draw conclusions. This hands-on approach not only reinforces theoretical knowledge but also enhances critical thinking and problem-solving skills.

- **Gamification**

Gamification integrates game elements into non-game contexts, such as education, to enhance engagement and motivation. Points, levels, challenges, and rewards are used to make learning more enjoyable.

- **Example of Gamification**

In a language learning app, students earn points for completing lessons, quizzes, and interactive exercises. As they accumulate points, they unlock new levels and earn virtual rewards. This gamified learning approach incentivizes consistent learning, provides a sense of achievement, and makes the language learning process more enjoyable and interactive.

- **. Problem-Based Learning**

Problem-Based Learning (PBL) is an instructional method where students learn through solving real-world problems. It promotes critical thinking, collaboration, and the application of knowledge to practical situations.

- **Example of Problem-Based Learning**

In a physics class, students might be presented with a real-world problem, such as designing a sustainable energy solution for a community. Working in groups, students would need to research, analyze, and propose a solution that considers the principles of physics, environmental impact, and cost-effectiveness. This approach not only deepens their understanding of physics but also develops problem-solving skills in a practical context.

- **Mistake-Led Teaching**

Mistake-led teaching emphasizes the value of mistakes as opportunities for learning and growth. Instead of penalizing mistakes, this approach encourages reflection, analysis, and understanding through the process of making and correcting errors.

- **Example of Mistake-Led Teaching**

In a mathematics class, when students make mistakes in problem-solving, the teacher could use those mistakes as teaching moments. Instead of providing the correct answer immediately, the teacher facilitates a discussion where students analyze the errors, identify misconceptions, and collectively work towards the correct solution. This fosters a positive learning environment where mistakes are viewed as a natural part of the learning process.

- **Collaborative Learning**

Collaborative learning involves students working together in groups to achieve shared learning goals. It promotes communication, teamwork, and the exchange of innovative ideas in education.

- **Example of Collaborative Learning**

In a history class, students could be assigned a research project on a specific historical event. Each group member is responsible for investigating different aspects of the event, such as political, social, and economic impacts. The group collaborates to synthesize information and create a comprehensive presentation. This collaborative approach not only deepens individual understanding but also enhances teamwork and communication skills.

- **Tips for Implementing Innovative Teaching Strategies**

Implementing innovative teaching strategies can be a transformative experience for both educators and students. Here are some tips to help facilitate the successful integration of innovating teaching strategies in the classroom:

- ❖ **Start with Clear Learning Objectives:-** Clearly define the learning objectives and goals you want to achieve with the innovation teaching strategy. Ensure that the chosen strategy aligns with the curriculum and educational outcomes.

- ❖ **Understand Your Students:-** Consider the needs, learning styles, and interests of your students. Tailor the innovative strategy in teaching to match the characteristics of your classroom, fostering a more personalized and engaging learning experience.

- ❖ **Create a Supportive Environment:-** Foster a positive and supportive classroom culture that encourages experimentation, creativity, and risk-taking. Establish an atmosphere where students feel comfortable exploring new concepts and expressing their ideas.

- ❖ **Provide Adequate Resources:-** Ensure that teachers and students have access to the necessary resources, including technology, materials, and training materials. Adequate resources facilitate a smooth implementation of innovating teaching strategies.

- ❖ **Encourage Collaboration:-** Promote collaboration among educators by creating opportunities for sharing insights, experiences, and best practices. Collaborative environments foster a culture of continuous improvement and innovation.

- ❖ **Seek Student Feedback:-** Regularly gather feedback from students to understand their experiences with the innovative teaching strategies. This input helps educators make necessary adjustments and tailor the strategies to better suit student needs.

- ❖ **Celebrate Successes:-** Acknowledge and celebrate the successes achieved through the implementation of innovative teaching strategies. Recognizing achievements reinforces the value of experimentation and encourages a positive attitude towards innovation.

- ❖ **Stay Informed and Updated:-** Stay informed about emerging education trends, technologies, and pedagogical approaches. Continuous learning and staying updated ensure that educators remain at the forefront of innovative teaching practices.

- ❖ **Flexibility and Adaptability:-** Be flexible and willing to adapt. Different strategies may work for different students or in varying contexts. Flexibility allows for adjustments based on ongoing assessments and feedback.

- ❖ **Encourage Continuous Professional Development:**

Support ongoing professional development for teachers, including attending workshops, conferences, and participating in online communities. Continuous learning ensures that teachers stay inspired and well-equipped to implement innovative strategy in teaching effectively. Remember that the successful implementation of innovative teaching strategies requires a combination of planning, collaboration, and a commitment to ongoing improvement. By creating a supportive and dynamic learning environment, educators can enhance student engagement and foster a love for learning.

- **What Teaching Strategies Should One Avoid:-**

- ❖ Over Reliance on Lectures: Long lectures without interaction can lead to disinterest. Include discussions and activities for engagement.
- ❖ Ignoring Student Diversity: Adapt teaching to diverse needs, learning styles, and backgrounds for an inclusive environment.
- ❖ Excessive Use of Worksheets: Balance worksheets with hands-on activities and real-world applications to avoid passive learning.
- ❖ Excessive Testing: Balance standardized testing with other assessments like projects and presentations.
- ❖ Ignoring Technology Integration: Thoughtfully integrate technology to prepare students for the digital age.
- ❖ Lack of Clear Learning Objectives: Clearly state learning outcomes to provide direction and purpose for lessons.
- ❖ Ignoring Student Voice: Involve students in decision-making processes and incorporate their interests.
- ❖ Sole Reliance on Textbooks: Supplement textbooks with real-world examples, multimedia, and interactive activities.
- ❖ Neglecting Social and Emotional Learning (SEL): Incorporate SEL activities for a positive and supportive learning environment.
- ❖ Isolationist Teaching: Collaborate with colleagues and involve students in collaborative learning experiences.
- ❖ Fear of Mistakes: Embrace mistakes as learning opportunities and encourage a growth mindset.
- ❖ Lack of Variety in Assessment: Use a variety of assessments to capture a comprehensive view of student understanding.

- ❖ **The Future of Innovative Teaching:-**

Over the past few years, the transition from traditional brick-and-mortar learning to digital education has accelerated a pre-existing trend. Virtual academy enrollments had been steadily increasing well before the pandemic, catering to hundreds of thousands of students annually in the US. The provision of digital programs offers students enhanced flexibility, granting them greater access to teachers and classes while empowering them to take more control over their learning experiences. Quoting Plato's timeless wisdom, "our need will be the real creator," or in modern terms, "necessity is the mother of invention." While innovative teaching strategies were once considered a niche practice by a select few educators, they are now becoming commonplace as schools seek to address learning gaps and adapt to our evolving reality. Anticipate witnessing a surge in blended learning, hybrid learning, and ambitious initiatives aimed at tackling the challenges confronting schools and students today. This trend extends beyond the classroom, impacting the workplace as well, as organizations grapple with how to navigate their own hybrid learning landscapes.

- **Conclusion:-**

Crucial for fostering a dynamic and successful learning atmosphere, inventive teaching techniques play a pivotal role in empowering both educators and students. They enable teachers to cultivate imaginative approaches to instruction while fostering the development of independent learning skills among students. Through the provision of diverse instructional strategies and materials, educators can elevate both student engagement and achievement within the classroom setting. At PioGroup, we firmly believe in the transformative impact of innovative teaching strategies on learning outcomes. Our extensive array of resources is tailored to assist teachers in seamlessly integrating innovative techniques into their classrooms. Feel free to reach out today to discover more about how you can unlock the advantages of incorporating innovative teaching strategies into your educational environment!

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Issues In Collection Development of E-resources

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Abstract

The number and variety of e-resources available to libraries have raised exponentially in past years. Users expect to find e-resources online and available to them at any hour of the day and from any location. Frequently, the challenge librarians face is not whether to select the print version or the electronic version of a resource, but rather, to select the most appropriate e-resource. The paper focus on the issues concerned in selecting E- resources and suggests the selection and evaluation criteria for e-resources.

Keywords: Collection development, Policies, Licensing, E-resources, Vendor support.

1. Introduction

Libraries in these days are supporting the teaching, learning and research activities with the combination of print, non-print and electronic resources. Electronic resources are becoming an important component of the collection building in libraries. Electronic resources refer to those materials that require computer or pocketmobile devices to access. They can be accessed remotely through internet or locally. Some of the well known e- resources are E- Journals, E-books, Databases, Full-text (aggregated), Indexing and abstracting databases, Reference databases (biographies, dictionaries, directories, encyclopaedia's, standards etc.), Numeric and statistical databases and many more. Electronic resources may be acquired by various means, through purchase or license, downloaded free from web, born digital or multiple format materials (enclosed with book). Electronic resources, however, pose challenges not encountered with the selection and acquisition of traditional library analog materials, such as access, interface, licensing and technology support. The Libraries therefore need to formulate a separate clear policy and processes to handle these issues.

2. Collection development policies for E- Resources:

Conventional selection criteria of selecting library materials such as subject, level and target audience apply to electronic resources as well. However, due to their unique nature, special criteria have to be applied. The policy should provide direction to assist selectors on format preference when faced with the choice of content available in both print and electronic formats.

IFLA recommended the following model Policy for E -resources collection:

Following considerations are to be made relating to format preference and duplication

Currency resources with print equivalents should not lag behind their print counterparts.

Excellent value for money- the electronic resource should provide sufficient added value over the print equivalent of other formats (e.g., increased

functionality, increased accessibility). Accuracy and completeness the electronic resource should reflect the same or increased content as compared with the print equivalent.

Mk Duplication- duplication may be considered if the electronic publication is not archived and support is expected; if the cost of duplication is minimal and multiple formats best meet the needs of different users in terms of access and convenience.

Also IFLA says the policy should assist selectors in establishing the library's expectations and preferences in relation to Technical feasibility, Functionality and reliability, vendor support supply and licensing of e-resources:

Technical feasibility including, but not limited to

a) Availability, e.g., remote access, stand-alone access, b) Authentication, eg, IP [Internet Protocol] filtering or login password, c) Hardware and software

compatibility and capability, d) Storage and maintenance, eg, remote hosting v. local bestingce) Platforms which facilitate access to e-resources

Functionality and reliability including but not limited to

a) Search and retrieval functionality, eg, truncation, browsing, search history, transliteration.

b) Exporting and downloading, e.g., printing, e-mail, downloading to a machine, and downloading to an electronic device, c) Sorting and ranking abilities for Jatabase results. For example: author, title, date, relevancy, facets, etc., d) Interface, eg, system intuitiveness, navigation, help and tutorials, e) Integration & f) Reliability and availability, e.g., response times, 24/7 access.

Vendor support including but not limited to a) User training and support, b) Trials and product demonstrations, c) Technical support and system notification process, d) Statistical reporting, e) Customization, e.g., branding, f) Provision of bibliographic data, eg, MARC records & g) Data security and archiving policies.

Supply-including but not limited to

a) Purchase model, e.g., purchase, subscribe, pay per view, rental, b) Pricing models, e.g., selective v, big deal, c) Access options, Le single user, multiple users, d) Archiving and post termination rights, e) Maintenance fees) Cancellation rights.

Licensing including but not limited to

a) Model/Standard license, b) Governing laws, c) Liability for unauthorized use, d) Definition of authorized users, e) Definition of authorized sites, 1)

Fair use provision., g) Termination, h) Refunds, i) Period of agreement, j) Compliance with the governing laws of the library's or consortium's legal jurisdiction (province, state, country).

Finally the policy should also provide clear guidance on cycles of review and deselection policies for

electronic resources where additional criteria related

specifically to format, such as obsolescence, platform reliability, etc., may apply.

3. Criteria for selecting and evaluating E- resources.

When considering the acquisition of an e- resource, We have to see that will the e-resource intended to acquire serve as a replacement for or a supplement to an existing resource? If the e-resource being considered is intended to be a replacement for an existing resource, it may be necessary to be more stringent in the evaluation. However, if the resource is meant to be a supplement to other resources, it may be possible to be more lenient. Also, before beginning the evaluation, we have to consider how users will actually utilize the resource. What is the primary need this resource is supposed to fill? A resource that is meant to be a reference resource for quick consultation will have different criteria than one that is meant to provide more in-depth coverage. Once the basic parameter for the evaluation of the resource is defined, the actual evaluation begins.

The criteria for the selection of e-resources can be divided into six broad areas: content, design and usability, accessibility, licensing, Vendor support and pricing.

A. Content

Content selection criteria assess the quality and quantity of the materials covered in the e-resource. Exactly which criteria are used to evaluate the content of an e-resource will vary depending

upon the type of resource being considered (Full text, indexing database etc.). Evaluation process should begin by determining what kind of resource you are considering and creating a list of criteria specific to that resource. Initially electronic resources need to be reviewed and evaluated for selection from a content perspective such as:

Support the main aims and goals of the organization.

Complement or add depth or breadth to the existing collection supported by subject profiles.

Be of a certain quality, e.g., peer reviewed, or have a reputable producer.

Support the requirements of the/a key audience.

Generate an acceptable level of use.

Once the main selection criteria have been met, then a number of additional content criteria, unique to electronic resources in terms of quantitative and qualitative, such as coverage of resources, file formats, update frequency, subject content and level and indexing need to be considered. The following has to be checked:

a. What title(s)/item(s) are included and indexed in the resource?

b. How many journals or articles are indexed and are abstracts provided?

c. What content is available in full text?

d. How much overlap duplication is there with your existing subscriptions?

1) E-resources

? 2) Print? 3) Others?

e. If full text is available, is there cover-to-cover access to the contents?

1) Are figures and tables included? 2) Are graphics included?

f. Which format content is made available?

1) PDF page images? 2) HTML? 3) Other? 4) Multiple

g. Is there an embargo on any content?

h. How quickly is new content added after publication?

i. How frequently is the resource updated with new content?

j. Is the subject material and level of the content appropriate for the audience?

Is the level of the content in the resource suitable for the intended audience? If your library serves a user community composed primarily of undergraduate students, a graduate-level research database may not be the best resource to acquire. In evaluating the level of the material and its appropriateness for your constituency, consult with and take recommendations from faculty, staff, students, and whoever else is considered to be part of your primary audience.

k. Where is the resource itself indexed? Where will your users find references to the resource?

The issue of indexing is important regardless of format, the question of where a resource is indexed is perhaps more important for an e-journal, where the journal is not physically present on the shelf and is unlikely to be browsed. If you are considering a subscription to any journal, it is always important to consider where users will find citations to the articles in the journal. If they do not find references to the journal in any of the citation databases to which your library subscribes, they are unlikely to discover and use this journal.

B. Design & Usability:

Usually the decision to purchase a resource comes down to a choice between content and usability. It depends on what the resource includes and how it functions. Design and usability selection criteria encompass the overall design of the interface, including factors such as search interface. functionality, ease of use, and administrative capabilities. The following has to be checked:

a. How functional is the search interface?

1) Does it use Boolean operators? 2) Can searches be combined? 3) Can searches be saved and/or edited? 4) Are both basic and advanced searches available?

b. Can searches be refined/limited/or expanded?

c. Can results be sorted according to?

1) Date?

2) Relevance?

3) Author?

4) Journal/

Source? 5) Other?

d. What forms of data export/output are there for search results?

1) Printing? 2) Saving? 3) Copy and paste? 4. Direct

export to bibliographic management software? 5) E-mail

e. How intuitive/easy to use is the interface? How much explanation is required to use the resource? f. Are usage statistics available? Are the usage

statistics COUNTER compliant?

g. Is there an administrative module where you can set preferences for your institution?

C. Accessibility:

Accessibility of e-resources refers to the ability of users to easily find, access, and use electronic resources, such as e-books, articles, databases, and software. Here are some key aspects of accessibility: The first component of accessibility is

defined as how accessible the resource is to users on

a technical level. The second component is how

accessible the e-resource is through interlinking with

other resources and content. The following has to be

checked:

a. Technical requirements

1) Is a proprietary reader or piece of software required?

2) Are there any specific browser requirements?

a) Browser level? b) Support multiple browser platforms (Internet Explorer, Mozilla, etc.)?

3) Are there any server requirements?

4) How is access to the resource authenticated?

a) IP address authentication? b) Username and password?

5) Is the system reliable and available 24X7?

6) Is the system technologically up-to-date and have the appropriate capacity and network infrastructure to support multiple users and optimum response times

b. Linking

1) OpenURL enabled?

2) Direct linking to alternative resources (i.e., full- text content, ILL module, online catalogue)?

a) How many links can be set up? b) Can the links be customized?

3) Persistent URLs linking to content?

D. Licensing:

Licensing of e-resources refers to the process of obtaining permission from the copyright holder to use and access electronic resources, such as e-books, articles, databases, and software. Reading the license agreement can be one of the most challenging and intimidating aspects of selecting and acquiring an e-resource. Determining if the terms of a license agreement meet your selection criteria

cannot be done merely by checking items off on a list, and the process is complicated by the fact that some licensing terms are up for negotiation. The following has to be checked:

- a. How many sites does the license permit?
- b. How many simultaneous users are allowed at one time? Unlimited?
- c. Can access be provided remotely to users off campus?
 - 1) Proxy Server
 - 2) Username and password?
- d. Is interlibrary loan of full-text electronic materials permitted?
 - 1) Can the content be transmitted electronically via e-mail or a system like Ariel?
 - 2) Does the content have to be transmitted in hard copy, such as fax or by mail?
- e. Can electronic materials be placed on reserve?
 - 1) In print?
 - 2) Electronically?
- f. If the subscription is cancelled, does the library retain access to the years for which it paid?

How?

- g. In addition to assurances of perpetual access, has the vendor made a commitment to archive its content via a reputable initiative such as a Portico or LOCKSS?
- h. Does the vendor offer free technical support and training? Does the vendor agree to maintain and repair problems with files (e.g., with PDFs) in a timely manner?
- i. Does the vendor require that certain licensing terms be kept confidential?

E. Vendor support:

Due consideration has to be given to vendor support while acquiring E-resource. Vendor should be established and reliable in terms of range of technical and user support services. It is useful to determine the range of vendor support services available. The following has to be checked:

- a. Does the vendor offer Trial evaluation and product demonstration is given?
- b. Does they provide User training & support?
- c. Does the vendor offer technical/Customer support and system notification processes?
- d. Does the vendor offer Customization (branding)
- e. Is there Data security and archiving facility?
- f. Does the vendor offer Bibliographic data provision
- g. Does the vendor maintains Statistical reporting
- h. Does the vendor offer cancellation rights?
- i. Does the vendor offer separate invoicing (in case of consortia purchase)
- j. Does the vendor give renewal information in prior?

F. Pricing:

E-resources are typically priced in one of two ways, either as an annual subscription or as a one-time purchase. Materials that may be available as a one-time purchase include journal and newspaper back-files and some e-books. The purchase price or one-time fee is typically more money up front but with a lower annual maintenance fee, if any at all. There are a few e-resources that do not require any additional expenditure of funds once a customer has paid the purchase price. Annual subscriptions typically have lower up-front costs than one-time purchases, but they are subject to market price increases and inflation. A third pricing option is pay-per-use, where the fees are based upon the number of times the resource is used or searched. In this acquisition model, the more you search and/or access the resource's content, the more you pay. Pay-per-use can be a flat price per search. The other pricing option is through consortia. The following has to be checked:

a. Cost of an annual subscription?

b. Purchase price of the resource?

c. Annual maintenance fee?

d. Pay-per-use?

e. Print plus electronic?

f. Packaged pricing (usually subject based)?

g. Patron-driven acquisition pricing models?

h. Does the vendor offer consortia pricing?

f. Does the vendor allow you to pay for a resource through a third-party?

g. Does the vendor offer a price cap on the inflation rate? Does the price cap require that the library enter into the agreement for more than one year?

4. Conclusion

It is important to remember that the selection of e-resources should benefit the users and enhance the content base of the library. There should be flexibility into the selection process. It would be virtually impossible for an e-resource to meet all of the criteria outlined here. The key to successfully selecting the most appropriate resources for an organization is identifying the criteria that are most important for your organization, prioritizing these criteria, and then applying them to the e-resource(s) being evaluated.

The list of prioritized criteria can be used to form a comprehensive selection policy, encompassing both print and e-resources.

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नवीन शैक्षणिक धोरणाची उपयुक्तता व दोष

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प्रस्तावना

पंतप्रधान नरेंद्र मोदी यांच्या निर्देशानुसार मनुष्यबळ विकास मंत्रालयाने नवीन शैक्षणिक धोरण सादर केले. राष्ट्रीय शैक्षणिक धोरण 2020 केंद्रीय मंत्रिमंडळाने मंजूर केल्यानंतर 29 जुलै 2020 रोजी लागू करण्यात आले. या धोरणाची अंमलबजावणी करण्यामागील सरकारचा प्राथमिक उद्देश भारतातील शिक्षणाचा दर्जा जागतिक स्तरावर उंचावणे हा होता, जेणेकरून देश ज्ञानावर आधारित क्षेत्रात अग्रेसर होऊ शकेल. शिक्षणाच्या सार्वत्रिकीकरणाद्वारे राष्ट्रीय शैक्षणिक धोरणाद्वारे हे उद्दिष्ट साध्य करण्यात आले आहे. त्या उद्देशाने, सरकारने राष्ट्रीय शैक्षणिक धोरण 2023 चा भाग म्हणून शिक्षणपूर्व धोरणामध्ये विविध सुधारणा लागू केल्या आहेत, ज्यामध्ये शिक्षणाचा दर्जा सुधारणे आणि मुलांना चांगले शिक्षण मिळण्यास सक्षम करणे हे उद्दिष्ट आहे.

संशोधनाची उद्दिष्टे -

प्रस्तुत संशोधनासाठी पुढील उद्दिष्टे ठरविण्यात आले आहे.

- s नवीन शैक्षणिक धोरणाचा अभ्यास करणे.
- s नवीन शैक्षणिक धोरणातील गुणांचा अभ्यास करणे.
- s नवीन शैक्षणिक धोरणातील उणिवांचा व कमतरतेचा अभ्यास करणे.

संशोधनाची गृहितके

- s नवीन शैक्षणिक धोरणामध्ये काही उणिवा दिसून येतात.

संशोधन पद्धती

प्रस्तुत संशोधन पद्धतीत वर्णनात्मक व विश्लेषणात्मक पद्धतीचा अवलंब करण्यात आले आहे.

तथ्य संकलन पद्धती

प्रस्तुत संशोधन कार्यासाठी तथ्य संकलन करताना प्राथमिक स्वरूपातील निरीक्षण पद्धतीचा व द्वितीय स्वरूपामध्ये ग्रंथ, लेख, इंटरनेटवरील माहिती याचा आधार घेण्यात आलेला आहे.

नवीन शैक्षणिक धोरणाची गरज

गेल्या शैक्षणिक धोरणाला तीन दशकांहून अधिक काळ लोटला आहे. नवीन शैक्षणिक धोरण, 1986 आणि 1992 मधील सुधारणा त्यांच्या काळासाठी योग्य होत्या आणि सध्याच्या धोरणासाठी मार्गदर्शक म्हणून काम करतात. परंतु या धोरणानंतर आणि विशेषतः 1992 पासून समाज, अर्थव्यवस्था, देश आणि जगात मोठे बदल झाले आहेत. या संदर्भात, आपल्या शिक्षण व्यवस्थेने 21 व्या शतकासाठी स्वतःला तयार करणे आवश्यक आहे. गेल्या

शैक्षणिक धोरणापासून, भारताने आपली अर्थव्यवस्था उदार केली आहे आणि त्याच वेळी लोकसंख्येमध्ये 65% मोठी वाढ झाली आहे.

जागतिक स्तरावर प्रत्येक क्षेत्रात बदल झाला आहे, मुख्यत्वे तंत्रज्ञानातील विकासांमुळे. आज जगभरातील शाळा-महाविद्यालयांमध्ये जेवढे शिक्षण आणि कौशल्ये आत्मसात केली जातात, त्याचा पुढील 30 वर्षांत उपयोग होणार नाही, असे तज्ज्ञांचे मत आहे. आम्ही विकासाच्या या प्रमाणात आणि गतीतून जात आहोत.

भवितव्य असे दिसत असले तरी, आपली शिक्षण व्यवस्था प्रवेश, गुणवत्ता आणि व्यावसायिकतेचा अभाव या जुन्या समस्यांनी ग्रस्त आहे. आपण साक्षरतेच्या दरात लक्षणीय वाढ केली असली तरी, गांधींच्या स्वप्नातील "मूलभूत शिक्षण" वास्तवापासून दूर आहे. एएसईआरचे वारंवार येणारे अहवाल शिक्षण व्यवस्थेची दयनीय स्थिती दर्शवतात. खराब शैक्षणिक परिणाम, पाठ्यपुस्तकातील शिकवणी आणि वास्तविक जीवनातील व्यवसायांमधील अंतर, ग्रामीण-शहरी, खाजगी-सार्वजनिक शैक्षणिक क्षेत्रातील प्रचंड असमतोल यामुळे नवीन शैक्षणिक धोरणाचा जन्म झाला.

अध्यापनशास्त्रामध्ये मुद्दे वारंवार अधोरेखित केले गेले आहेत जे रॉट लर्निंग, अत्यधिक आणि कधीकधी घातक, गुण आणि रँकसाठी स्पर्धा यावर लक्ष केंद्रित करतात. शिक्षण क्षेत्राचे बाजारीकरण ही उदारीकरणानंतरची घटना आहे. शैक्षणिक संस्थांच्या अतार्किक वाढीमुळे पदवीधरांची संख्या आणि संबंधित क्षेत्रातील गरजांमध्ये असंतुलन निर्माण झाले आहे आणि आपल्या देशात "सुशिक्षित बेरोजगार" ची श्रेणी निर्माण झाली आहे. अभियांत्रिकी आणि व्यवस्थापन महाविद्यालयांची वाढ आणि या महाविद्यालयांतील बहुसंख्यपदवीधरांची स्थिती या उदाहरणांवरून हे दिसून येते.

शालेय गळतीचे प्रमाण जास्त असल्याने सार्वत्रिक शिक्षणासारख्या शैक्षणिक योजनांच्या अंमलबजावणीचाही मुद्दा आहे. याचे श्रेय औपचारिक शिक्षणाच्या निरुपयोगीपणाची आणि वास्तविक जीवनातील अस्तित्वाच्या समस्यांशी जोडण्यात आणि वापरण्यात असमर्थता याला दिले जाऊ शकते.

विविध शिक्षणातील अभ्यासक्रम एक-आयामी साक्षरता निर्माण करण्यासाठी विशिष्ट विषयांचे वेगवेगळे सायलो देतात. काही विकसित देशांमध्ये स्वीकारल्या जाणार्या आंतरविद्याशाखीय दृष्टिकोनाचा अभाव हे तज्ञांसाठी चिंतेचे प्रमुख कारण आहे.

अशा समस्यांच्या पार्श्वभूमीवर नवीन शैक्षणिक धोरण-2020 आले आहे. नवीन शैक्षणिक धोरणाचे

नवीन शैक्षणिक धोरणाची उपयुक्तता

1 विद्यार्थ्यांसाठी उपयुक्तता

सर्वांगीण विकास होण्यास मदत

छमच 2020 विद्यार्थ्यांच्या सर्वांगीण विकासावर लक्ष केंद्रित करते, त्यांच्या संज्ञानात्मक, सामाजिक, भावनिक आणि शारीरिक विकासावर लक्ष केंद्रित करते. हे गंभीर विचार, सर्जनशीलता आणि समस्या सोडवण्याची कौशल्ये वाढवते, विद्यार्थ्यांना 21 व्या शतकात भरभराट होण्यासाठी तयार करते.

लवचिक शिक्षणाचा मार्ग स्वीकारला

धोरण लवचिक शिक्षण पद्धती देते, ज्यामुळे विद्यार्थ्यांना त्यांच्या आवडी आणि करिअरच्या आकांक्षांवर आधारित विषय निवडता येतात. हे वैयक्तिकृत शिक्षणाला प्रोत्साहन देते, विद्यार्थ्यांना त्यांची आवड शोधण्यात आणि त्यांच्या निवडलेल्या क्षेत्रात कौशल्य विकसित करण्यात मदत करते.

अभ्यासक्रमाचा भार कमी करण्यात आला

छम्चू चे उद्दिष्ट मूळ संकल्पना आणि आवश्यक शिक्षण परिणामांवर भर देऊन विद्यार्थ्यांवरील अभ्यासक्रमाचा भार कमी करणे हा आहे. हे विषयांचे सखोल आकलन विकसित करते आणि अधिक व्यापक शिक्षण अनुभवास प्रोत्साहन देते.

सर्वसमावेशक शिक्षणाचा स्वीकार

अपंग आणि उपेक्षित समुदायांसह विविध पार्श्वभूमीतील विद्यार्थ्यांना समान संधी सुनिश्चित करून सर्वसमावेशक शिक्षणाला हे धोरण प्राधान्य देते. हे विद्यार्थ्यांमध्ये सहानुभूती आणि समजूतदारपणा वाढवताना सर्वसमावेशक आणि आश्वासक शिक्षण वातावरणाला प्रोत्साहन देते.

कौशल्य विकासावर भर

NEP 2020 कौशल्य विकासावर भर देते, विद्यार्थ्यांना क्रिटिकल थिंकिंग, कम्युनिकेशन, समस्या सोडवणे आणि डिजिटल साक्षरता यासारख्या 21 व्या शतकातील कौशल्ये सुसज्ज करते. यामुळे त्यांची रोजगारक्षमता वाढते आणि भविष्यातील आव्हानांसाठी ते तयार होतात.

2 शिक्षकांसाठी

व्यावसायिक विकासाच्या संधी उपलब्ध

नवीन शैक्षणिक धोरण शिक्षकांच्या सतत व्यावसायिक विकासाचे महत्त्व ओळखते. हे प्रशिक्षण, कार्यशाळा आणि त्यांचे शिक्षण कौशल्य वाढवण्यासाठी, त्यांचे ज्ञान अद्ययावत करण्यासाठी आणि विकसित होत असलेल्या शैक्षणिक पद्धतींबाबत सहकार्याच्या संधी प्रदान करते. तसेच प्रशिक्षण व्यवस्था विकसित करण्यात आलेली आहे.

प्रगत अध्यापन पद्धतीचा अवलंब

धोरण विद्यार्थी-केंद्रित शिक्षण पद्धतींकडे वळण्यास प्रोत्साहन देते आणि परस्परसंवादी आणि अनुभवात्मक शिक्षण पद्धतींना प्रोत्साहन देते. हे शिक्षकांना विद्यार्थ्यांना शिकवण्याच्या प्रक्रियेत सक्रियपणे गुंतवून ठेवण्यास मदत करते, सखोल समज आणि संकल्पना टिकवून ठेवण्यास प्रोत्साहन देते.

IT तंत्रज्ञानाचे एकीकरण

NEP शिक्षणामध्ये तंत्रज्ञानाच्या एकीकरणावर भर देते. शिक्षक डिजिटल साधने, ऑनलाइन संसाधने आणि शैक्षणिक ॲप्सचा फायदा घेऊन त्यांची शिकवण्याची प्रभावीता वाढवू शकतात, परस्परसंवादी शिक्षण अनुभव तयार करू शकतात आणि विविध शिक्षण शैली पूर्ण करू शकतात.

नेतृत्व आणि मार्गदर्शनाची ओळख

हे शिक्षकांतील नेतृत्व आणि मार्गदर्शनाचे महत्त्व देखील ओळखते. शिक्षकांना मार्गदर्शक भूमिका घेण्याची, त्यांच्या सहकारी शिक्षकांना पाठिंबा देण्याची आणि धोरणाच्या अंमलबजावणीत योगदान देण्याची संधी देते. हे शिक्षकांमधील व्यावसायिक विकास आणि सहकार्यास प्रोत्साहन देते.

सहयोगी शिक्षण समुदाय

छम्च् सहयोगी शिक्षण समुदायांना प्रोत्साहन देते, शिक्षकांना पीअर लर्निंगमध्ये आवड निर्माण करण्यासाठी प्रोत्साहित करते, सहकार्यासोबत सहयोग करते. यामुळे व्यावसायिक विकासासाठी पोषक वातावरण तयार होते आणि अध्यापनाची प्रभावीता वाढवते.

एक सुत्रधार म्हणून सक्षमीकरण

हे धोरण शिक्षकांना केवळ माहिती पुरवठादार बनण्याऐवजी शिकण्याचे सुत्रधार बनण्यास सक्षम करते. ते विद्यार्थ्यांना त्यांच्या शिकण्याच्या प्रवासात मार्गदर्शन करू शकतात, गंभीर विचारसरणीला चालना देऊ शकतात आणि विद्यार्थ्यांच्या आवडी आणि कलागुणांचे पालनपोषण करू शकतात. केवळ ज्ञान देणे हेच पापंपारिक कार्य बदलण्यास भाग पाडते.

NEP 2020 चे तोटे

विद्यार्थ्यांवरील वाढता दबाव आणि स्पर्धा

धोरणातील प्राथमिक चिंतेपैकी एक म्हणजे विद्यार्थ्यांमधील दबाव आणि स्पर्धा वाढणे. छम्च् मानक परीक्षांच्या महत्त्वावर भर देते आणि सुरुवातीच्या वर्षांपासून बोर्ड परीक्षांना अनेक स्तरांवर प्रोत्साहन देते. या दृष्टिकोनामुळे ग्रेड आणि कामगिरीवर जास्त लक्ष केंद्रित केले जाऊ शकते, ज्यामुळे विद्यार्थ्यांच्या सर्वांगीण विकास आणि कल्याणाशी तडजोड होऊ शकते.

मर्यादित विषय निवडी

नवीन धोरण बहु विद्याशाखीय दृष्टिकोनाकडे वळण्याचा प्रस्ताव देते, ज्याचा उद्देश विद्यार्थ्यांना विस्तृत विषय प्रदान करणे आहे. एकाच विषयात सर्वसंपन्न ज्ञान मिळत असले तरी प्रशासनातील सामान्यज्ञ निर्माण होवू शकत नाही. तथापि, अनवधानाने त्यांचे पर्याय मर्यादित होऊ शकतात. व्यावसायिक शिक्षण आणि कौशल्य विकासावर भर दिल्याने कला, मानविकी आणि सामाजिक विज्ञान या विषयांवर कमी लक्ष दिले जाऊ शकते. हा संकुचित फोकस विद्यार्थ्यांच्या सर्वांगीण बौद्धिक आणि सर्जनशील विकासात अडथळा आणू शकतो.

अपुरे प्रशिक्षण आणि साधन पुरवठा

NEP 2020 शिक्षकांच्या प्रशिक्षण आणि समर्थनात लागणा-या गरजा पूर्ण करण्यात शासन अयशस्वी ठरले. सतत व्यावसायिक विकास आणि प्रोत्साहनासाठी स्पष्ट मार्गदर्शक तत्वांचा अभाव वर्गखोल्यांमध्ये दिल्या जाणाऱ्या शिक्षणाच्या गुणवत्तेवर परिणाम करू शकतो.

डिजिटल पायाभूत सुविधांमध्ये असमतोल

नवीन शैक्षणिक धोरणात डिजिटल शिक्षण आणि ई-लर्निंग प्लॅटफॉर्मवर लक्षणीय भर देण्यात आला आहे. यामुळे शिक्षणाची उपलब्धता वाढू शकते, परंतु हे आपल्या समाजात प्रचलित असलेल्या डिजिटल विभाजनावरही प्रकाश टाकते. सर्व विद्यार्थ्यांना डिजिटल उपकरणे, इंटरनेट कनेक्टिव्हिटी किंवा ऑनलाइन शिक्षणासाठी आवश्यक संसाधनांचा समान प्रवेश नाही. हा असमतोल आर्थिकदृष्ट्या वंचित पार्श्वभूमीतील विद्यार्थ्यांना आणखी दुर्लक्षित करू शकतो, ज्यामुळे शैक्षणिक असमानता वाढते.

अंमलबजावणीतील दोष

धोरणाबाबत एक प्रमुख चिंतेची बाब म्हणजे प्रभावी अंमलबजावणी धोरणाचा अभाव. अंमलबजावणीसाठी स्पष्ट रोडमॅप न देता ते महत्त्वाकांक्षी बदल प्रस्तावित करत आहे. ही संदिग्धता शैक्षणिक संस्था, शिक्षक आणि

विद्यार्थ्यांमध्ये संभ्रम निर्माण करू शकते, परिणामी देशभरात असमान अंमलबजावणी होऊ शकते. चांगल्या-परिभाषित योजनेशिवाय, धोरणाचे संभाव्य फायदे अवास्तव राहू शकतात.

उपसंहार

नवीन शैक्षणिक धोरण 2020 चे भारतीय शिक्षण व्यवस्थेत सकारात्मक बदल घडवून आणण्याचे उद्दिष्ट आहे, परंतु त्याचे फायदे आणि तोटे यांचे गंभीरपणे मूल्यांकन करणे आवश्यक आहे. साधक आणि बाधकपण वे गंभीरपणे परीक्षण करून, संस्था व शासन नवीन शैक्षणिक धोरणाची प्रभावीपणे अंमलबजावणी करण्यासाठी कार्य करू शकतात, ज्यामुळे सर्वांगीण विकास, सर्वसमावेशकता आणि सर्वांसाठी समान संधींना प्रोत्साहन देणारी शिक्षण प्रणाली सुनिश्चित करता येईल.

21 व्या शतकातील आव्हाने पेलण्यास सक्षम असा ज्ञानावर आधारित समाज निर्माण करण्याच्या दिशेने हे एक महत्त्वाचे पाऊल आहे. दर्जेदार शिक्षणात समान प्रवेश प्रदान करून, नवकल्पना वाढवून आणि सर्वांगीण विकासाला चालना देऊन शिक्षण व्यवस्थेत परिवर्तन घडवून आणण्याचे उद्दिष्ट आहे. धोरणात्मक विचार, सर्जनशीलता आणि समस्या सोडवण्यावर लक्ष केंद्रित करणार्या विद्यार्थी-केंद्रित दृष्टिकोनाच्या गरजेवर भर देण्यात आला आहे. हे आंतरविद्याशाखीय शिक्षण, बहुभाषिकता आणि व्यावसायिक शिक्षणाचे मुख्य प्रवाहातील अभ्यासक्रमात एकीकरण यांना प्रोत्साहन देण्याचा प्रयत्न करते.

नवीन शैक्षणिक धोरणाची लवचिक आणि सर्वसमावेशक शिक्षण प्रणालीची दृष्टी प्रशंसनीय आहे जी आयुष्यभर शिकण्यास सक्षम करते. तथापि, धोरणाचे यश त्याच्या प्रभावी अंमलबजावणीवर अवलंबून असेल, ज्यासाठी पुरेसा निधी, पायाभूत सुविधा आणि कुशल शिक्षकांची आवश्यकता असेल. एकूणच, या धोरणामध्ये भारतातील शिक्षण क्षेत्रात क्रांती घडवून आणण्याची आणि बदलत्या जगाच्या गरजांना अधिक समर्पक आणि प्रतिसाद देणारी बनवण्याची क्षमता आहे. हे एक धाडसी आणि दूरदर्शी दस्तऐवज आहे जे शिक्षणाला सामाजिक गतिशीलतेच्या साधनातून एक चांगला आणि अधिक न्याय्य समाज निर्माण करण्याच्या साधनामध्ये बदलण्याचा प्रयत्न करते.

संदर्भ ग्रंथ

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Benefits of IT Learning in NEP

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Introduction :

Revolution always starts from words and ideas. Now present day education spreads in every field and in this way it is breaking all boundaries to weave its own attractive web in the internet. The term 'E-learning' introduced in 1990s to explain the use of technology to arrange learning and training programme.

Technology refers to the use of scientific knowledge to invent tools that assist human beings in their efforts to overcome environmental hazards and impediments to comfort. The technology includes computer , radio , telephone , cell phone , GSM handset , television etc. According to the users e-learning is different and important thing. With the help of internet users can use e-learning and in this way they can do self study at any time.

The e-learning is used in various fields of online learning , web based learning and technology. In the e-learning there is not necessary physical classroom attendance. Through the internet learner can get learning experience very effectively in the e-learning it is not necessary to be present in the classroom. Through the e-learning learner can interact with other learners these learners are in various locations. Due to e-learning learner can learn very effectively and joyfully. Teaching online or blended domains requires a range of specialist skills , including some level of proficiency in IT. The good news is that the skill you already have are transferable and we will maintain a range of development software available for those with no access to IT specialist and having limited technical skills.

Objectives :

- To see the use of e-learning process.
- To identify the role of e-learning.
- To find the reason, use of e-learning.

Requirement :

No educational programmer or resource exist in isolation : they all exist in the context of the learner's professional development. The implication of this is that every teaching programmed in medical or health education implicitly links with the other programmed on the learners career path. Due to the e-learning we can use large number of technology and multimedia Why E-learning : With the help of e-learning students can be guided through information and in this way it will be helpful for students how they should perform in specific condition.

Online learning is more effective than traditional classroom learning , saving time. Online courses are available 24 hours a day , seven days a week to better our busy schedule. Online learning service is just like a mobile because it can be used everywhere such as in café , on the road , any other place. By using of e-learning we can be able to immediately create and communicate new policies and training. Through e-learning a learner can achieve high level of coverage among the target. In this way all

learners can get equal training. Due to the e-learning process ability to refresh or update coursework and a learner can learn everywhere. Due to the e-learning we can evaluate a learner very quickly. E-learning removes carbon footprint.

How we can get success in IT-learning :

Whenever we do work we should use computer system programs. Imitating these system where possible remove redundancy and give permission to learners to spend less time for learning the structure and give more time for learning course materials.

This information is very helpful gauge IT literacy people in our chosen learner group and it will be very effective methods to develop support structure different types of technologies they have adopted. Library and computer may provide access to the internet but there use is often restricted by security policies. IT may be creative or suitable to expert some learner groups to own a PC with broad band connection , other learner groups may own the phones ; being aware about the importance of technologies they have adopt and any restrictions will help you to chose the right technology and in this way it will be make right or suitable resource for all learners due to e-learning we can complete our formal and informal education.

Conclusion :

IT-learning has brought various , new and different kinds of dimension in education; through which we learn curriculum and also we can get different opportunities via new technologies. With the help of e- learning we can send right information to the right people at the right time and place not only due to it's anyone anyplace anytime model. Due to the development of technology these will come various ions in learning process and these way users of internet will be increased. Through internet all schools will be connected to each other in the coming years. With the help of e-learning we get correct direction in the improvement or development , promulgation , and adoption of a range standard for e-learning.

The use of technology is very important factor to get success in e-learning process. Due to the e-learning every person gets equal or same opportunity, after e-learning process we can test every activity for effectiveness. In the e-learning proves we can get different information through various sources.

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कुलकर्णी ज्योत्सना शामराव

ग्रंथालय सहाय्यक

प्रयाग कराड कॉलेज ऑफ नर्सिंग नांदगाव लातूर

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विद्यार्थ्यांनंतर शिक्षक हा शिक्षण व्यवस्थेचा सर्वात महत्त्वाचा घटक आहे. म्हणून राष्ट्रीय शैक्षणिक धोरण शिक्षकांना कसे आधार देईल. आणि शिक्षकांना पदोन्नती आणि सेवा संबंधित फायदे कसे वाढवतील यावर प्रकाश टाकणे आवश्यक आहे. परंतु वेळ आणि व्याप्तीच्या कमतरतेमुळे. येथे फक्त मुख्य वैशिष्ट्यांची संक्षिप्तपणे चर्चा केली जाईल.

1 विद्यमान शिक्षकांना प्रशिक्षित केले जाईल आणि श्रेणीसुधारित केले जाईल NEP 2020 ने असे नमूद केले आहे की. अंगणवाडीपूर्व प्राथमिक विभागातील सर्व विद्यमान शिक्षकांना NEP द्वारे तयार केलेल्या अभ्यासक्रमशैक्षणिक फ्रेमवर्कनुसार पद्धतशीर प्रयत्नांद्वारे प्रशिक्षित केले जाईल- 10 व 12 पात्रता असलेल्या शिक्षकांना म्बम् मध्ये 6 महिन्यांचा प्रमाणपत्र कार्यक्रम घ्यावा लागेल, तर कमी शैक्षणिक पात्रता असलेल्या शिक्षकांना एक वर्षाचा पदविका अभ्यासक्रम प्रशिक्षित केला जाईल. डीटीएच प्रणाली किंवा स्मार्ट फोन वापरून प्रशिक्षण घेतले जाऊ शकते, जेणेकरून वेळ वाया जाणार नाही आणि अडथळा होणार नाही. शिक्षकांसाठी प्रशिक्षणावर पैसे खर्च केले जातात, आणि शाळेचे कोणतेही काम दिले जाणार नाही.

2 नवीन शिक्षकांची भरती आणि नियुक्ती केली जाईल. एनईपी- 2020 मध्ये शिक्षकांच्या शिक्षणाचा दर्जा भरती नियुक्ती सेवा स्थिती आणि शिक्षकांचे सक्षमीकरण या बाबींचा विचार केला जातो. असणे म्हणून शिक्षकांबद्दल उच्च आदर आणि शिक्षकी पेशाचा उच्च दर्जा पुनर्संचयित करणे आवश्यक आहे जेणेकरून अध्यापन व्यवसायात प्रवेश करण्यासाठी सर्वोत्तम असेल. आपल्या मुलांच्या आणि आपल्या राष्ट्राच्या भवितव्यासाठी हे आवश्यक आहे. त्यामुळे, विशेषतः ग्रामीण भागातील उत्कृष्ट विद्यार्थ्यांना आकर्षित करण्याच्या दृष्टीने गुणवत्तेवर आधारित शिष्यवृत्ती 4 वर्षांच्या एकात्मिक बी. एड. कार्यक्रम यशस्वीरित्या पूर्ण केल्यावर त्यांच्या स्थानिक भागात प्राधान्य रोजगार देखील समाविष्ट केले आहे. शिष्यवृत्तीमुळे ग्रामीण भागात काम करू शकणार्या महिलांसह स्थानिक तरुणांना नोकरीच्या संधी उपलब्ध होतील.

3 ग्रामीण भागात, विशेषतः ज्या भागात गुणवत्तापूर्ण शिक्षकांची तीव्र कमतरता आहे. अशा दर्जेदार शिक्षकांना प्रोत्साहन दिले जाईल. ग्रामीण शाळांमधील शिक्षकांसाठी मुख्य प्रोत्साहन म्हणजे शाळेच्या परिसरात किंवा जवळील स्थानिक घरांची तरतूद किंवा वाढीव गृहनिर्माण भत्ते.

4 अतिरिक्त शिक्षकांच्या बदल्या थांबवल्या जाणार, सध्या बदली झालेल्या शिक्षकांच्या जागी विषय शिक्षक न पुरवता शिक्षकांच्या धडाकेबाज बदल्या केल्या जात आहेत. शिक्षकांच्या बदल्यांमध्ये भ्रष्टाचार झाल्याचा आरोप आहे. त्यामुळे विद्यार्थ्यांच्या आदर्शात सातत्य राखण्यासाठी अत्याधिक शिक्षक बदलीची हानिकारक प्रथा थांबवली जाईल.

5 शिक्षक पात्रता चाचणी(टीईटी बळकट केली जाईल. सामग्री आणि अध्यापनशास्त्र या दोन्ही बाबतीत उत्तम चाचणी साहित्य तयार करण्यासाठी टीईटी मजबूत केली जाईल. शालेय शिक्षणाच्या सर्व टप्प्यांवर (मूलभूत. पूर्वतयारी मध्यम आणि माध्यमिक शिक्षकांचा समावेश करण्यासाठी टीईटीचा विस्तार केला जाईल. विषय शिक्षकांसाठी टीईटी किंवा एनटीए (नॅशनल टेस्टिंग एजन्सी. उच्च शिक्षण प्रवेशासाठी संबंधित विषयातील चाचणी गुण देखील भरतीच्या वेळी विचारात घेतले जातील. उत्कटता आणि प्रेरणा मोजण्यासाठी मुलाखत किंवा वर्गातील प्रात्यक्षिक हा अध्यापनाचा अविभाज्य भाग असेल. खाजगी शाळांमधील शिक्षकांना समान चाचणी (टीईटी) किंवा एनटीए स्कोअरला सामोरे जावे लागेल.

6 शिक्षकांचे सामायिकरण केले जाईल राष्ट्रीय शिक्षण धोरण 2020 सर्व विषयांमध्ये शिक्षकांची पुरेशी संख्या सुनिश्चित करण्यासाठी-विशेषता कला, शारीरिक शिक्षण. व्यावसायिक शिक्षण आणि भाषा यासारख्या विषयांमध्ये-शिक्षकांची भरती शाळा किंवा शाळा संकुलात केली जाऊ शकते आणि शाळांमध्ये शिक्षकांच्या वाटणीचा विचार केला जाऊ शकतो. राज्य व केंद्रशासित प्रदेश सरकारांनी दत्तक घेतलेल्या शाळांच्या गटबद्धतेनुसार.

7 पारंपारिक स्थानिक कला, व्यावसायिक हस्तकला, उद्योजकता कृषी किंवा इतर कोणत्याही विषयात जेथे स्थानिक तज्ञ आहेत अशा विविध विषयांमध्ये मास्टर इन्स्ट्रक्टर म्हणून स्थानिक प्रख्यात व्यक्ती किंवा तज्ञांना नियुक्त करण्यासाठी मास्टर इन्स्ट्रक्टर शाळा व शालेय संकुलांची भरती करण्यास प्रोत्साहित केले जाईल. विद्यार्थ्यांना फायदा होण्यासाठी आणि स्थानिक ज्ञान आणि व्यवसायांचे जतन आणि संवर्धन करण्यात मदत करण्यासाठी याचा विकास केला जाईल.

8 शिक्षकांना स्वयं-सुधारणा आणि त्यांच्या व्यवसायातील सर्वोत्तम नवकल्पना आणि प्रगती शिकण्यासाठी संधी दिली जातील. हे स्थानिक[प्रादेशिक] राज्य] राष्ट्रीय आणि आंतरराष्ट्रीय कार्यशाळा तसेच ऑनलाइन शिक्षक विकास मॉड्युलसह अनेक पद्धतींमध्ये ऑफर केले जातील. प्राचार्यध्वएचएम सह प्रत्येक शिक्षकाने त्यांच्या स्वतःच्या व्यावसायिक विकासासाठी दरवर्षी किमान 50 तासांच्या संधींमध्ये भाग घेणे अपेक्षित आहे.

9 शिक्षकांना प्रोत्साहन दिले जाईल आणि उत्कृष्ट काम करणार्या शिक्षकांना मान्यता मिळणे आवश्यक आहे आणि त्यांना प्रोत्साहन दिले पाहिजे आणि सर्व शिक्षकांना त्यांचे उत्कृष्ट कार्य करण्यासाठी प्रोत्साहन देण्यासाठी त्यांना पगारवाढ देण्यात यावी. म्हणून, कार्यकाळ, पदोन्नती आणि वेतन रचना यांची एक मजबूत गुणवत्तेवर आधारित रचना विकसित केली जाईल. ज्यामध्ये प्रत्येक शिक्षक टप्प्यात अनेक स्तर असतील जे उत्कृष्ट शिक्षकांना प्रोत्साहन देतात आणि ओळखतात. त्याचसाठी कार्यक्षमतेचे योग्य मूल्यांकन करण्यासाठी एकाधिक पॅरामीटर्सची प्रणाली विकसित केली जाईल. राज्य केंद्रशासित प्रदेश सरकारांद्वारे केशव चंद्र मंडळ जे समयस्क पुनरावलोकनांवर आधारित आहे. उपस्थिती वचनबद्धता बच्चे चे तास आणि शाळा आणि समुदायासाठी सेवांचे इतर प्रकार या धोरणात करिअरच्या संदर्भात, कालावधी म्हणजे कार्यप्रदर्शन आणि योगदानाचे योग्य मूल्यांकन केल्यानंतर कायमस्वरूपी नोकरीसाठी पुष्टी करणे, तर ट्युअर ट्रॅक म्हणजे प्रोबेशनच्या आधीच्या कार्यकाळाचा कालावधी होय.

10 करिअर वाढीची संधी पुढे, हे सुनिश्चित केले जाईल की करिअरची वाढ (कार्यकाळ, पदोन्नती, पगारवाढ इ. एकाच शाळेच्या टप्प्यात शिक्षकांसाठी उपलब्ध आहे (म्हणजे., मूलभूत पूर्वतयारी, मध्यम किंवा

माध्यमिक), आणि सुरुवातीच्या टप्प्यात शिक्षक होण्यापासून नंतरच्या टप्प्यात जाण्यासाठी करिअरच्या प्रगतीशी संबंधित प्रोत्साहन नाही (जरी अशा प्रकारच्या करिअरच्या टप्प्यावर जाण्याची परवानगी असेल, जर शिक्षकाची अशा हालचालीसाठी इच्छा आणि पात्रता असेल तरशालेय शिक्षणाच्या सर्व टप्प्यांवर उच्च दर्जाच्या शिक्षकांची आवश्यकता असते आणि कोणताही टप्पा इतर कोणत्याही टप्प्यापेक्षा महत्त्वाचा मानला जाणार नाही या वस्तुस्थितीचे समर्थन करण्यासाठी हे आहे.

11 विशेष शिक्षक विशेष गरजा असलेल्या मुलांना किंवा दिव्यांगांना शिकवण्यासाठी विशेष शिक्षकांची अतिरिक्त आवश्यकता असेल. अशा मुलांच्या विशेष गरजा समजून घेण्यासाठी शिक्षकांना विशेष कौशल्याची आवश्यकता असेल. विषय शिक्षकांना पूर्णवेळ किंवा अर्धवेळ आधारावर पूर्व-सेवा किंवा सेवा मोडमध्ये एक विशेष प्रमाणपत्र अभ्यासक्रम ऑफर केला जाईल. सध्या फक्त सामान्य विषयाचे शिक्षकच विशेष गरजा असलेल्या मुलांना त्यांच्या विशेष गरजा समजून घेता शिकवत आहेत. NEP-2020 ही समस्या दूर करेल कारण ते शिक्षकांना अशा मुलांच्या गरजांचे विशेष प्रशिक्षण देईल.

शैक्षणिक तंत्रज्ञानाचा वापर आणि शिकाऊ-केंद्रित आणि सहयोगी शिक्षण. सर्व बी. एड. याशिवाय विशेष लहान स्थानिक शिक्षक शिक्षण कार्यक्रम किंवा कम्प्यू किंवा शाळा संकुलात उपलब्ध असतील ज्यांना शालेय संकुलात शिकवण्यासाठी मास्टर ट्रेनर म्हणून नियुक्त केले जाऊ शकते अशा नामवंत स्थानिक व्यक्तींसाठी लहान पद- बी. एड. बहु विद्याशाखीय महाविद्यालये आणि विद्यापीठांमध्ये ज्या शिक्षकांना अध्यापनाच्या अधिक विशेष क्षेत्रात जाण्याची इच्छा असेल अशा शिक्षकांसाठी प्रमाणन अभ्यासक्रमही मोठ्या प्रमाणावर उपलब्ध करून दिले जातील. जसे की अपंग विद्यार्थ्यांना शिकवणे किंवा शालेय शिक्षण प्रणालीमध्ये नेतृत्व आणि व्यवस्थापन पदांवर जाणे किंवा पायाभूत पूर्वतयारी मध्यम आणि माध्यमिक टप्प्यांमधील एका टप्प्यातून दुसऱ्या टप्प्यावर जाणे.

संदर्भ ग्रंथ

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Impact of Artificial Intelligence In Higher Education: An Overview

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ABSTRACT: Artificial intelligence (AI) is gaining significance in all the sectors of the economy and hence in higher education too. From last few years, this concept of “Artificial Intelligence in Education (AIED)” has experienced significant developments. This study attempted to find out how the concept of artificial intelligence can be applied in teaching and learning in higher education and impacts of using AI in higher education. It examines the learning implications of frequently evolving technologies on the methods and extent of learning as well as teaching. AI gives opportunities to higher education services to become easily accessible at an extraordinary speed, not only inside the class but also outside the classroom.

Key words: Higher Education, Artificial Intelligence, Technology, teaching-learning, Students attributes

Introduction

The future of advanced education is naturally linked with developments on new technologies and computing capacities of the new intelligent machines. In this field, advances in artificial intelligence open to new possibilities and challenges for tutoring and literacy in advanced education, with the eventuality to unnaturally change governance and the internal armature of institutions of advanced education. With answers to the question of 'what is artificial intelligence' shaped by philosophical positions taken since Aristotle, there's little agreement on an “ultimate definition”. The future of advanced education is naturally linked with developments on new technologies and computing capacities of the new intelligent machines. In this field, advances in artificial intelligence open to new possibilities and challenges for tutoring and literacy in advanced education, with the eventuality to unnaturally change governance and the internal armature of institutions of advanced education. With answers to the question of 'what is artificial intelligence' shaped by philosophical positions taken since Aristotle, there's little agreement on an “ultimate definition”. Education really plays a large and significant part for people abiding in developing countries. Advanced education institutes are playing an important part in a nation's development. Profitable and social development of individual depends upon two important factors viz. knowledge and literacy. People who are largely educated are more likely to get high professed jobs and compensation, hence have further probability to enhance their living norms. Therefore people of developing country have further deep counteraccusations of advanced education as education equips a person to live the life chosen by them to lead a creative and more productive life. Good Education and professed scholars also leads to advanced growth and enhancement for the country as a whole particularly in developing countries. Therefore in developing nation like India part of advanced education becomes more prominent and hence the literacy process should be optimized. A technological revolution has taken place in most of the parts of recent world, in last few decades. Society has dramatically shifted from traditionally living conditions driven society to the present knowledge society where creativity and inventiveness drives the society. Earlier educational system was characterized where teachers and students physically interacted in the classroom and majority of work is done manually in higher education institutes. But major technological developments in the last 20

years and mostly because of the Internet have changed people view of education and their working and a new concept that has evolved during the last few years is "artificial intelligence".

WHAT IS ARTIFICIAL INTELLIGENCE?

Artificial Intelligence (AI) is seeping into many aspects of our everyday lives, with common internet applications, smartphones and even household appliances. With in education, AI is a rapidly emerging field and there is a strong potential for AI to greatly extend and enhance teaching and learning in higher education (Crompton et al., 2020). AI is defined as "computing systems that are able to engage in human-like processes such as learning, adapting, synthesizing, self-correction and use of data for complex processing tasks" (Popenici & Kerr, 2017). In the Horizon Report 2020 report (Brown et al., 2020), AI is listed as one of six technologies with the potential for high impact in higher education. The Horizon Report (2020), is an annual publication that examines the major trends in educational technology that are shaping global higher education.

ROLE OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION

Many research works demonstrate that in higher education, artificial intelligence is important for teachers and students because application of such technologies encourages more flexible learning solutions for students without any limitation. With the help of artificial intelligence universities around the world are enrolling increased number of students due to increased flexibility and speed. However, its implementation in teaching has also proven relatively expensive but when compared with the other manual work related costs it comes out as economical. Though, use of artificial intelligence in the long run among college students is far more cost effective compared to education being conducted in a more traditional way and tasks done manually. Developed countries of the world have already implemented the process of artificial intelligence successfully. However, developing countries are still at a preliminary stage compared to developed countries in artificial intelligence implementation. Weak infrastructure, poor information access, lack of support from institutes, insufficient necessary resources, poor technological skills, these are various obstacles for developing countries wanting to implement artificial intelligence as a tool in higher education.

AI is used in education system in grading, in this process teachers can mechanize grading of students for certain fixed set of questions. AI can also be applied in adaptive and individualized learning to fulfill students requirements. AI assists the teachers to access the understanding capacity of the students on their lectures and empower them to give the appropriate clues for students. It works as a teacher for the students and makes them learn concepts easily.

Artificial intelligence driven projects provide supportive input for the both students and educators. It causes the instructors to screen the performance of the students and empower them improve the guidance that they give for the students. AI frameworks in schools have changed the manner in which students find and cooperate with coordinated innovation. This has an impact to change educators as facilitators by giving students intuitive learning knowledge. Students can learn by the experimentation strategy without fear as AI bolsters in their learning and give help to their improvement. AI frameworks procured information will change the manner in which the schools discover, instruct and bolster under studies. In fact at some places it may even supplant educators in certain situations. It has turned into a learning buddy that helps students in their learning procedure (Sharma c.).

Artificial Intelligence (AI) creates an encouraging environment, especially, can provide a favorable context for students learning characteristics and process. Artificial intelligence consists of all forms of electronically reinforced learning, processing and teaching. The easy and flexible structure of these AI influenced environments empowers learners to accommodate their personal needs in their own time learning. Thus we can say that AI is a well-designed tool that offers a flexible arrangement,

collaboration opportunities, and options and control over learning process that can provide learners and teachers with the opportunity to pursue learning process effectively. Also, in AI in higher education institutes is the responsibility of tutors. Using AI teachers can create a learning environment that permits the students to develop a better understanding of content and build associations with instructors and students.

Entire globe has completely digitalized. Education has definitely been influenced by the digital world. The fast paced technology provides individuals in the area to training and learning with unlimited possibilities. With the global interest in computers, artificial intelligence has been focused in learning environment. This AI presents different functions for academic surroundings. Computers have potential advantages to both the instructors and the students. With the arrival of the computer, AI is playing an important role in the higher education institutes. Plenty of programs have been created for various fields or professional classes. The conventional teaching and learning methods usually lack efficient methods of explaining an intuitional and clear material, while AI can make up through the use of new software and hardware methods. From the viewpoint of AI program, there is more scope in teaching in the classroom compared to other mere learning methods. Thus, the emphasis is given on adopting AI in the classroom as well as outside classroom.

AI Effects on Higher Education

With the job substitutions and relocations created by AI, future job market and required ranges of skills would be fundamentally unique in relation to now (Siau, 2017, 2018; Rainie and Anderson,). Various examinations revealed that jobs that include routine tasks and organized are simpler to computerize and will be supplanted by AI soon. Despite what might be expected, work assignments that are progressively unstructured and included overseeing individuals are harder to be supplanted by AI. Advanced education should be versatile and develop ceaselessly. Advanced education will be affected by AI from numerous points of view and the two noteworthy territories are educational programs and admissions. To begin with, AI will sweepingly affect educational plan in advanced education. The quality of AI is its speed, precision, and consistency. It is an act of futility to contend with AI on these measurements. Then again, AI is as yet feeble in delicate expertise, for example, "creativity, innovation, critical-thinking, problem-solving, socializing, leadership, empathy, collaboration, and communication". It is not necessarily the case that we ought to overlook the hard skills, for example, "science, math, and engineering". Advanced education should even now train the students in the basics of science and math, and in the meantime gives opportunities and training to students to upgrade their delicate abilities. A few colleges are as of now offering AI and Machine Learning courses to software engineering students, yet additionally business students as business managers and officials need to comprehend the abilities, constraints, and ramifications of AI in the business world.

The other effect of AI in advanced education is admissions. Aesthetic sciences and humanities majors may turn out to be increasingly well known as these zones are less susceptible to "AI-invasion." Areas, for example, bookkeeping and budgetary investigation that might be hit hard by AI may see an intense drop in admissions. Likewise, with the wealth gap and conceivably millions (if not billions) out of occupations, advanced education may never again be reasonably priced to many.

Conclusion:

Technology is increasingly making smarter machines and systems. They can work alongside humans as professional partners, augmenting human expertise and growing talent. It is proven that when humans and machines join hands, they create great value for society. Education will have to play bigger role to make the next generation equipped with such upgrades. AI will soon become integral part of education system including institutions, teachers and student

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राष्ट्रीय शैक्षणिक धोरण २०२०मधील मूल्य शिक्षण: पारंपरिक ग्रंथालयाचे योगदान

प्रा. विठ्ठल विश्वनाथ जाधव

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दयानंद वाणिज्य महाविद्यालय लातूर

सारांश :

नवीन राष्ट्रीय शैक्षणिक धोरणात शिक्षणाच्या गुणवत्तेत परिवर्तन आणि वाढ करण्याबरोबर विद्यार्थ्यांमध्ये मूल्य शिक्षण रुजविण्याच्या उद्देशाने महाविद्यालयीन ग्रंथालये एक प्रभावी साधन होऊ शकतात. विद्यार्थ्यांना नैतिकता, सामाजिक जबाबदारी, आणि जीवनातील मूलभूत मूल्ये शिकण्याची संधी मिळते. ग्रंथालयाच्या माध्यमातून मूल्य शिक्षणावर भर देऊन विद्यार्थ्यांचा सर्वांगीण विकास साधता येऊ शकतो. ग्रंथालयांमध्ये मूल्य शिक्षणाचे महत्त्व अधोरेखित करण्यासाठी अनेक उपक्रम आणि मार्गदर्शक तत्त्वे स्वीकारली गेली आहेत. या धोरणानुसार, ग्रंथालये मूल्य शिक्षणाचे केंद्र म्हणून कार्य करू शकतात. या संशोधन लेखामध्ये राष्ट्रीय शैक्षणिक धोरणास अनुकूल ग्रंथालयांमध्ये कोणत्या प्रकारे वाचकांना मूल्य शिक्षण देता येऊ शकते यावर प्रकाश टाकण्यात आला आहे.

महत्त्वाच्या संज्ञा : नवीन शैक्षणिक धोरण 2020, मूल्य शिक्षण, ग्रंथालयांची भूमिका

प्रस्तावना:

हल्ली शिक्षणाचा अर्थ केवळ पाठ्यपुस्तक, अभ्यासक्रम, परीक्षा, निकाल, असाच अभिप्रेत झाला आहे. या जगात ही जीवघेणी स्पर्धा निर्माण झाली आहे. मात्र या स्पर्धेच्या जगामध्ये 'स्पर्धेची परीक्षा' का 'परीक्षेची स्पर्धा' याचा अर्थ स्पष्ट होत नाही. केवळ स्पर्धा व अव्वल क्रमांक म्हणजे शिक्षण नाही. मानवतावादाचा सर्वांगीण विकास करणे हे सर्वात मोठे आव्हान, शिक्षण व्यवस्थेवर आहे. शिक्षण प्रक्रियेमध्ये आधुनिकता विकास, प्रगतीचे व ज्ञानाचे धडे देण्यापेक्षा मानवतेचे तत्वज्ञानाचे व मूल्यांचे धडे देणे गरजेचे वाटू लागले आहे. यातूनच मूल्य शिक्षणाची गरज अभ्यासक्रमामध्ये जाणवू लागली आहे. मूल्य शिक्षण विद्यार्थ्यांच्या आयुष्यातील प्रत्येक पैलूवर सकारात्मक परिणाम करते. हे त्यांना जीवनातील आव्हानांना समर्थपणे तोंड देण्याची आणि एक आदर्श, उत्तरदायी, आणि नैतिक व्यक्तिमत्त्व विकसित करण्याची संधी देते. त्यामुळे मूल्य शिक्षणाला शिक्षण प्रणालीतील एक अविभाज्य घटक मानले जाते. राष्ट्रीय शैक्षणिक धोरण २०२० ने भारतीय शिक्षण व्यवस्थेत विविध सुधारणा घडवून आणण्याबरोबर मूल्य शिक्षणास विशेष महत्त्व दिले आहे. या धोरणाच्या पार्श्वभूमीवर पारंपरिक ग्रंथालयांची भूमिका देखील महत्त्वाची ठरते.

नवीन शैक्षणिक धोरण 2020:

नवीन शैक्षणिक धोरण हे सर्वांगीण विकासासाठी शिक्षण, लवचिक मूल्यमापन, कौशल्य विकास, तंत्रज्ञानाचे एकीकरण, शिक्षक प्रशिक्षण आणि उच्च शिक्षण सुधारणांवर भर देत आहे. हे बदल विद्यार्थी-केंद्रित असून

सर्वसमावेशक आहेत. २१व्या शतकात शैक्षणिक प्रगती होण्यासाठी विद्यार्थ्यांना आवश्यक कौशल्ये, ज्ञान आणि क्षमतांनी सुसज्ज करणारे दर्जेदार शिक्षण देण्यासाठी नवीन शैक्षणिक धोरण तयार आहे त्यामध्ये खालील मुद्द्यावर मुद्द्यावर भर देण्यात आलेला आहे.

१. समग्र विकास: विद्यार्थ्यांच्या संपूर्ण विकासावर लक्ष केंद्रित करून त्यांना जीवन कौशल्ये, भावनिक संतुलन, आणि नैतिक मूल्ये शिकवणे.
२. अभ्यासक्रमात लवचिकता: मुलांना आवडत्या विषयांचे स्वातंत्र्य देण्यासाठी अभ्यासक्रमात लवचिकता.
३. तंत्रज्ञानाचा वापर: शिक्षणात तंत्रज्ञानाचा प्रभावी वापर करून डिजिटल साक्षरतेला प्रोत्साहन.
४. बहुभाषिकता: विद्यार्थ्यांना त्यांच्या मातृभाषेतून शिकण्याची संधी उपलब्ध करून देणे.
५. शिक्षणात समावेशकता: सर्व विद्यार्थ्यांसाठी समान संधी निर्माण करणे, ज्यामध्ये आर्थिक दृष्ट्या दुर्बल आणि सामाजिक दृष्ट्या मागासवर्गातील विद्यार्थ्यांचा समावेश.

मूल्य शिक्षणाचे महत्त्व:

१. मूल्य शिक्षण विद्यार्थ्यांच्या आयुष्यातील प्रत्येक पैलूवर सकारात्मक परिणाम करते. हे त्यांना जीवनातील आव्हानांना समर्थपणे तोंड देण्याची आणि एक आदर्श, उत्तरदायी, आणि नैतिक व्यक्तिमत्व विकसित करण्याची संधी देते. त्यामुळे मूल्य शिक्षणाला शिक्षण प्रणालीतील एक अविभाज्य घटक मानले जाते. मूल्य शिक्षणाची महत्त्वपूर्ण भूमिका विद्यार्थ्यांच्या सर्वांगीण विकासात असते. मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये नैतिकता, आदर, सामाजिक जबाबदारी, आणि जीवन कौशल्ये विकसित होतात, जे त्यांना एक आदर्श नागरिक बनण्यास मदत करतात. मूल्य शिक्षणाची महत्त्वता खालीलप्रमाणे स्पष्ट करता येईल:

१. नैतिक मूल्यांची स्थापना: मूल्य शिक्षणाद्वारे विद्यार्थ्यांना नैतिकता, प्रामाणिकपणा, सत्य, अहिंसा, आणि आदर यासारखी मूल्ये शिकण्याची संधी मिळते. हे मूल्य त्यांना आयुष्यातील विविध निर्णय घेताना नैतिकतेचा आधार देतात. विद्यार्थ्यांच्या वर्तनात चांगले मूल्य निर्माण होऊन ते आदर्श आचरणाचे उदाहरण बनू शकतात. सामाजिक कौशल्ये आणि जबाबदारी: मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये सामाजिक जागरूकता वाढते, ज्यामुळे ते समाजातील समस्या ओळखू शकतात आणि त्यांच्याशी योग्य प्रकारे हाताळू शकतात. मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये सहकार्य, समजूतदारपणा, आणि एकत्रित कार्य करण्याची वृत्ती विकसित होते.

३. व्यक्तिमत्व विकास: मूल्य शिक्षण विद्यार्थ्यांच्या आत्मविश्वासाला बळकटी देते आणि त्यांचा स्वाभिमान वाढवते. मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये आत्मनियंत्रणाची भावना आणि स्वावलंबन विकसित होते.

४. भावनिक बुद्धिमत्ता/संवेदनशीलता: मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये संवेदनशीलता निर्माण होते, ज्यामुळे ते इतरांच्या भावनांचा आदर करतात आणि त्यांच्या समस्या समजून घेण्याचा प्रयत्न करतात. मूल्य शिक्षण विद्यार्थ्यांच्या जीवनात सकारात्मक दृष्टिकोन निर्माण करते, ज्यामुळे ते जीवनातील आव्हानांना समर्थपणे सामोरे जाऊ शकतात.

५. आर्थिक जबाबदारी आणि अडचणीचे व्यवस्थापन: मूल्य शिक्षणामुळे विद्यार्थी आर्थिक, पर्यावरणीय, आणि सामाजिक संकटे व्यवस्थापित करण्यास सक्षम होतात. मूल्य शिक्षणामुळे विद्यार्थी पर्यावरणाचे संवर्धन करण्यास आणि नैसर्गिक संसाधनांचे संरक्षण करण्यास प्रेरित होतात.

६. शांती आणि सद्भावना: मूल्य शिक्षणामुळे विद्यार्थी शांतिपूर्ण अस्तित्वासाठी सज्ज होतात, ज्यामुळे सामाजिक स्तरावर शांती आणि सद्भावना प्रस्थापित होते. मूल्य शिक्षणामुळे विद्यार्थी द्वेष, वैमनस्य, आणि हिंसा यांपासून दूर राहून एक द्वेषमुक्त समाज निर्मिती करतात.

७. शैक्षणिक गुणवत्ता आणि कार्यक्षमता: मूल्य शिक्षणामुळे विद्यार्थ्यांची शैक्षणिक गुणवत्ता सुधारते कारण ते अभ्यासाकडे गांभीर्याने आणि प्रामाणिकपणे पाहतात. मूल्य शिक्षणामुळे विद्यार्थ्यांची कार्यक्षमता आणि उत्पादकता वाढते.

८. सर्वांगीण विकास: मूल्य शिक्षण विद्यार्थ्यांच्या शारीरिक, मानसिक, बौद्धिक, आणि भावनिक विकासाला प्रोत्साहन देते. मूल्य शिक्षणामुळे विद्यार्थी चांगले नागरिक बनतात, ज्यामुळे देशाच्या प्रगतीत त्यांचा महत्त्वपूर्ण वाटा असतो.

नवीन शैक्षणिक धोरण २०२० अंतर्गत ग्रंथालयासाठी संधी:

नवीन शैक्षणिक धोरणामुळे महाविद्यालयीन ग्रंथालये आणि ग्रंथपालांना नवनवीन संधी आणि आव्हाने उपलब्ध होतील. ग्रंथपालांनी या धोरणाचा फायदा घेत विद्यार्थ्यांना आणि शिक्षकांना त्यांच्या शिक्षण आणि संशोधनात सहाय्य करणे आवश्यक आहे. त्यामुळे ग्रंथालये केवळ ग्रंथ व नियतकालिके साठविण्याची जागा न राहता ज्ञानाचे केंद्रीकरण झाले आहे.

१. अधिकृत ग्रंथालये: नवीन शैक्षणिक धोरणामुळे, ग्रंथालयांची संख्या वाढविण्यावर भर देण्यात येईल. त्यासाठी निधी आणि संसाधने उपलब्ध करून दिली जातील.

२. माहिती आणि संसाधनांची उपलब्धता: विविध प्रकारची पुस्तके, जर्नल्स, ई-पुस्तके, ऑडिओ व्हिड्युअल माध्यमे यांचा समावेश असलेले आधुनिक ग्रंथालय उपलब्ध करून देणे.

३. शिक्षक आणि विद्यार्थ्यांसाठी संसाधने: शिक्षकांच्या अध्यापन प्रक्रियेस मदत करण्यासाठी विशेष साहित्य आणि साधने उपलब्ध करून देणे. विद्यार्थ्यांच्या संशोधन आणि शिक्षणाची गुणवत्ता वाढविण्यासाठी संसाधनांची उपलब्धता वाढवणे.

नवीन शैक्षणिक धोरणास अनुकूल ग्रंथालयांची भूमिका:

ग्रंथालये ही ज्ञानाचा स्त्रोत असून विद्यार्थ्यांना विविध विषयांवरील सखोल माहिती मिळविण्यास मदत करतात. संशोधनाची आवड असलेल्या विद्यार्थ्यांसाठी ग्रंथालये महत्वाची भूमिका बजावतात, जिथे ते अधिकाधिक पुस्तकांचा आणि संशोधन पत्रिकांचा उपयोग करू शकतात. नवीन शैक्षणिक धोरणाच्या अंतर्गत ग्रंथालये शैक्षणिक प्रणालीतील एक अत्यंत महत्वाचा घटक आहे. या धोरणाने ग्रंथालयांना नवीन दिशादर्शन दिले आहे, ज्यामुळे ते विद्यार्थ्यांना ज्ञान आणि संशोधनात मदत करू शकतात, त्याचबरोबर शिक्षक आणि संशोधकांना सुद्धा सहाय्य करू शकतात.

आधुनिक काळात, डिजिटल ग्रंथालयांची मागणी वाढत आहे, जेणेकरून विद्यार्थ्यांना इंटरनेटच्या माध्यमातून विविध स्त्रोतांना प्रवेश मिळू शकतो. ग्रंथालये विविध भाषांतील आणि विषयांतील पुस्तके उपलब्ध करून, संस्कृतीचे जतन आणि प्रसार करतात. शिक्षक आणि विद्यार्थ्यांना त्यांच्या विषयातील अद्ययावत माहिती आणि साहित्य उपलब्ध करून शिक्षणाची गुणवत्ता वाढवतात. ग्रंथालयांमध्ये सोयीस्कर वातावरण निर्माण करून आणि अधिक पुस्तके, संगणक, आणि इंटरनेट सुविधांमध्ये सुधारणा करण्यास पाठिंबा. ग्रंथालयांमध्ये वाचन,

लेखन, आणि इतर शैक्षणिक कार्यक्रमांची आयोजन विद्यार्थ्यांच्या विविध गटांसाठी ग्रंथालयांच्या वापरास देणे. महाविद्यालये, आणि विद्यापीठे यांच्यातील ग्रंथालयांमधील सहयोग वाढवून संसाधनांचा वापर सुलभ करणे.

नवीन शैक्षणिक धोरण महाविद्यालयीन ग्रंथालये आणि ग्रंथपालांसाठी काही विशिष्ट मार्गदर्शक तत्त्वे आणि संधी उपलब्ध करून देत आहे. शिक्षण सर्वांसाठी उपलब्ध असले पाहिजे. त्यासाठी ग्रंथालयांची भूमिका विद्यार्थ्यांना शिक्षणाच्या प्रवाहात आणण्यासाठी महत्त्वाची ठरते. ग्रंथपाल विविध गटांसाठी विशेष उपक्रम राबवू शकतात ज्यामुळे जास्तीत जास्त विद्यार्थी ग्रंथालयाचा लाभ घेऊ शकतील. यामध्ये ग्रंथालये डिजिटल संसाधने उपलब्ध करून देणे, ई-पुस्तके आणि ऑनलाइन डेटाबेसचा वापर प्रोत्साहन देणे याचा समावेश आहे. ग्रंथपालांनी डिजिटल साधनांचा वापर करून नवीन ज्ञानस्रोत शोधणे आणि विद्यार्थ्यांना उपलब्ध करून देणे हे आवश्यक ठरेल. महाविद्यालये आणि विद्यापीठांमध्ये संशोधनाला प्रोत्साहन देणे आवश्यक आहे. ग्रंथालये संशोधन साहित्य, जर्नल्स, डेटाबेस, आणि इतर साधने उपलब्ध करून देऊन संशोधन वाढविण्यात महत्त्वाची भूमिका बजावू शकतात. ग्रंथपाल संशोधन कौशल्ये विकसित करण्यासाठी कार्यशाळा आणि सेमिनार आयोजित करू शकतात.

ग्रंथालयांमध्ये मूल्य शिक्षणावर आधारित उपक्रम :

महाविद्यालयीन ग्रंथालयांमध्ये मूल्य शिक्षणावर भर देण्यासाठी आणि विद्यार्थ्यांच्या सर्वांगीण विकासाला प्रोत्साहन देण्यासाठी विविध उपाययोजना आणि उपक्रम राबवले जाऊ शकतात. महाविद्यालयीन ग्रंथालये मूल्य शिक्षणासाठी एक प्रभावी साधन होऊ शकतात. या उपक्रमांमधून विद्यार्थ्यांना नैतिकता, सामाजिक जबाबदारी, आणि जीवनातील मूलभूत मूल्ये शिकण्याची संधी मिळते. ग्रंथालयाच्या माध्यमातून मूल्य शिक्षणावर भर देऊन विद्यार्थ्यांचा सर्वांगीण विकास साधता येऊ शकतो.

१. मूल्य शिक्षणाशी संबंधित साहित्य आणि संसाधने: महाविद्यालयीन ग्रंथालये मूल्य शिक्षणासाठी एक प्रभावी साधन होऊ शकतात. या उपक्रमांमधून विद्यार्थ्यांना नैतिकता, सामाजिक जबाबदारी, आणि जीवनातील मूलभूत मूल्ये शिकण्याची संधी मिळते. ग्रंथालयाच्या माध्यमातून मूल्य शिक्षणावर भर देऊन विद्यार्थ्यांचा सर्वांगीण विकास साधता येऊ शकतो. ग्रंथालयात नैतिक मूल्ये, मानवी मूल्ये, संस्कार, आदर्श, सामाजिक जबाबदारी, आणि जीवन कौशल्ये या विषयांवरील पुस्तके आणि संदर्भ साहित्य उपलब्ध करणे. नैतिकता, मूल्य शिक्षण, आणि जीवन कौशल्ये यावर आधारित डॉक्युमेंटरीज, व्हिडिओज, आणि ऑडिओ रेकॉर्डिंग्ज उपलब्ध करणे.

२. मूल्य शिक्षणासंबंधी कार्यक्रम आणि कार्यशाळा : वाचन आणि चर्चा सत्रे: नैतिक मूल्ये आणि जीवनात त्यांच्या उपयोगावर आधारित वाचन सत्रे आणि चर्चा सत्रांचे आयोजन करणे. मूल्यांशी संबंधित नाटक, लोककला, आणि सांस्कृतिक कार्यक्रमांचे आयोजन करून विद्यार्थ्यांना मूल्यांचे महत्त्व पटवून देणे. नैतिक निर्णय, जीवन कौशल्ये, आणि सामाजिक जबाबदारी या विषयांवर कार्यशाळा आणि प्रशिक्षण कार्यक्रमांचे आयोजन करणे.

३. ग्रंथालयाचे वातावरण आणि अनुभव: ग्रंथालयातील विविध विभागांमध्ये मूल्यांवर आधारित थीम तयार करणे, जसे की "ईमानदारीचा कोपरा," "समर्पणाचा कोपरा," इत्यादी. ग्रंथालयात प्रेरणादायी कोट्स, कथित संदेश, आणि मूल्यांवर आधारित गोष्टी लावून ठेवणे. विद्यार्थ्यांना मूल्यांवर विचार करण्यासाठी आणि चिंतन करण्यासाठी विशेष शांत आणि चिंतनशील जागा उपलब्ध करून देणे.

४. विद्यार्थी सहभाग आणि योगदान: ग्रंथालयाच्या माध्यमातून समाजसेवा आणि स्वयंसेवेचे कार्यक्रम राबवून विद्यार्थ्यांमध्ये सामाजिक मूल्ये आणि जबाबदारीची जाणीव निर्माण करणे. मूल्य शिक्षणावर आधारित

विद्यार्थी समिती स्थापन करणे ज्यामध्ये विद्यार्थी स्वतः उपक्रम आणि कार्यक्रम राबवू शकतील. मूल्य तज्ञ आणि मार्गदर्शकांना निमंत्रित करून मार्गदर्शन सत्रे आयोजित करणे.

५. सर्वेक्षण आणि मूल्यांकन: मूल्य शिक्षणाच्या उपक्रमांबद्दल विद्यार्थ्यांचा अभिप्राय घेणे आणि त्यानुसार उपक्रमांमध्ये सुधारणा करणे. मूल्य शिक्षणाच्या उपक्रमांचा विद्यार्थ्यांवर होणारा प्रभाव मोजणे आणि त्यानुसार पुढील रणनीती ठरवणे.

६. गोष्टींचा संग्रह आणि प्रदर्शन: नैतिक आणि मूल्यांवर आधारित गोष्टींचा संग्रह उपलब्ध करून देणे आणि विद्यार्थ्यांना त्यातून शिकण्याची संधी देणे. मूल्यांशी संबंधित गोष्टींचे आणि कलाकृतींचे प्रदर्शन आयोजित करणे.

८. प्रेरणा आणि प्रोत्साहन: मूल्य शिक्षणाशी संबंधित उपक्रमांमध्ये सहभागी होणाऱ्या आणि उल्लेखनीय कार्य करणाऱ्या विद्यार्थ्यांना बक्षीस देणे. विद्यार्थ्यांच्या सहभागाचे कौतुक करण्यासाठी प्रमाणपत्रे आणि प्रशस्तिपत्रे प्रदान करणे.

समारोप:

तंत्रज्ञानाचा वापर करून ग्रंथालय व्यवस्थापन अधिक कार्यक्षम करणे अपेक्षित आहे. ग्रंथपालांनी सूचना शोधण्याचे तंत्र, डेटाबेस वापरण्याचे कौशल्य, आणि शोध प्रक्रिया सोपी करण्यावर भर द्यावा. विद्यार्थ्यांना योग्य साहित्य आणि संसाधने निवडण्यासाठी शैक्षणिक समुपदेशन/ मार्गदर्शन करणे. अभ्यासक्रमाशी निगडित साहित्य उपलब्ध करून देणे आणि विद्यार्थ्यांच्या गरजेनुसार संदर्भ उपलब्ध करणे. डिजिटल लायब्ररी, ऑनलाइन रीडिंग प्लॅटफॉर्म, आणि डिजिटल रिसोर्सेस यांचा समावेश करून ग्रंथालयाची सेवा सुधारणे. विद्यार्थ्यांना डिजिटल साधने वापरण्याचे प्रशिक्षण देणे. इतर शैक्षणिक संस्था, प्रकाशन संस्था, आणि ऑनलाइन प्लॅटफॉर्मशी भागीदारी करून ग्रंथालयाचा विस्तार करणे. विविध कार्यशाळा, वाचन कार्यक्रम, आणि चर्चासत्रे आयोजित करून ग्रंथालयाचा उपयोग वाढविता येईल.

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“IMPACT OF AI ON SKILL ENRICHMENT AND KNOWLEDGE TRANSFER”**Mr. Mahesh Pandurang Kesarkar**

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Abstract-

The rapid advancements in Artificial Intelligence (AI) are reshaping the landscape of skill enrichment and knowledge transfer across various domains. This paper explores the multifaceted impact of AI technologies, such as machine learning, natural language processing, and intelligent tutoring systems, on enhancing human capabilities and facilitating the transfer of knowledge. We analyze how AI-driven platforms personalize learning experiences, adapt to individual learner needs, and streamline professional development, thereby promoting continuous skill enhancement. Furthermore, the role of AI in automating mundane tasks is examined, freeing up time for more strategic thinking and creative endeavors. The study also addresses potential challenges, including the digital divide and over-reliance on technology, while proposing strategies to mitigate these issues. Ultimately, our findings underscore the transformative potential of AI as a pivotal tool for improving skill proficiency and ensuring effective knowledge transfer in an increasingly competitive and dynamic workforce.

Key words –Artificial Intelligence, Skill Enrichment, Knowledge Transfer, Virtual, Personalize

Introduction-

The advent of artificial intelligence (AI) has ushered in a transformative era across various sectors, redefining the paradigms of skill enrichment and knowledge transfer. As organizations and individuals increasingly rely on AI technologies, the traditional methods of learning, training, and disseminating information are undergoing profound changes. AI not only enhances the efficiency of these processes but also empowers learners by personalizing experiences and providing access to vast repositories of information.

In the context of skill enrichment, AI-driven tools and platforms are enabling tailored learning paths that cater to individual learning styles and paces. This personalized approach facilitates deeper engagement, promotes continuous skill development, and prepares individuals for the dynamic demands of the modern workforce. Moreover, AI's capabilities in data analysis and pattern recognition are revolutionizing the way knowledge is shared and acquired, breaking down silos and fostering a culture of collaborative learning.

Knowledge transfer, too, has been reimaged through the lens of AI. Intelligent systems can curate and present information in ways that enhance comprehension and retention, making it easier for teams to access critical insights and best practices. Additionally, AI can leverage machine learning algorithms to predict future skill requirements, helping educators and organizations anticipate changes in the job market and adapt training programs accordingly.

As we delve deeper into the impact of AI on skill enrichment and knowledge transfer, it is essential to consider both the opportunities and challenges that arise. While AI presents unprecedented advantages, such as increased accessibility and efficiency, it also prompts important questions regarding equity, ethical considerations, and the role of human oversight. This exploration highlights the need for a balanced approach to integrating AI into learning frameworks, ensuring that technology serves as an enabler of human potential rather than a replacement.

Objectives-

1. To study the concept of Skill Enrichment and Knowledge Transfer.
2. To study the importance of Skill Enrichment and Knowledge Transfer.
3. To study the Impact of AI on Skill Enrichment and Knowledge Transfer.
4. To study the various characteristics of Skill Enrichment and Knowledge Transfer.

Research Methodology -

The current research is a descriptive one. The majority of the secondary data used in this study paper. These facts are gathered from a variety of publications and websites. The secondary data has been gathered in order to meet the study's constructed objectives.

Meaning and Definition –

Skill Enrichment - Skill Enrichment is not just centered on academics; it's about empowerment through a holistic approach and a much greater focus on acquiring applicable skills students can use right away.

Knowledge transfer - Knowledge transfer refers to transferring an awareness of facts or practical skills from one entity to another.

"Knowledge Transfer is a 'contact sport'; it works best when people meet to exchange ideas, sometimes serendipitously, and spot new opportunities". - Tim Minshall

Characteristics - **Skill Enrichment**

- 1) Continuous Learning: Involves ongoing education and practice to enhance existing skills and acquire new ones.
- 2) Practical Application: Focuses on applying skills in real-world settings, enhancing problem-solving abilities and practical ingenuity.
- 3) Adaptability: Encourages learners to adapt their skills to different contexts and challenges, fostering versatility.
- 4) Feedback-Oriented: Utilizes feedback to refine and enhance skill sets, promoting a growth mindset.
- 5) Personalization: Tailors learning experiences to individual needs, interests, and career aspirations, making them more relevant and engaging.
- 6) Collaboration: Often involves working with peers or mentors, facilitating shared learning experiences and exposure to diverse perspectives.
- 7) Variety of Learning Methods: Incorporates various learning methods such as workshops, online courses, simulations, and hands-on training to cater to different learning styles. (Davids et al. 2017)

Knowledge Transfer

- 1) Sharing Information: Involves disseminating knowledge from one individual or group to another, ensuring that critical information is accessible.
- 2) Documentation: Often includes the creation of manuals, reports, or databases to capture and organize knowledge for future reference.
- 3) Mentorship and Coaching: Utilizes experienced individuals to transfer implicit knowledge (tacit knowledge) that may not be easily documented.
- 4) Cultural Context: Acknowledges the influence of organizational culture on how knowledge is shared and utilized, ensuring that transfer methods are culturally sensitive.
- 5) Formal and Informal Channels: Knowledge transfer can occur through formal training sessions, workshops, or informal interactions, such as conversations or networking.
- 6) Technology Utilization: Leverages technology (e.g., intranets, knowledge management systems, and social media) to facilitate the sharing and retrieval of knowledge.

7) Incentives and Motivation: Encourages knowledge sharing by creating incentives and a culture that values learning and collaboration.

8) Measurable Outcomes: Often includes methods to assess the effectiveness of knowledge transfer, such as feedback loops and performance metrics. (Jackson and Hancock, 2010)



Fig. 1.1 Knowledge Transfer

Steps for Transforming Knowledge -

1) Identify & Collect Knowledge

The process all starts with the cultivation of knowledge. This takes place in the culture of your company. This often looks like Brainstorming ideas, learning new skills, Inviting in experts or consultants, seeking solutions to problems, Designing new projects

2) Capture & Store Knowledge

When it comes to documenting and sharing knowledge, a lot of businesses believe they have this on lock. But proper knowledge capture and knowledge management is more than just having a file cabinet or Google Drive folders. You must have an infrastructure that makes sense for your business and makes access to that knowledge fast and simple. Having a knowledge base in place will help you manage both tacit knowledge as well as explicit knowledge that's being generated in your company. This system may include Reports, Visuals and videos, Document libraries, Knowledge portals, CRM systems, a dedicated team.

3) Transfer & Share Knowledge

Now that you have the knowledge and have a system for collection, it's time to circulate that information to other people and/or departments in your organization. This knowledge transition process is made more efficient and affordable if you use the right technology. You'll want to design a sharing mechanism to facilitate transfer AND create a knowledge transfer plan.

4) Apply Knowledge & Measure Results

The next step is to apply this knowledge and measure the results. You can use Knowledge Management tools to assess success across multiple key performance indicators (KPIs).

5) Create New Knowledge

Assume you discover that a new idea, technology, or solution is paying off. You can then apply this to other areas within your company. If the results are coming up short, on the other hand, this presents a new opportunity to innovate. Having a knowledge transfer system ensures that your business is never stagnant when it comes to new ideas and problem-solving. If you want your business to grow, you'll want to cultivate an environment that encourages the constant pursuit of knowledge.

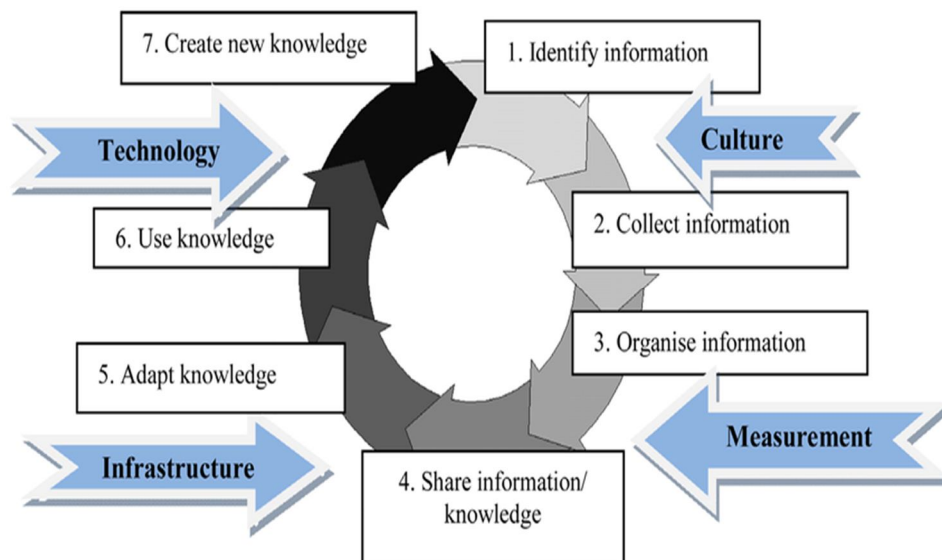


Fig. 1.1 Steps for Transforming Knowledge

AI has a significant impact on skill enrichment in various ways:

1. Enhanced Personalization: AI algorithms can analyze individual learning styles, preferences, and pace to create tailored learning experiences. AI algorithms analyze learning behavior, preferences, and goals. Tailored learning experiences, adaptive difficulty, and customized content. AI-powered adaptive learning systems tailor education to individual needs, enhancing skill acquisition and knowledge retention.

2. Intelligent Knowledge Retrieval: AI-powered search engines and knowledge management systems quickly retrieve relevant information, reducing knowledge transfer time. AI-powered search engines and knowledge management systems. Quick retrieval of relevant information, reducing knowledge transfer time. AI-based virtual mentors provide one-on-one guidance, feedback, and support, enriching the learning experience.

3. Automated Expertise Capture: AI-assisted tools extract and codify expert knowledge, preserving valuable insights and experiences. AI-assisted tools extract and codify expert knowledge. Preserving valuable insights and experiences, reducing knowledge loss. AI-assisted assessment tools free instructors to focus on teaching, enabling more effective knowledge transfer.

4. Adaptive Skill Assessment: AI-driven assessments continuously evaluate skill levels, identifying areas for improvement and enrichment. AI-driven assessments continuously evaluate skill levels. Identifying areas for improvement and enrichment, ensuring skill relevance. AI-driven NLP enhances language understanding, facilitating more effective communication and knowledge sharing.

5. Social Learning Platforms: AI-facilitated platforms enhance collaborative learning, connecting learners with peers and experts. AI-facilitated platforms enhance collaborative learning. Connecting learners with peers and experts, promoting knowledge sharing. AI-powered immersive experiences revolutionize skill training and knowledge transfer in fields like medicine, aviation, and engineering.

6. AI-driven Content Generation: AI tools create customized learning materials, such as videos, simulations, and interactive modules. Customized learning materials, such as videos, simulations, and interactive modules. Reducing content creation time and costs, increasing engagement. AI-assisted tools streamline content development, dissemination, and updates, ensuring relevant and up-to-date knowledge transfer.

7. Virtual Coaching and Mentoring: AI-powered chatbots and virtual assistants offer personalized guidance and support. AI-powered chatbots and virtual assistants offer personalized guidance.

Supporting learners in achieving their goals and overcoming challenges. AI-driven robots enhance human-robot collaboration, transferring skills and knowledge in industries like manufacturing and logistics.

8. Natural Language Processing for Knowledge Transfer: AI-driven NLP enables efficient knowledge sharing through automated translation, summarization, and question-answering. Automated translation, summarization, and question-answering. Enabling efficient knowledge sharing across languages and domains. AI-powered predictive models identify skill gaps and knowledge needs, enabling targeted interventions and enriching professional development.

9. Predictive Modeling for Skill Gaps: AI algorithms identify potential skill gaps and recommend targeted training and development programs. AI algorithms identify potential skill gaps and recommend training. Ensuring learners stay up-to-date with evolving skill requirements. AI-facilitated mentorship programs connect experts and learners, fostering knowledge transfer and skill enrichment.

10. Continuous Learning and Improvement: AI-supported systems encourage a culture of lifelong learning, ensuring individuals stay updated with evolving skills and knowledge requirements. AI-supported systems encourage a culture of lifelong learning. Ensuring individuals stay current with evolving skills and knowledge requirements. AI-supported systems promote lifelong learning, enabling individuals to stay updated with evolving skills and knowledge requirements.

AI has a significant impact on knowledge transfer in various ways:

1. Automated knowledge capture: AI can extract and codify knowledge from experts, reducing the risk of knowledge loss. AI can extract knowledge from various sources, such as documents, videos, and expert interviews. AI-powered tools can analyze and structure knowledge, making it easily accessible.

2. Personalized learning: AI-powered systems tailor knowledge transfer to individual needs, enhancing learning effectiveness. AI-powered systems can tailor knowledge transfer to individual learning styles, preferences, and goals. AI-driven adaptive learning systems adjust the difficulty level and content based on learner performance.

3. Intelligent knowledge retrieval: AI-driven search engines and knowledge management systems quickly retrieve relevant information. AI-driven search engines and knowledge management systems use natural language processing and machine learning algorithms to retrieve relevant information. AI-powered chatbots and virtual assistants provide quick answers to user queries.

4. Natural Language Processing: AI-powered NLP enables efficient knowledge sharing through automated translation, summarization, and question-answering. AI-powered NLP enables automated translation, summarization, and question-answering. NLP facilitates knowledge sharing across languages and domains.

5. Virtual mentorship: AI-facilitated platforms connect learners with experts, promoting knowledge transfer and skill development. AI-facilitated platforms connect learners with experts and peers. AI-powered chatbots and virtual assistants offer personalized guidance and support.

6. Adaptive knowledge updates: AI-supported systems ensure knowledge stays current, automatically updating and synchronizing information. AI-supported systems ensure knowledge stays current and up-to-date. AI-driven tools automatically update and synchronize information.

7. Enhanced collaboration: AI-driven tools facilitate knowledge sharing across disciplines, industries, and languages. AI-driven tools facilitate knowledge sharing across disciplines, industries, and languages. AI-powered platforms enable collaborative learning and problem-solving.

8. Improved accessibility: AI-powered systems enable knowledge transfer for diverse learners, including those with disabilities. AI-powered systems enable knowledge transfer for diverse learners,

including those with disabilities. AI-driven tools provide personalized learning experiences for learners with different needs.

9. Scalable knowledge transfer: AI supports large-scale knowledge transfer, enabling organizations to train multiple learners efficiently. AI supports large-scale knowledge transfer, enabling organizations to train multiple learner's efficiently. AI-driven platforms facilitate knowledge transfer across different locations and time zones.

10. Data-driven insights: AI analytics provide valuable insights into knowledge transfer effectiveness, identifying areas for improvement. AI analytics provide valuable insights into knowledge transfer effectiveness. AI-driven tools identify areas for improvement and optimize knowledge transfer processes.

Conclusion -

In conclusion, the intersection of AI with skill enrichment and knowledge transfer represents a significant evolution in how we learn and grow professionally. By harnessing the power of AI, we can not only enhance individual capabilities but also drive innovation and collaboration across diverse fields. As we navigate this exciting landscape, it is imperative to embrace the transformative potential of AI while remaining mindful of its implications for society as a whole.

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नवीन शैक्षणिक धोरण-2020 व राष्ट्रीय शैक्षणिक तंत्रज्ञान मंच NETF

कल्पना देविदास फड

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प्रस्तावना:

राष्ट्रीय शैक्षणिक धोरण जाहीर झाल्यामुळे भारतीय शैक्षणिक विकासाच्या इतिहासात एक नवा आयाम प्रस्थापित करण्याचा प्रयत्न सुरू आहे. संपूर्ण देशातील शिक्षणामध्ये असलेल्या विसंगतींमध्ये एकसमानता यावी आणि ही एकसमानता शिक्षणात क्रांती घडवून आणण्यासाठी उपयुक्त ठरेल यासाठी भारत सरकार एक नवीन शिक्षण प्रणाली सुरू करण्याचा प्रयत्न करत आहे. अभ्यासक्रमातील बदल, शिक्षणातील व्यावसायिकीकरण, औद्योगिक आणि तांत्रिक शिक्षणाची व्यवस्था, मुक्त विद्यापीठांद्वारे शिक्षण, दूरस्थ शिक्षण, निरक्षरांसाठी सतत शिक्षणाच्या खुल्या संधी, इंटरनेट, दूरदर्शन आणि दूरसंचार आणि व्हिडिओ असा साधनांद्वारे दुर्गम भागातील लोकांना शिक्षण देण्यासाठी कार्यक्रम शिक्षणाचे आव्हान कमी करण्याचा प्रयत्न यामध्ये करण्यात आला आहे.

या नवीन शिक्षण व्यवस्थेत प्रत्येकाला शिक्षणाची समान संधी देण्याची व्यवस्था आहे जेणेकरून त्याने आपल्या आवडीचे शिक्षण घ्यावे आणि त्याचे पालन करून आपले जीवन विकसित करावे. या सर्वसमावेशक कार्यक्रमात, प्राथमिक शिक्षणापासून ते उच्च शिक्षणापर्यंत आणि निरंतर शिक्षणापर्यंत, त्या सर्व शैक्षणिक सुविधांची व्यवस्था करण्यात आली आहे, ज्यात ब्लॉक बोर्ड ऑपरेशनपासून ते घरोघरी टीव्ही, संगणक, इंटरनेट, यूट्यूब, सोशल मिडिया, आणि इतर अभ्यास साहित्य पोहोचवण्यापर्यंतचा समावेश आहे. पुस्तके व नियतकालिके यांच्या अभ्यासाची थेट सोय किंवा वाचनालय व ग्रंथालय यांचा थेट संबंध, नवीन शिक्षणपद्धती विद्यार्थ्यांकडे ठेवल्याचे जाणवते.

संशोधनाची उद्दिष्टे -

प्रस्तुत संशोधनासाठी पुढील उद्दिष्टे ठरविण्यात आले आहे.

- s नवीन शैक्षणिक धोरणाचा अभ्यास करणे.
- s नवीन शैक्षणिक धोरणातील तंत्रज्ञानाचा वापराबाबतचा अभ्यास करणे.
- s नवीन शैक्षणिक धोरणातील राष्ट्रीय शैक्षणिक तंत्रज्ञान मंच चा अभ्यास करणे.

संशोधनाची गृहितके

- s नवीन शैक्षणिक धोरणामध्ये तंत्रज्ञानाची भूमिका महत्त्वाची ठरते.

संशोधन पद्धती

प्रस्तुत संशोधन पद्धतीत वर्णनात्मक व विश्लेषणात्मक पद्धतीचा अवलंब करण्यात आले आहे.

तथ्य संकलन पद्धती

प्रस्तुत संशोधन कार्यासाठी तथ्य संकलन करताना प्राथमिक स्वरूपातील निरीक्षण पद्धतीचा व द्वितीय स्वरूपामध्ये ग्रंथ, लेख, इंटरनेटवरील माहिती याचा आधार घेण्यात आलेला आहे.

शिक्षणात समान संधी, समान अभ्यासक्रम आणि गुणात्मक बुद्धिमत्ता हे नवीन शैक्षणिक धोरणाचे मुख्य उद्दिष्ट आहे. शैक्षणिक प्रक्रिया आणि निष्पत्ती यामध्ये सुधारणा करण्यामागे तंत्रज्ञानाचा मोठा हात आहे. अशाप्रकारे, तंत्रज्ञान आणि शिक्षणामधील संबंध सर्व स्तरांवर दोन्ही बाजूंनी कायम करित असतात. शिक्षणाच्या विविध पैलूंमध्ये सुधारणा करण्यासाठी, तंत्रज्ञानाच्या वापराला आणि एकात्मिकरणाला पाठिंबा देऊन त्याचा अवलंब केला जाईल. तंत्रज्ञानाचा वापर करून शाळा आणि उच्च शिक्षण या दोन्हीतील अध्ययन, मूल्यांकन, नियोजन आणि प्रशासन इत्यादींची गुणवत्ता वाढवण्याच्या दृष्टीने, मुक्तपणे विचारांची देवाणघेवाण करण्यासाठी एक व्यासपीठ उपलब्ध असावे, या विचाराने राष्ट्रीय शैक्षणिक तंत्रज्ञान मंच (नॅशनल एज्युकेशन टेक्नॉलॉजिकल फोरम छम्ज्थ) या स्वायत्त संस्थेची स्थापना केली जाईल.

राष्ट्रीय शैक्षणिक तंत्रज्ञान मंच NETF चे कार्ये:

या स्वायत्त संस्थेच्या माध्यमातून नवीन शैक्षणिक धोरणांमध्ये तंत्रज्ञानाचा जो वापर करण्यात येणार आहे यामध्ये तंत्रज्ञानाची काय भूमिका असेल याबाबत कार्य छम्ज्थ द्वारे पुढील काही सल्लात्मक कार्य करवी लागातात ज्यामुळे नवीन शैक्षणिक धोरण हे कार्यक्षमपणे राबविले जावू शकते. यामध्ये प्रामुख्याने -

- केंद्र आणि राज्य सरकारच्या शालेय संस्थांना तंत्रज्ञानावर आधारित हस्तक्षेपाबद्दल साधनांबद्दल पुराव्यांसह स्वतंत्र सल्ला प्रदान करणे.
- शैक्षणिक तंत्रज्ञानामध्ये बौद्धिक आणि संस्थात्मक क्षमता विकसित करण्यासाठी साधनांची माहिती व पुरवठा करणे.
- शिक्षण क्षेत्रातील धोरणात्मक भर देणे तसेच संशोधन आणि नावीन्यपूर्ण उपक्रमांसाठी नवीन दिशा स्पष्ट करणे. हे कार्य असल्यामुळे त्यासाठी लागणा-या तंत्रज्ञानांचा विकास करणे त्यासंबंधी सल्ला देणे.
- राष्ट्रीय आणि आंतरराष्ट्रीय शैक्षणिक तंत्रज्ञान संशोधक, उद्योजक आणि व्यावसायिकांकडून सूचना मिळवण्यासाठी, छम्ज्थ अनेक प्रादेशिक आणि राष्ट्रीय परिषदा, कार्यशाळा इत्यादींचे आयोजन करण्याचे कार्य करून तंत्रज्ञानाच्या वापराचा भर प्रामुख्याने अध्यापन-अध्ययन आणि मूल्यांकन प्रक्रिया सुधारणे, शिक्षकांच्या तयारीस आणि व्यावसायिकांच्या विकासास साहाय्य करणे, शिक्षणाची उपलब्धता वाढवणे आणि प्रवेश, उपस्थिती, मूल्यांकन इत्यादींशी संबंधित प्रक्रियांसह शैक्षणिक नियोजन, व्यवस्थापन व प्रशासन सुलभ करणे यांवर असल्यामुळे त्यांच्यासाठी लागणारे तंत्रज्ञान, नवनवीन कार्यपद्धती याचा विकास करण्याचा प्रयत्न करणे. त्याचबरोबर वरील सर्व उद्देशांसाठी अनेक प्रकारची शैक्षणिक सॉफ्टवेअर्स विकसित केली जातील आणि सर्व स्तरांवरील विद्यार्थी आणि शिक्षकांसाठी उपलब्ध करून दिली जातील. ई-मजकुराचे अध्यापन अध्ययन सर्व प्रादेशिक भाषांमध्ये विकसित करणे सुरु ठेवतील आणि ते DIKSHA प्लॅटफॉर्मवर अपलोड केले जाईल. शाळांमध्ये शिक्षकांना योग्य उपकरणे उपलब्ध करून दिली जातील. जेणेकरून शिक्षक अध्यापन अध्ययन पद्धतींमध्ये ई-मजकूर योग्यरीत्या समाविष्ट करू शकतील, असा प्रयत्न केला जाईल. शिक्षण व्यवस्थेत अनिवार्यपणे परिवर्तन घडवणार्या उदयोन्मुख क्रांतिकारी तंत्रज्ञानाकडे विशेष लक्ष दिले जाईल.

कृत्रिम बुद्धिमत्ता व 3D / 7D आभासी वास्तविकता (व्हर्चुअल रिवॅलिटी) हे एक निर्विवादपणे क्रांतिकारी तंत्रज्ञान म्हणून उदयास आले आहे. कामाच्या ठिकाणी देखील क्रांतिकारी बदल घडवविण्यासाठी आणि शिक्षणव्यवस्था याला त्वरित प्रतिसाद देण्यासाठी सज्ज असणे आवश्यक आहे. यासाठी माहितीच्या आधारे,

तंत्रज्ञानाचा स्वीकार करण्यास शिक्षण व्यवस्थेकडून प्रतिसाद प्राप्त होण्याची गरज आहे ते मानव संसाधन व्यवस्थापन मंत्रालयाकडून औपचारिकपणे ठरवून घेणे आवश्यक आहे.

संशोधन तंत्रज्ञानात नावीन्यपूर्ण तंत्रज्ञानाला शासनाने मान्यता दिल्याच्या परिणामस्वरूप, राष्ट्रीय संशोधन संस्था (नॅशनल रिसर्च फाउंडेशन) निर्माण करण्याच्या प्रयत्नांना गती किंवा त्यांचा विस्तार करण्याचे कार्य या संदर्भात, राष्ट्रीय संशोधन संस्था त्रिसूत्री दृष्टिकोनाचा विचार करू शकेल यामध्ये (अ) संशोधनाला चालना देणे, (ब) अनुप्रयोग-आधारित संशोधन विकसित करणे आणि (क) आरोग्यसेवा, शेती आणि हवामानबदल यांसारख्या क्षेत्रातील जागतिक आव्हानांचा सामना करण्यासाठी आंतरराष्ट्रीय संशोधन प्रयत्नांना चालना देणे.

नावीन्यपूर्ण तंत्रज्ञानामुळे काही नोकऱ्या निरर्थक ठरतील. म्हणूनच नवे रोजगार तयार करणे आणि टिकवून ठेवण्याच्या दृष्टीने, कौशल्ये निर्माण करण्याच्या आणि अनावश्यक, निरपयोगी कौशल्ये कमी करायच्या (स्किलिंग आणि डी-स्किलिंग) पद्धतीचा कार्यक्षम आणि गुणवत्तापूर्ण उपयोग करणे अधिक महत्त्वाचे ठरते. कौशल्ये आणि उच्च शिक्षण आराखड्याबरोबर या प्रशिक्षणांचे एकात्मिकरण करण्यात येईल. आणि मशीन लर्निंगसारख्या मूलभूत क्षेत्रांमध्ये, तसेच बहुशाखीय क्षेत्र, सेवा, कृषी आणि कायदा यांसारख्या व्यावसायिक क्षेत्रांमध्ये पीएच.डी. आणि मास्टर्स कार्यक्रम उपलब्ध करून देण्याचे उद्दिष्ट विद्यापीठांसमोर असेल.

शाळांमध्ये चालू घडामोडी आणि नैतिकतेच्या समस्यांचा अभ्यास करताना नावीन्यपूर्ण तंत्रज्ञानावरील चर्चेचा त्यामध्ये समावेश करण्यात येतआहेत उदा. NETF / MHRD ने निश्चित केलेले नवीन तंत्रज्ञान, निरंतर शिक्षणासाठी योग्य सूचनात्मक आणि चर्चात्मक साहित्य तयार केले जाईल. आधारित तंत्रज्ञानासाठी डेटा हे प्रमुख इंधन आहे आणि डेटा हाताळणे (हॅन्डलिंग), डेटा संरक्षण (प्रोटेक्शन) इत्यादींशी संबंधित गोपनीयता, कायदे यांच्याशी जोडलेल्या समस्यांविषयी जागरूकता निर्माण करणे अतिशय महत्त्वाचे आहे. या जागरूकता निर्माण करण्याच्या प्रयत्नांमध्ये शिक्षणव्यवस्था ही एक मोठी भूमिका बजावेल यामध्ये शंका नाही. त्यामुळे नवीन शैक्षणिक धोरणांमध्ये तंत्रज्ञानाचा वापर करून ऑनलाईन आणि डिजिटल शिक्षण तंत्रज्ञानाचा वापर करण्यात येणार आहे. यासाठी

नवीन परिस्थिती आणि वास्तविक जीवन यासाठी नवीन उपक्रमांची गरज असते. सध्या काळात वाढत असलेले साथीचे रोग आणि महामारीची परिस्थिती लक्षात घेता, जेव्हा जेव्हा आणि जिथे कुठे पारंपरिक आणि प्रत्यक्ष शिकवण्याच्या माध्यमांचा वापर शक्य नसेल तेव्हा तेव्हा दर्जेदार शिक्षणाची पर्यायी माध्यमे तयार ठेवणे गरजेचे झाले आहे. या संदर्भात, तंत्रज्ञानामुळे मिळणार्या फायद्यांचा लाभ घेण्याचे महत्त्व राष्ट्रीय शिक्षण धोरण २०२० ने मान्य करत, तंत्रज्ञानाशी संबंधित जोखीम आणि धोक्यांचीसुद्धा दखल घेतली आहे.

तथापि, जोपर्यंत डिजिटल भारत मोहीम आणि परवडणार्या कॉम्प्युटिंग उपकरणांची उपलब्धता यांसारख्या एकत्रित प्रयत्नांमधून डिजिटल दरी भरून काढली जात नाही, तोपर्यंत ऑनलाईन/डिजिटल शिक्षणाच्या फायद्यांचा लाभ घेणे शक्य नाही. ऑनलाईन आणि डिजिटल शिक्षणासाठी तंत्रज्ञानाचा वापर करत असताना समानतेविषयक शंका धर्मसमस्यांची योग्य दखल घेतली जाणे महत्त्वाचे आहे. त्याचबरोबर अध्यापनातील आवश्यक बदलांव्यतिरिक्त, ऑनलाईन मूल्यांकनासाठीदेखील वेगळ्या दृष्टिकोनाची गरज आहे. ऑनलाईन शिक्षणाचा अनुभवात्मक आणि उपक्रम-आधारित शिक्षणाशी मेळ घातला जात नाही तोपर्यंत, ते केवळ स्क्रीन-आधारित शिक्षण बनण्याची शक्यता आहे,

जागतिक दर्जाच्या डिजिटल पायाभूत सुविधा, शैक्षणिक डिजिटल सामग्री आणि क्षमता निर्माण करण्यासाठी एक समर्पित युनिट तयार करणे शिक्षणात तंत्रज्ञानाचा वापर हे केवळ साध्य नाही तर एक प्रवास आहे आणि या धोरणातील उद्दिष्टांची अंमलबजावणी करण्यासाठी विविध परिसंस्था एकत्र येण्याची क्षमता आवश्यक आहे. डिजिटल पायाभूत सुविधा, शैक्षणिक डिजिटल सामग्री आणि क्षमता निर्माण करण्यासाठी, समन्वय साधण्यासाठी शालेय आणि उच्च शिक्षण, दोन्हीच्या ई-शिक्षणाच्या गरजा भागवण्यासाठी मंत्रालयात एक समर्पित युनिट तयार केले जाईल. या केंद्रात प्रशासन, शिक्षण, शैक्षणिक तंत्रज्ञान, डिजिटल अध्यापनशास्त्र आणि मूल्यांकन, ई-शासन अशा सर्व क्षेत्रांतील तज्ज्ञ समाविष्ट करून एक दर्जेदार तंत्रज्ञानाचा वापर करून एक प्रभावी शिक्षणप्रणाली निर्माण होत असल्याचे चित्र दिसून येते आहे. याचा केवळ प्रभावीपणे अंमलबजावणी करणे आवश्यक आहे यासाठी लागणारे आर्थिक पाठबळ देवून पूर्ण करणे आवश्यक आहे.

संदर्भ ग्रंथ

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- इंटरनेट

माहिती तंत्रज्ञानाचे उच्च शिक्षणातील महत्त्व

सय्यद कुरेशाबी नजीरसाब
लोकप्रशासन विभाग प्रमुख
आझाद महाविद्यालय औसा.

प्रस्तावना:- आधुनिक युग हे माहिती तंत्रज्ञानाचे युग म्हणून ओळखले जाते. माहिती तंत्रज्ञानामुळे समाजात फार मोठे बदल झालेले आहेत. एकविसाव्या शतकात संगणक तंत्रज्ञान ही संकल्पना मागे पडून आता त्या जागी माहिती तंत्रज्ञान या शब्दाचा वापर होत असताना दिसून येतो. इंटरनेट सारख्या साधनाच्या वापरामुळे सर्व जग जवळ आले आहे. यातूनच माहिती तंत्रज्ञान विकसित होत आहे. इंटरनेट, ई-मेल, ई-कॉमर्स यांचा वापर मोठ्या प्रमाणात करण्यात येऊ लागला आहे. माहिती तंत्रज्ञानात माहिती निर्मितीची प्रक्रिया, साठवण, प्रस्तुती, सादरीकरण, वितरण आणि प्रबंधन अशा बाबी महत्त्वपूर्ण ठरतात. या सर्व बाबींची डिजिटल टेक्नॉलॉजीच्या विविध साधनांच्या माध्यमातून देवाण-घेवाण करण्यासाठी जे तंत्र वापरण्यात येते ते तंत्र म्हणजे माहिती तंत्रज्ञान होय. माहिती तंत्रज्ञानाच्या स्फोटांमुळे उच्च शिक्षणात देखील व्यापक बदल घडून आले आहेत. इतर क्षेत्रांप्रमाणेच माहिती तंत्रज्ञानाचा प्रभाव शिक्षण क्षेत्रावर ही पडलेला दिसून येतो.

शिक्षणातील तंत्रज्ञान:

तंत्रज्ञानामुळे शिक्षणउद्योग काळानुसार सुधारत आहे. तंत्रज्ञानामुळे, विद्यार्थी आणि पालकांच्या बोट्यांच्या टोकावर शिकण्याची विविध साधने आहेत. शिक्षक जगभरातील वर्गांशी समन्वय साधू शकतात आणि त्यांच्या कल्पना आणि संसाधने ऑनलाइन शेअर करू शकतात. विद्यार्थ्यांना इंटरनेटवर भरपूर चांगल्या माहितीचा तात्काळ प्रवेश मिळू शकतो. शिक्षक आणि विद्यार्थी वेबवर उपलब्ध असलेल्या भरपूर संसाधनांमध्ये प्रवेश करू शकतात आणि त्यांचा त्यांच्या प्रकल्प कार्य, संशोधन इत्यादीसाठी वापर करू शकतात. ऑनलाइन शिक्षणामुळे शिक्षणाबद्दलची आमची धारणा बदलली आहे.

21 व्या शतकातील शिक्षणामध्ये तंत्रज्ञानाचा वाढता वापर

21 व्या शतकातील आव्हाने अशा तंत्रज्ञानाचा विकास आणि वापर या दोन्ही आहेत. कोविड-19 साथीच्या रोगाने हे दाखवून दिले आहे की ऑनलाइन शिक्षण हा शिकवण्याचा आणि शिकण्याचा एक महत्त्वाचा भाग का असावा. शिक्षण हे आता पारंपारिक वर्गातील व्याख्यानापुरते मर्यादित राहिलेले नाही. उदयोन्मुख तंत्रज्ञानामुळे, ज्ञान झपाट्याने उपलब्ध आहे आणि त्वरित सामायिक केले जाते. बहुतांश भागांसाठी, शाळांनी तंत्रज्ञानाचा वापर केवळ संकट व्यवस्थापन साधन म्हणून करण्याऐवजी विद्यमान अभ्यासक्रमात केला आहे. अशा प्रकारे, शिक्षक ऑनलाइन शिक्षणाचा उपयोग एक शक्तिशाली शिक्षण साधन म्हणून करू शकतात.

21 व्या शतकातील शिक्षणात तंत्रज्ञानाचे महत्त्व:-

शिक्षणातील तंत्रज्ञानाचे अनेक मूर्त फायदे आहेत. त्यापैकी काही आहेत:

1. **वाढलेला संवाद आणि सहयोग :** 21 व्या शतकातील वर्गात तंत्रज्ञानामुळे, शिक्षक केवळ धड्यांदरम्यानच विद्यार्थ्यांशी संवाद साधू शकत नाहीत, तर विद्यार्थी एकमेकांशी संवादही साधू शकतात. विद्यार्थी समस्या सोडवण्यासाठी एकत्र काम करू शकतात. शिक्षणातील तंत्रज्ञानामुळे शिक्षकांशी एकमेकांशी संवाद साधता येतो. विद्यार्थी त्यांच्या शिक्षकांना धड्याबद्दल प्रश्न विचारू शकतात आणि त्यांना समजण्यास कठीण वाटत असलेल्या विषयांवर अतिरिक्त मदत घेऊ शकतात.

तंत्रज्ञानामुळे, विद्यार्थी त्यांचा गृहपाठ व्हर्चुअल क्लासरूमवर अपलोड करू शकतात आणि शिक्षक यामध्ये प्रवेश करू शकतात आणि पूर्ण झालेल्या असाइनमेंट्स त्यांच्या संगणकाचा वापर करून पाहू शकतात आणि श्रेणीबद्ध करू शकतात.

2. **शिकण्याच्या संधी :** शिक्षणातील तंत्रज्ञानामुळे, विद्यार्थ्यांना शैक्षणिक संसाधनांमध्ये 24/7 प्रवेश मिळू शकतो. लॅपटॉप किंवा मोबाइल डिव्हाइस वापरून वर्ग पूर्णपणे ऑनलाइन होऊ शकतात. शाळा नियमित वैयक्तिक वर्गातील सत्रांसह कोटूनही तंत्रज्ञानाची जोड देऊन शिकण्याच्या संकरित मॉडेलला प्रोत्साहन देऊ शकतात. तसेच, विद्यार्थी त्यांच्या गतीने शिकू शकतात. त्यांना आवश्यक वाटल्यास ते धड्याच्या योजनांमधील व्हिडिओंचे पुनरावलोकन देखील करू शकतात.

3. **आकर्षक सामग्रीमुळे वाढलेली उत्सुकता:** शिक्षक त्यांच्या विद्यार्थ्यांची उत्सुकता वाढवू शकतात आणि आकर्षक आणि सर्जनशील शैक्षणिक सामग्रीद्वारे त्यांची आवड वाढवू शकतात. संशोधन म्हणते की यामुळे खरे शैक्षणिक यश मिळू शकते. वाढलेल्या कुतूहलामुळे विद्यार्थी संकल्पनांची अधिक चांगली माहिती मिळवू शकतात. वर्गातील सामग्री वितरीत करण्यासाठी शिक्षक आभासी वास्तविकता (VR), ऑगमेंटेड रिलिटी (AR), व्हिडिओ आणि पॉडकास्ट देखील वापरू शकतात. तंत्रज्ञानाचा वापर करून, विद्यार्थी त्यांच्या असाइनमेंट सबमिट करताना व्हिडिओ समाविष्ट करू शकतात आणि जगभरातील विद्यार्थ्यांशी संवाद साधू शकतात.

4. **सुधारित शिक्षक कार्यक्षमता आणि उत्पादकता :** शिक्षक तंत्रज्ञानाचा वापर करून उत्पादकतेचे नवीन स्तर प्राप्त करू शकतात. ते विद्यार्थ्यांसाठी शिकण्याच्या संधींचा विस्तार करण्यासाठी उपयुक्त डिजिटल साधनांचा वापर आणि अंमलबजावणी देखील करू शकतात. योग्य तंत्रज्ञान शिक्षकांना त्यांच्या शिक्षण पद्धती सुधारण्यास आणि वैयक्तिक शिक्षण प्रदान करण्यास सक्षम करते. भौतिक शिक्षण सामग्रीची किंमत कमी करून, शैक्षणिक कार्यक्रमाची कार्यक्षमता वाढवून आणि शिक्षकांच्या वेळेचा सर्वोत्तम वापर करून हे करू शकतात.

5. वर्गात बदललेला अनुभव :

6. **वैयक्तिक सूचना देण्याची क्षमता :** प्रत्येक वर्गात नेहमी भिन्न शिकण्याची क्षमता असलेले वेगवेगळे विद्यार्थी असतात. निर्देशात्मक तंत्रज्ञानाच्या वापराद्वारे, भिन्न सूचना वितरीत करणे सोपे आहे. विभेदित सूचनांसह, विद्यार्थ्यांना वैयक्तिकृत असे शिक्षण दिले जाते. तंत्रज्ञानाच्या वापरामुळे विद्यार्थ्यांना वर्गाबाहेरील समृद्ध शिक्षण सामग्री देखील उपलब्ध होते.

7. **भविष्यातील शैक्षणिक आणि व्यावसायिक अनुभवांची तयारी :** विद्यार्थ्यांनी त्यांच्या भविष्यातील शैक्षणिक आणि व्यावसायिक अनुभवांसाठी त्यांना तयार करण्यासाठी साधने आणि योग्य तंत्रज्ञानाचा वापर करणे अत्यंत महत्त्वाचे आहे. या साधनांमध्ये जुने तंत्रज्ञान आणि नवीन तंत्रज्ञान यांचे मिश्रण समाविष्ट आहे, जे विद्यार्थ्यांना आज उपलब्ध असलेल्या विविध ऑनलाइन साधनांमध्ये नेव्हिगेट करण्यात मदत करण्यासाठी कौशल्यांचा संच प्रदान करतात. हे शिक्षकांना विद्यार्थ्यांना डिजिटल नागरिकत्व आणि शैक्षणिक अखंडतेसाठी नवीन आव्हाने शिकवण्याच्या संधी देखील प्रदान करते.

8. विद्यार्थ्यांना जागतिक नागरिक बनण्यास सक्षम करणे :

21 व्या शतकातील शिक्षणातील तंत्रज्ञान, वर्ग शिक्षक आणि विद्यार्थ्यांना नवीन, ऑनलाइन जागतिक समुदायांसमोर आणते. हे पाठ्यपुस्तकांच्या पलीकडे आणि वर्गाच्या भिंतींच्या पलीकडे शिकण्याचा विस्तार करते. तंत्रज्ञानाचा वापर डिजिटल साक्षरता कौशल्यांचा समावेश आणि विकासास प्रोत्साहन देतो. शिवाय, ते जागतिक जागरूकता वाढवते, जे 21 व्या शतकातील शिक्षणाचा एक आवश्यक घटक आहे.

सारांश:- गेल्या काही वर्षांत, तंत्रज्ञान जगभरातील लोकांच्या जीवनाचा एक अपरिहार्य भाग बनले आहे आणि आज त्याशिवाय जीवनाची कल्पना करणे जवळजवळ अशक्य आहे. हे एक महत्त्वपूर्ण स्थान व्यापण्यात यशस्वी झाले आहे. आजच्या शैक्षणिक व्यवस्थेमध्ये ती महत्त्वाची भूमिका बजावते आणि लोकांच्या शिकण्याच्या पद्धती बदलते. याव्यतिरिक्त, सेल फोन, टॅब्लेट आणि लॅपटॉप हे विद्यार्थी जीवनाचे एक महत्त्वाचे पैलू बनले आहेत. तंत्रज्ञानामध्ये नातेसंबंध वाढवण्याची क्षमता आहे.²¹ व्या शतकाच्या सुरुवातीस, तंत्रज्ञान हा शिकण्याच्या प्रक्रियेचा एक महत्त्वाचा भाग बनला आहे आणि त्याचा परिणाम शिक्षक आणि विद्यार्थी या दोघांवरही झाला आहे. यामुळे शिक्षणाचा प्रसार करण्याची पद्धत आणि शिकणाऱ्यांची त्यांच्या शिकण्याच्या प्रक्रियेतून जाण्याची पद्धत बदलली आहे. तंत्रज्ञानाच्या वापरामुळे विद्यार्थ्यांना शैक्षणिक संसाधने उपलब्ध झाली आहेत. याव्यतिरिक्त, विद्यार्थी आणि शिक्षकांना इंटरनेटवरील संसाधनांमध्ये प्रवेश आहे ज्याचा वापर ते वैयक्तिक किंवा शैक्षणिक विकासासाठी करू शकतात. यामुळे शिकवण्याची आणि शिकण्याची प्रक्रिया सुलभ आणि आनंददायी बनली आहे. शिकणे परस्परसंवादी बनले आहे आणि संसाधने शिक्षक आणि विद्यार्थ्यांमध्ये सामायिक करणे सोपे आणि व्यवस्थापित करण्यायोग्य बनले आहे. शिवाय, तंत्रज्ञानाच्या वापरामुळे शिकण्याची प्रक्रिया सुलभ आणि आटोपशीर झाली आहे. इंटरनेटने संशोधन हे शिकणाऱ्यांना उपलब्ध करून दिले आहे. विद्यार्थ्यांना लायब्ररीमध्ये प्रवेश असतो जेथे ते ई-पुस्तके, जर्नल्स आणि लेख शोधू शकतात. शिक्षक देखील त्यांच्या वर्गातील वापरासाठी विविध साहित्यात प्रवेश करू शकतात आणि शोधू शकतात. तंत्रज्ञानामुळे शिक्षकांना अध्यापनाची साधने आणि विद्यार्थ्यांना शिकण्याची साधने शोधणे या दोघांनाही सोपे झाले आहे. ऑनलाइन शिक्षण संसाधने आणि websites मध्ये भिन्न आणि सर्वसमावेशक माहिती आहे जी शिकण्याची आणि शिकवण्याची प्रक्रिया सुलभ करते. याने ज्ञानाचा आधार देखील वाढवला आहे जिथे विद्यार्थ्यांना जगभरातील त्यांच्या विविध क्षेत्रातील घडामोडींच्या माहितीच्या विविध भागांमध्ये प्रवेश आहे. त्यामुळे एकविसाव्या शतकाच्या पूर्वार्धात तंत्रज्ञानाने शिक्षण क्षेत्रा मध्ये लक्षवेधी वाढ केली आहे, असा निष्कर्ष काढला जाऊ शकतो.

संदर्भसूची

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ग्रंथालयीन ज्ञानसंग्रहाचे व्यवस्थापन

प्रा. डॉ. नामदेव कि राठोड

ग्रंथपाल तथा विभाग प्रमुख

संभाजीराव केंद्रे महाविद्यालय जळकोट ता. जळकोट जि. लातूर

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प्रस्तावना

प्राचीन कालखंडात ज्ञानाचे संग्रह म्हणून ग्रंथालय कडे पाहिले जात होते. मात्र या काळात केवळ ज्ञानाचा संग्रह करणे आणि जतन करणे एवढ्या पुरताच मर्यादित स्वरूपांचे ग्रंथालय अस्तित्वात असल्यामुळे ज्ञानसंग्रह करून ठेवणे खूप जिकरीचे होते. पूर्वीच्या काळी मुद्रण कलेचा शोध लागला नव्हता. ग्रंथालयाची कल्पनाही केवळ कपाटात ग्रंथ संग्रह करून ठेवणे, दुसऱ्या दिसेल असा ज्ञान संग्रह संग्रहित केला जात होता. यामध्ये हस्तलिखिते, मुख्यत्वात, ताम्रपत्र चर्मपत्र, शिलालेख, मातीच्या विटा, यावर ज्ञान जतन करून ठेवले जात होते. ज्ञानाला आजही जगात अनन्यसाधारण महत्त्व आहे. ज्ञानाच्या जोरावर मानव आपली प्रगती करून घेत आहे. ज्ञानाच्या आधुनिक काळात बदलाने या युगात तंत्रज्ञानाचे अनेक साधने निर्माण झाली आहे. आज प्रत्येक क्षेत्रात तंत्रज्ञानाचा फार मोठ्या प्रमाणात वापर कोणत्याही ठिकाणी माहिती मिळवता येणे आज शक्य झाले आहे. आज अनेक ग्रंथालय ज्ञान व्यवस्थापनासाठी विविध माहिती तंत्रज्ञानाचा वापर करून जगामध्ये विविध स्वरूपाची निर्मिती होणारी ज्ञानाची साहित्य संग्रहित करून ठेवण्यासाठी आज वेगवेगळ्या माहिती तंत्रांचा वापर करून त्यांची साठवणूक केली जात आहे. आज प्रत्येक संस्थेचा ज्ञान व्यवस्थापन हा अविभाज्य घटक बनला आहे. त्यांचे महत्त्व सर्वांना समजून चुकले आहे. त्यांच्याबरोबरच ज्ञान व्यवस्थापनाला नवीन तंत्रज्ञानाची जोड मिळाल्याने अतिशय कुशल प्रकारे ज्ञानाचे व्यवस्थापन करण्याची प्रक्रिया आज जगात सर्वत्र निर्माण झाली आहे. मुद्रण कलेच्या शोधापूर्वी ज्ञान जोपासणे साठवणे अत्यंत अवघड स्वरूपाचे मानले जात होते. परिणामी ज्ञानाचे हस्तांतरित कमी प्रमाणात व मर्यादित लोकापुरतेच मर्यादित होते पण आज युग हे ज्ञानधिष्ठित युग आहे.

आजचे युगे माहितीचे उपाय त्यांनाच्या मोठ्या प्रमाणावर विस्फोट झाल्याने सर्वत्र ज्ञान माहितीचा साठा मोठ्या प्रमाणात होत आहे परिणामी रोज एक नवीन ज्ञान शास्त्र तयार होत आहे म्हणजे ज्ञानाचा भंडार मोठ्या प्रमाणात सर्वत्र पसरला आहे. एवढ्या मोठ्या ज्ञानाच्या भंडारातून आपल्याला आवश्यक ते योग्य प्रकारचे ज्ञान निवडून ते प्राप्त करणे एक कला आहे आणि हे योग्य प्रकारच्या ज्ञान व्यवस्थापनाने शक्य झाले आहे. प्रत्येक संस्था योग्य प्रकारे चालविण्यासाठी ज्ञान व्यवस्थापन करणे आवश्यक आहे. मानवी कल्याणाचे विश्व म्हणजे ज्ञान असे डॉ. एस आर. रंगनाथन यांनी म्हटले आहे. मानवाला येणाऱ्या अनुभवावरून मानव विविध निष्कर्ष काढतो ते कोणाला तरी सांगतो किंवा लिहून ठेवतो, त्यातून माहिती निर्मिती होत असते. माहितीचे एकत्रीकरण केल्यास ज्ञान प्राप्त होते. योग्य व्यक्तीकडून योग्य प्रकारचे कार्य करून घेऊन उत्पादकता वाढविणे म्हणजेच ज्ञानाचे संग्रह करणे, संग्रहित केलेले माहिती जतन करणे, जतन केली माहितीच्या योग्य व्यवस्थापन करणे, आणि येणाऱ्या पिढीला सदरील माहिती तथा ज्ञान प्रसारित करणे, सुपूर्तकरणे होय.

शोध संज्ञा

ज्ञान, व्यवस्थापन, संग्रह संवर्धन, माहिती तंत्रज्ञान, संदर्भ साधने मुद्रण, ध्वनीमुद्रण, स्लाईड प्रोजेक्टर, नेटवर्क, इंटरनेट, ईट्रानेट, रिसोर्स सेअरिंग, मॅनेजमेंट.

ज्ञान व्यवस्थापन म्हणजे काय

ज्ञान व्यवस्थापन ही एक सांघिक प्रणाली आहे. ज्ञान प्राप्त करणे संघटित करणे आणि योग्य प्रकारे वितरित करण्यासाठीची प्रक्रिया म्हणजे ज्ञान व्यवस्थापन होय . संस्थेतील प्रत्येकाचे ज्ञान संस्थापक पातळीवर आणून ज्ञानाचा योग्य प्रकारे करून यांचा उपयोग हा संपूर्ण संस्थेसाठी करून घेऊन संस्थेची उत्पादकता उत्तम प्रकारे वाढविणे हे ज्ञान व्यवस्थापनामुळे शक्य होत असते.

थोडक्यात ज्ञान व्यवस्थापन म्हणजे व्यक्त तसेच अव्यक्त ज्ञान ओळखून ज्ञानाची निर्मिती करणे, ज्ञानाची साठवून योग्य करणे सदील ज्ञान योग्य प्रकारे वापरणे, त्याच प्रमाणे हस्तांतरण करणे होय . ज्ञान व्यवस्थापनामुळे दैनंदिन व्यवहारात ज्ञान आणि माहितीचा योग्य उपयोग करता येतो.

व्याख्या

निक विलाई :- च्या मते

" ज्ञान व्यवस्थापन म्हणजे सहकार्य मैत्रीचा मार्ग सुखकर करणे व लोकांचा परस्पर संबंध ओळखणे होय "

बकलॅंड :-

" ज्ञान हे माहिती विज्ञान आहे . तो आमच्या व्यक्तिगत जाणिवेचा उल्लेख करतो . ती आमच्या मेंदूमध्ये अस्तित्वात असते . ते म्हणजे ज्ञान होय "

न्यूमन :-

ज्ञानाचे व्यवस्थापन म्हणजे अनेक प्रक्रियेचा समूह आहे . जो उत्पत्ती ज्ञानाचा वापर न त्यांचा उलगडा यावर नियंत्रण ठेवते.

ग्रंथालय ज्ञान व्यवस्थापनाची आवश्यकता :-

ग्रंथालयला ज्ञानाचे भांडार म्हणून संबोधले जाते . त्यामुळे ज्ञान व्यवस्थापनाची गरज ग्रंथालयात जास्त प्रमाणात भासते . नाविन्यपूर्ण सुविधा ज्ञान संग्रह करून वाढविणे , हे ग्रंथालयातील ज्ञान व्यवस्थापनाची उद्दिष्टे आहेत . यांचा संदर्भ ज्ञानाचे उत्पादन संकलन संग्रहण व प्रसारण हे ज्ञान व्यवस्थापनाचे भाग आहेत . संकलन म्हणजे वाचकांना उपयुक्त असे ज्ञान साहित्य गोळा करणे , संग्रह करणे , म्हणजे असे ज्ञान साहित्य सुसंगतपणे वापरासाठी तयार ठेवणे व प्रसारण म्हणजे, वाचकास योग्य ज्ञान साहित्य अचूकपणे व तत्परतेने उपलब्ध करून देणे होय . ग्रंथालय ज्ञान व्यवस्थापनात नवीन धोरणाचा आणि उपक्रमाचा अवलंब अधिकाधिक गुणात्मक सेवा व उपयोग करताना घ्याव्यास हवी . ज्यामुळे उपभोगत्यांचा त्या संस्थेवर तसेच कर्मचारी वर्गावर एक विश्वास वाढेल . म्हणून ज्ञान व्यवस्थापन करणे ही काळाची गरज असून , येणाऱ्या भावी पिढीला वास्तव ज्ञानाचे दर्शन या माध्यमातून करता येईल .

ग्रंथालय ज्ञान व्यवस्थापनाचा उद्देश

संस्थेचे उद्देश पूर्ण करण्यासाठी ज्ञान व्यवस्थापन करणे आवश्यक असते . ज्ञान व्यवस्थापन हे सांघिक प्रकारची प्रणाली आहे . ही प्रणाली खालील घटकावर आधारित आहे .

- 1) ज्ञानाचा प्रलय तयार करणे . 2) ज्ञानाची साधने वाढविणे .
- 3) ज्ञान वातावरण निर्मिती करणे .
- 4) ज्ञानाला योग्य प्रकारे साठवणे .
- 5) ज्ञानाचे योग्य प्रकारे . हस्तांतरित करणे .

ज्ञान व्यवस्थापनाच्या नवीन धोरणांचा किंवा उपक्रमाचा अवलंब करून अधिकाधिक गुणात्मक सेवा उपभोगत्यांना प्राप्त करून देणे जेणेकरून उपभोगत्यांच्या संस्थेवर विश्वास वाढेल .

ग्रंथालयात ज्ञान व्यवस्थापनात आधुनिक तंत्रज्ञानाची जोड महत्त्वाची

पूर्वी ग्रंथालयाचे स्वरूप हे ग्रंथ सुरक्षित ठेवण्यापुरतेच मर्यादित होते. कारण ग्रंथ निर्मिती कमी प्रमाणात होत होती. परिणामी ग्रंथ हे काही विशिष्ट वर्गापुरतेच वाचण्यासाठी मर्यादित होते. म्हणून ज्ञानाचे व्यवस्थापन करणे तत्कालीन परिस्थितीमध्ये त्या त्या वेळेनुसार जतन करण्यावर मोठ्या प्रमाणात भर दिला जात होता. मात्र आजचे आधुनिक युग हे ज्ञानदीप युग आहे. माहिती तंत्रज्ञानाचे युग आहे. ज्ञानाचे प्रचंड विस्फोटामुळे मोठ्या प्रमाणावर ज्ञानाचे भांडार सर्वत्र पसरले आहे. एवढ्या मोठ्या ज्ञानाच्या भांडारातून आपल्याला आवश्यक ते ज्ञान प्राप्त करून घेणे अत्यंत महत्त्वाचे काम आहे. तंत्रज्ञानाच्या मदतीने योग्य प्रकारे प्रशासन करून ज्ञानाचे व्यवस्थापन करणे अत्यंत महत्त्वाचे असते. ज्ञान आत्मसात करण्याची विविध साधने आज उपलब्ध आहेत. ते जतन ज्ञान आत्मसात करण्यासाठी नवीन व उत्तम प्रकारच्या विविध वस्तू आज जगामध्ये उपलब्ध आहेत. जसे सीडी, सी.डी.रोम, डी.व्ही.डी., पेन ड्राईव्ह, चिप्स, मेल, गुगल ड्राईव्ह, मंदरबोर्ड, सर्व्हर आदी आधुनिक साधने उपलब्ध आहेत.

ग्रंथालयात संगणकाचा वापर आज काळाची गरज झाली असून, संगणकाचा वापर प्रत्येक क्षेत्रात केला जाऊ लागला आहे. संगणकामुळे ग्रंथालयातील दैनंदिन कामे अत्यंत सोप्या पद्धतीने व तत्परतेने पार पडताना दिसून येत आहे. त्याचप्रमाणे ग्रंथालयातील ज्ञान व्यवस्थापनासाठी आज वेगवेगळ्या सॉफ्टवेअरच्या माध्यमातून ज्ञानाचे संवर्धन अत्यंत अचूक आणि वेळेवर केले जात आहे. ज्ञान व्यवस्थापनेचा मुख्य हेतू वाचकास हवे असलेले वाचन साहित्य लवकरात लवकर उपलब्ध करून देणे आहे.

आज विविध सॉफ्टवेअरच्या माध्यमातून ते शक्य झाले आहे. पारंपारिक तालिका साधने अवघड प्रकारचे काम वाटू लागत होते. परिणामी आज संगणकाच्या माध्यमातून सॉफ्टवेअरच्या माध्यमातून वेब व त्यांच्या माध्यमातून आपण घरी बसून सुद्धा वेगवेगळ्या ग्रंथालयांचे माहिती साधनाचा संग्रहाचा शोध घेऊ शकतो.

हे अत्यंत परिणामकारक आणि कमी वेळेत वाचकांना कोणत्या ग्रंथालयात कोणते वाचन साहित्य उपलब्ध आहेत. यांची माहिती तात्काळ भेटू शकते. डॉ. एस. आर. रंगनाथन यांचा सिद्धांत प्रत्येक वाचकास ग्रंथ मिळाला पाहिजे. या सूत्राची पूर्तता आणि ग्रंथालीन कर्मचाऱ्यांरी आणि वाचकांचा वेळ वाचला पाहिजे या सूत्रांचा परिपूर्ती करण्यासाठी ग्रंथालयाचे ज्ञानाचे व्यवस्थापन करणे गरजेचे आहे.

आधुनिक ज्ञान व्यवस्थापन करण्यासाठी लागणाऱ्या बाबी

ग्रंथालय संगणकीकरण करून ज्ञानाचे जतन संवर्धन आणि हस्तांतरण करण्यासाठी आधुनिक माहिती तंत्रज्ञानाचा वापर करून ज्ञानाचे व्यवस्थापन केली जाऊ लागले आहे. यांत प्रामुख्याने ग्रंथालयाचे संगणकीकरण ग्रंथालय सुरक्षेच्या दृष्टिकोनातून आर. एफ. आय. डी. या सुरक्षा तंत्रज्ञानाचा वापर ग्रंथालयीन सॉफ्टवेअरचा वापर इंटरनेट ई-मेल, वेब ओपॅक, ब्लॉग, वेगवेगळ्या स्वरूपाची संग्रहित साधने यांच्या माध्यमातून ग्रंथालयाचे व्यवस्थापन करणे अत्यंत सोपे अचूक परिणामकारक झाले आहे.

ग्रंथालयातील ज्ञान व्यवस्थापनातील उपयुक्त घटक

ज्ञानाचे व्यवस्थापन आणि संवर्धन आणि प्रसारण करत असताना, वाचकांच्या ज्या गरजा आहेत. त्या गरजा ओळखून उपयुक्त असे माहितीचे संग्रह करणे आवश्यक आहे. यांमध्ये ग्रंथ, संदर्भग्रंथ, नियतकालिके, आधुनिक माहिती तंत्रज्ञांची साहित्य मुद्रित, अमुद्रीत माहिती साधने इंटरनेट, मेटा डेटा रिसोर्स सेअरिंग, यांच्या माध्यमातून वाचकांची आवडी निवडी आणि माहिती विषय गरजा पूर्ण करणे सोयीचे ठरत आहे.

वाचकांच्या गरजांचा अभ्यास

वाचकांच्या गरजा लक्षात घेऊन वाचन साहित्याची निवड करण्यात यावी वाचकांचा अभ्यासक्रमानुसार आपल्या ग्रंथालयात किती अभ्यासक्रमानुसार पुस्तक उपलब्ध आहेत. तसेच वाचक वर्गाची संख्या किती आहे. ग्रंथालयात येणाऱ्या वाचकांचा अभ्यास केला जातो का? यालाच वाचक अभ्यास असेही म्हणतात. त्याचप्रमाणे वाचकांच्या सूचनांचे पालन तसेच

विषय तज्ज्ञांनी दिलेल्या वाचन साहित्याची यादी , विषयांच्या अभ्यासक्रमानुसार ग्रंथ निवडणे संशोधकाची माहिती संदर्भ ग्रंथ इत्यादींच्या बाबी विचारात घेतल्या पाहिजे .

उपयुक्त वाचन साहित्य उपलब्धते बाबत जुळवा जुळव करणे .

ग्रंथालयात वाचकांचा अभ्यास विषय निवडी ,आवडी निवडीचा अभ्यास करून , वाचन साहित्य ग्रंथालयात उपलब्ध करून देण्यासाठी ग्रंथालयातील ग्रंथ संग्रह हा केवळ संख्यात्मक असण्यापेक्षा तो गुणात्मकही असायला हवा , विशिष्ट विषयाची वाचन साहित्याची निवड करत असताना , प्रकाशक व ग्रंथ विक्रेत्यांच्या याद्या ललित साहित्य सूची प्रकाशकांची पाठविलेली माहितीपत्रके पाठ्यपुस्तकाचे याद्या प्रसिद्ध ग्रंथालयाचे कॅटलॉग राष्ट्रीय

ग्रंथसूची , जुन्या व दुर्मिळ ग्रंथांच्या विक्रेत्यांच्या याद्या इत्यादी ग्रंथनिवडी साधनाचा अभ्यास करून , दर्जेदार उत्तम आणि वाचकाभिमुख वाचन साहित्यांचा संग्रह या माध्यमातून विकसित केला जातो .

नियतकालिके आणि जर्नल

नियतकालिक विभागास कालिक विभाग असे म्हणतात . ग्रंथांच्या तुलनेत नियतकालिके जास्त अद्यावत माहिती पुरवत असतात . तसेच विशिष्ट विषयाला वाहिलेले काही नियतकालिके तथा जर्नल्स त्या त्या विषयांची अद्यावत माहिती देत असतात . अशी अद्यावत माहिती आपल्या ग्रंथालयात उपलब्ध करून देऊन वाचकांच्या गरजा पूर्ण केल्या जाणे गरजेचे आहे .

अद्यावत संदर्भ साधने

ज्या अनेक साधनांद्वारे ग्रंथपाल वाचकांना ज्ञानाची पाणपोई मनशक्तपणे पिण्याची संधी प्राप्त करून देतो . त्या सेवेस संदर्भ सेवा असे म्हणतात . कोणत्याही विषयावरील आधारभूत अशी प्रारंभिक माहिती संदर्भ साधनांद्वारे पुरविली जाते . विविध अहवाल ज्ञानकोश , शब्दकोश , प्रबंध , वार्षिके , गॅजेट्स , सर्वे अहवाल , इत्यादी संदर्भ साधनांचे ग्रंथालयात संकलन असणे आवश्यक आहे . तरच उत्तमरीत्या वाचकांना योग्य संदर्भ साहित्यातून माहिती त्वरित देण्यास मदत होऊ शकते .

आधुनिक तंत्रज्ञानाची साधने

माहिती संग्रहित करून ती माहिती वाचकांना पुरवण्याचे कार्य ग्रंथालयात प्रचलित पद्धती नुसार पार पाडणे अत्यंत कठीण व अशक्य आहे . स्वतःच्या विषयासंबंधी किती ग्रंथ प्रकाशित झाले आहेत . ग्रंथालयात कोणकोणती माहिती उपलब्ध आहे . तेव्हा ती माहिती मिळवणे हे तर लांबच राहिले , ही समस्या सोडविण्याचे काम ग्रंथालयाने संगणकाच्या साह्याने मदतीने सोडविलेले आहे . ग्रंथालयात उपलब्ध असलेल्या संपूर्ण ग्रंथा बाबतची माहिती संगणकात संग्रहित करता येऊ शकते . छोट्याशा जागेवर माहिती संग्रहित करून ठेवून तंत्रज्ञानाच्या साह्याने वाचकांना कमीत कमी वेळेमध्ये आवश्यक ती माहिती प्रसारित करण्यासाठी या साधनांचा उपयोग मोठ्या प्रमाणात केला जाऊ शकतो .

मुद्रणोत्तर वाचन साहित्य

स्लाईड प्रोजेक्टर , ध्वनिमुद्रिका , सीडी , डिक्स , फ्लॉपी , ऑडिओ कॅसेट , व्हिडिओ कॅसेट्स , पेन ड्राईव्ह , गुगल ड्राईव्ह , इत्यादी आधुनिक काळात वाचन साहित्य बरोबरच मुद्रणोत्तर साहित्याचाही मोठ्या प्रमाणात उपयोग आज आधुनिक तंत्रज्ञान युगामध्ये ग्रंथालयात केला जाऊ लागला आहे . या सदराच्या माध्यमातून ज्ञानाचे व्यवस्थापन आणि संग्रह करणे अत्यंत सोपे झाले आहे .

इंटरनेट

आज सर्व जग एकमेकाला नेटवर्कने जोडले गेले आहे . नेटवरच्या माध्यमातून एकमेकांच्या जवळ जग आले आहे . इंटरनेट म्हणजे लाखो संगणकाचे एकमेकांना जोडलेले जाळे आहे . जाळ्याचे जाळे किंवा महाजाल म्हणून याकडे पाहिले जाते . इंटरनेटचा सर्वात जास्त उपयोग संशोधन ग्रंथालयात केला जातो . संशोधकांना जर्नल तसेच अद्यावत माहिती प्राप्त करून दिली जाते . ग्रंथालयात इंटरनेट संदर्भ सेवा तत्पर करण्यासाठीही उपयोग करून घेता येतो . त्याचप्रमाणे इलेक्ट्रॉनिक मेन

फाईलशी देवाण-घेवाण चॅटिंग ग्रुप्स प्रत्येक घटनेबाबत तात्काळ माहिती प्रसारण करता येते . सॉफ्टवेअर असेल ई-मेल असेल अशा वेगवेगळ्या माध्यमातून वाचकांना तात्काळ माहितीचे आदान प्रदान इंटरनेटच्या माध्यमातून केली जाते .

इंटरनेट

ज्ञान व्यवस्थापनातील माहिती देवाण-घेवाण करण्यासाठी विशिष्ट संस्था विशिष्ट हेतूने सॉटेलाईट द्वारे संस्था अंतर्गत उभारलेले जाळे म्हणजे इंटरनेट होय . इंटरनेट ब्राउझर्स , वेबसाईट आणि वेब पेज चा वापर करून वापरतात इंटरनेट ई-मेल मेलिंग याद्वया आणि वार्तागट सेवा या सेवा गोष्टी संस्थेतील व्यक्तींना देतात . ग्रंथालयात इंटरनेट स्थापित करण्याचा हेतू वरील निर्देशित प्रलय शोधणे , योग्य ठिकाणी ठेवणे , पाहणे , प्रलेखात सुधारणा करणे , यांचे वितरण करणे , मूळ माहितीची उपलब्धता करणे , तिच्यामध्ये सुधारणा करणे , तिचा वापर करणे , वेबसाईट्स वरील ऑफलाइन माहिती ग्रंथालयातील वेबसाईट्सवर प्रतिबिंबित संग्रहित करणे , इत्यादी हेतूसाठी ग्रंथालयात इंटरनेट स्थापन केले जाते . आणि या माध्यमातून ज्ञानाचे व्यवस्थापन करून ज्ञानाचं योग्य व्यक्तीपर्यंत पोहोचण्याचं काम या साधनांच्या माध्यमातून केली जाते .

एक्स्ट्रा नेट

एक्स्ट्रा नेट मार्फत इतर ग्रंथांमध्ये असणारे व्यवस्थापन वाचन साहित्य याबद्दलची माहिती जाणून घेता येते. वेब चा वापर करून इतर ग्रंथालय संस्थेतील सर्व कामकाजाची माहिती वेबद्वारे चटकन समजते . एक्स्ट्रा नेट मध्ये फायरवॉल गेटवेच्या मार्गाने बाहेरील संस्था सदस्य वाचक इत्यादी कंपनीची माहिती अंतर्गत व्यवहार व इतर माहिती मिळून शकते . या माहितीचा वापर प्रत्येक व्यक्ती प्रत्येक संस्था आपल्या कल्याणासाठी करत असते .

मेटा - डेटा

मेटा डेटा ह्या संस्थेच्या वापर पद्धतीच्या क्षेत्रांतही माहिती संबंधी कोणतीही माहिती समाविष्ट करण्यासाठी विस्तारित केलेली आढळते . उदाहरणार्थ तक्त्याची , स्तंभाची , कार्यक्रम इत्यादी अशा या पद्धती ती मेटा डेटाबाबत विशिष्ट मते असली तरी सुद्धा एक गोष्ट निश्चित मान्य करावी लागेल आणि ती म्हणजे सर्व पैलूंचे उदाहरणात माहिती कार्य यामध्ये गुंतलेल्या व्यक्ती संस्था माहितीची साधने आणि प्रक्रिया माहिती मिळवण्याच्या पद्धती मर्यादा काल आणि घटना नियम इत्यादी वर्णन मेटाडेटा करू शकतो . यांमध्ये अनेक विधी माहिती संग्रहाचा एक संचय केला जातो . या संचयातून हवी ती माहितीचा शोध घेऊन वाचकांपर्यंत पोहोचण्याचं काम या मेटा डेटाच्या माध्यमातून केला जाऊ शकतो .

रिसोर्स सेअरिंग

आजच्या आधुनिक माहिती तंत्रांच्या युगात माहिती केंद्रात सहकार्य निर्माण झाले आहे . उपभोक्तांना अधिक चांगली सेवा देता येईल . यासाठी ग्रंथालयात एकमेकांच्या माध्यमातून माहितीच्या देवाण घेवाणीला रिसोर्स सेअरिंग असे म्हटले जाते . माहिती वेगवेगळ्या स्वरूपाची ग्रंथालयात संग्रहित असल्यामुळे ग्रंथांच्या अशा माहितीची प्राप्ती नियतकालिक , संदर्भग्रंथ , अन्य वाचन साहित्यांच्या माध्यमातून एकमेकांना देवाणघेवाण केली जाते . ग्रंथालयातून आंतर ग्रंथालीन सेवा दिली जात असेल तर इंटरनेटच्या माध्यमातून वेगवेगळ्या माहितीची शेअरिंग या माध्यमातून केली जाते .

ज्ञान व्यवस्थापनाचे फायदे :-

- 1) वाचकांची अभिरुची जाणून वाचन साहित्य जमा करता येतो. 2) ग्रंथालयात उपलब्ध वाचन साहित्यांचा जास्तीत जास्त वापर करणे शक्य होते .
- 3) वाचकास कमीत कमी वेळात हवे असणारे वाचन साहित्य उपलब्ध होईल अशी प्रणाली प्रस्थापित करता येते .
- 4) त्याचप्रमाणे ग्रंथालयात योग्य व्यक्तीकडून योग्य प्रकारे कार्य करून घेऊन ग्रंथालयाचा दर्जा वाढविता येतो .
- 5) ग्रंथालयातील कर्मचाऱ्यांचे व्यक्त गुण जाणून घेऊन त्यांचा फायदा संग्रहित माहिती तात्काळ ग्राहकांपर्यंत पोहोचण्यासाठी करता येते.
- 6) ज्ञानाचे योग्य व्यवस्थापन केल्यामुळे डॉ. एस आर रंगनाथन यांच्या चौथ्या सूत्राची पूर्तता करणे सोपे जाते .

प्रशिक्षित ग्रंथालयीन कर्मचारी :-

प्रशिक्षित ग्रंथालय कर्मचारी ही ग्रंथालयातील वाचन साहित्य तसेच सेवा यांच्याशी जवळीक राखण्यासाठी उचित प्रशिक्षित सेवकांची नितांत गरज असते . तसेच कोणीही कोणतीही माहिती विचारल्यावर ती वेळेवर प्राप्त करून देण्यासाठी त्यांचा हातखंडा असणे आवश्यक आहे. वाचकांना योग्य वेळी माहिती पुरवण्याची कला त्यांच्यामध्ये असणे गरजेचे आहे . अभ्यासू व्यक्तिमत्त्व सर्वसमावेशक ज्ञान ग्रंथालय सेवकाकडे असेल तर विशाल ज्ञानसंग्रहातून येणाऱ्या वाचकांना उत्तम आणि दर्जेदार सेवा देण्यात तो तरबेज निश्चितच असेल यासाठी योग्य प्रशिक्षित ग्रंथालय कर्मचारी असेल तरच तेथील ग्रंथालयीन सेवा चा प्रभाव वाचकावर दिसून येतो .

सारांश :-

ज्ञान व्यवस्थापन हे संस्थेत आवश्यक असते. त्याचप्रमाणे काळानुसार त्यांचे स्वरूप बदलत आहे. ग्रंथालयात ज्ञान व्यवस्थापन एक अविभाज्य अंग आहे . त्याचप्रमाणे माहिती तंत्राच्या मदतीने ज्ञान व्यवस्थापनात माहिती तंत्रज्ञान एक प्रकारची क्रांती घडवून आली आहे . त्यामुळे ज्ञान संपादन करणे सोपे झाले आहे .

पुर्वी ज्ञान व्यावस्थापन करणे खुप जिकिरीचे व अवघड असे काम वाटत होते .

म्हणूनच माहितीच्या युगात ज्ञान व्यवस्थापनास अतिशय महत्त्वाचे स्थान देण्यात आले आहे.

ज्ञान व्यवस्थापनात वाचकांच्या गरजा , अभ्यास , वाचकाची उपयुक्तता वाचन साहित्य उपलब्धतेबद्दल माहिती नियतकालिके , संदर्भ साधने , इत्यादी सेवा देण्यासाठी प्रशिक्षित सेवक वर्गाची आवश्यकता निर्माण झालेली आहे .

आजच्या ज्ञान व्यवस्थापनात आधुनिक तंत्रज्ञाची साधने विकसित झाली आहे .त्यात मुद्रिनेत्तर वाचन साहित्य , इंटरनेट , इंटरनेट , एक्सट्रानेट मेटाडेटा , रिसोर्सेरिंग , तंत्राचा व साधनांचा उपयोग चालू असून , ज्ञान व्यवस्थापनात माहिती तंत्रज्ञान हे फार महत्वाची भूमिका बजावताना दिसून येत आहे . ग्रंथालयांच्या बाबतीत आज इंटरनेट आणि आधुनिक माहिती तंत्रांच्या माध्यमांतून ग्रंथालयांचे व्यवस्थापन करताना अत्यंत उपयुक्त असे साधन मानले जात आहे. आर एफ आय डी , वेब उपयोग सीसीटीव्ही आदी साधनांच्या माध्यमांतून ज्ञानाची जतन संवर्धन आणि हस्तांतरण करणे अत्यंत सहज सोपे झाले आहे .म्हणूनच आज आधुनिक माहिती तंत्रांच्या युगात या माहिती साधमाच्या साह्याने ज्ञानाचे व्यवस्थापन करून वाचकांना हवी ती माहिती कमी वेळेमध्ये उपलब्ध करून देण्यासाठी मैलाचा दगड म्हणून पुढे येत आहे .

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IMPACT OF MODERN TECHNOLOGIES IN HIGHER EDUCATION

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ABSTRACT:

Present age is the modern technologies age, but in this era worldwide the higher education institutions (HEI) landscape underwent dramatic changes causing stretch. The pedagogical discussion is filled with very well-contend accounts of these developments. So many merits in information and communication technology (ICT) add an auxiliary layer to this already compound reality. Against this background, it is mandatory that the question of to run and administrating HEI today be rethought. There are so many emerging technologies such as artificial intelligence (AI), augmented reality, internet of things (IOT), virtual and mixed reality, cloud computing, blockchain etc. Bear the promise to successfully give assistance to HEI administrators in steering their educational institutions through the period of extreme change

KEYWORDS: Modern Technologies, Higher Education, AI, Augmented reality, Cloud Computing, Virtual reality, Internet Of Things etc.

INTRODUCTION:

In this age of information technology nearly in every field modern technologies are used how the educational fields are an exceptional. There is a huge transformation occurred in the education sector brought some substantial changes with modern technology. In an educational sector technology has always been a major driver of change. From the bigning of the printing press to rise of online learning. Educational fields are embody modern technologies like artificial intelligence (AI), augmented reality, internet of things (IOT), virtual and mixed reality, cloud computing, block chain and similar others that are making a difference in the higher education process.

In the age of information technology the evaluation of emerging technologies is very important for their effective impact on teaching leaning process, now a days it is very big challenge in front of academicians.

- Education:

Education means any process of learning. It is deceived from the latin word "Educane? Which means the art of teaching & learning?

- Higher education:

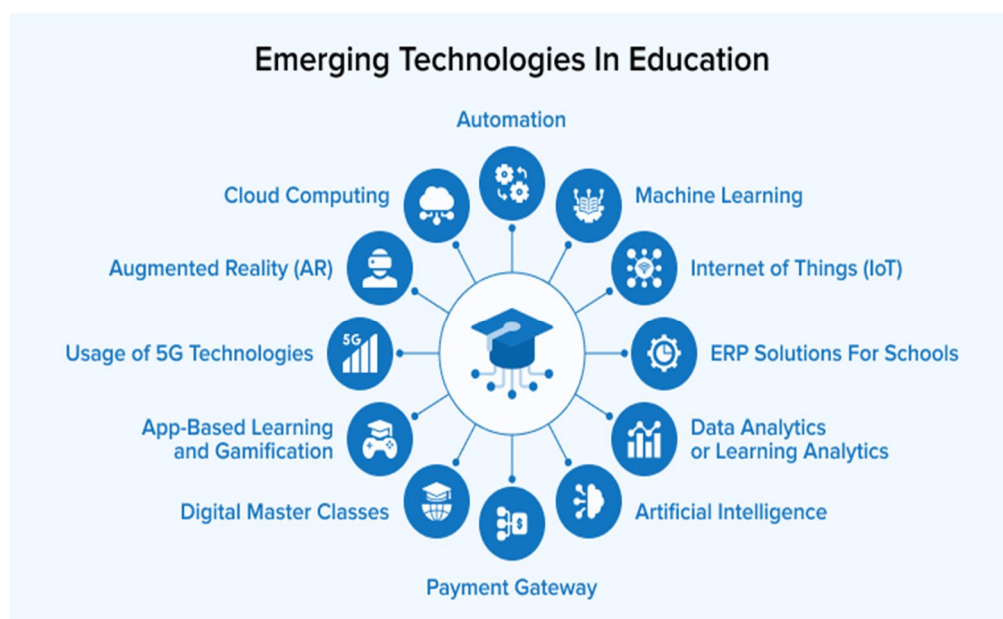
It refers to the level of education that follows secondary education that follows secondary education and provides advanced academic and professional knowledge and skills. It typically includes undergraduate programs, such as bachelor's degrees, and postgraduate programs, such as master's degrees and doctoral degrees.

- Modern technology:

Modern / emerging technologies are tools innovations, and advancements utilized in diverse educational settings (including distance, face to face, and hybrid forms of education) to serve varied education related purposes.

There are so many modern technologies playing a vital role. The list of these is as follows...

LIST OF MODERN TECHNOLOGIES IN EDUCATION:



Impact of Modern Technologies in Higher Education

1. Artificial Intelligence

Impact of Modern Technologies in Higher Education Artificial Intelligence (AI) Summary: AI refers to the simulation of human intelligence processes by machines, especially computer systems. In the context of higher education, AI is being used to enhance the learning experience, streamline administrative tasks, and support personalized learning.

Application to higher education:

AI algorithms can analyze students' learning patterns and provide personalized recommendations for study materials, assignments, and learning methods. Evaluation and feedback: AI-powered tools can grade assignments, provide immediate feedback, and identify areas where students need improvement. AI can automate routine administrative tasks, such as student enrollment, course scheduling, and academic advising, allowing teachers to focus more on teaching and research.

Challenges:

The ethical concerns: The use of AI in education raises ethical questions related to data privacy, bias in decision-making, and the ability of AI to replace human teachers. The technical limitations: The implementation of AI requires significant technical expertise and resources, which can be challenging for some institutions to achieve.

2. Augmented Reality (AR) and Virtual Reality (VR):

AR and VR technologies create immersive learning experiences by overlaying digital information on the real world (AR) or creating fully virtual environments. (VR). These technologies have the potential to revolutionize the way students learn by making education more interactive and engaging.

Application to higher education:

Immersive Learning Experience: AR and VR can simulate real-world environments, allowing students to practice skills and concepts in a safe and controlled setting. For example, medical students can use VR to practice surgical procedures, while architecture students can use AR to visualize building designs.

Remote learning: VR can enable remote students to attend virtual classes and interact with instructors and peers in a virtual environment, bridging the gap between distance and face-to-face learning.

Challenges:

The development and deployment of AR and VR technologies requires significant investments in hardware, software, and content creation, which can be a barrier for some institutions. Not all students may have access to the tools and technology needed to fully benefit from AR and VR, potentially leading to disparities in educational opportunities.

3. Internet of Things (IoT):

IoT refers to a network of physical objects embedded with sensors, software, and other technologies that enable them to connect and exchange data over the Internet. In higher education, IoT can be used to create smart campuses that improve the learning environment and enhance campus security.

Application to higher education:

IoT-enabled devices can automate lighting, temperature control, and other environmental factors in classrooms to create an optimal learning environment. These tools can track attendance, monitor student engagement and provide real-time data to instructors. IoT can enhance campus security by integrating surveillance cameras, access control systems, and emergency response systems while providing real-time data to campus security teams.

Challenges:

The widespread use of IoT devices increases the risk of data breaches and cyberattacks, making data security a significant concern for organizations. Integrating IoT devices with existing campus infrastructure can be challenging, requiring significant technical expertise and coordination.

4. Cloud Computing:

Cloud computing refers to the delivery of computing services over the Internet, including storage, processing power, and software applications. In higher education, cloud computing provides a scalable and cost-effective solution for managing data, providing online courses and supporting research activities.

Application to higher education:

Cloud-based learning management systems (LMS) allow institutions to deliver online courses, manage student data, and facilitate collaboration between students and instructors. Cloud computing enables researchers to store, share, and analyze large datasets, facilitating collaboration across institutions and disciplines. The data management: Cloud storage solutions provide institutions with a secure and scalable way to manage student records, research data, and administrative information.

Challenges:

Storing sensitive data in the cloud raises concerns about data privacy and compliance with regulations such as the General Data Protection Regulation (GDPR). The reliance on cloud services requires stable and high-speed internet connectivity, which may not be available in all regions.

5. Blockchain:

Blockchain is a decentralized digital account that records transactions across multiple computers in a way that ensures security, transparency, and immutability. In higher education, blockchain has the potential to revolutionize the way credentials are issued, verified, and shared.

Application to higher education:

Digital credentials: Blockchain can be used to issue digital diplomas, certificates, and transcripts that are tamper-proof and can be easily verified by employers and other institutions. Management of academic records: Blockchain can streamline the management of academic records, ensuring that student data is secure, accurate, and easily accessible. A decentralized learning platform: Blockchain can support the development of decentralized learning

platforms that allow students to create and share educational content, track their learning progress, and earn micro-credentials.

Challenges:

Regulatory uncertainty The use of blockchain in education is still in its early stages, and there is a lack of clear regulatory guidelines governing its implementation. **Technical Complexity** - Implementing blockchain technology requires a deep understanding of its underlying principles and significant technical expertise, which can be a barrier for some institutions.

Conclusion

As modern technologies continue to advance, their influence on higher education will become increasingly significant. To harness their full potential, higher education institutions (HEIs) must take a strategic approach, which includes investing in infrastructure and training, fostering collaboration among stakeholders, and ensuring equitable access to technology for all students. Additionally, HEIs must address the ethical considerations surrounding the use of technologies like AI and Blockchain. Encouraging research and innovation in educational technology will be crucial for enhancing teaching and learning in this evolving landscape.

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Empowering Futures: Implementation of NEP 2020

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Introduction:

Institutes are proud to announce the implementation of the National Education Policy 2020 (NEP 2020) starting from the academic year 2024-

25. As an institution committed to academic excellence and holistic development, recognize Institutes are the significance of aligning educational framework with the visionary goals outlined in NEP 2020. This policy marks a paradigm shift in the Indian education system, emphasizing flexibility, innovation, and holistic learning. By embracing NEP 2020, the aim of Institutes to equip the students with the necessary skills, knowledge, and values to thrive in the rapidly evolving global landscape.

Aims and Objectives:

The primary aim of implementing NEP 2020 in Institutes is to transform education into an inclusive, equitable, and adaptable system that nurtures the intellectual, social, and emotional growth of every learner. The objectives include:

1. Providing a multidisciplinary and holistic education framework that encourages critical thinking, creativity, and problem-solving.
2. Fostering a conducive learning environment that promotes experiential learning, research, and innovation.
3. Empowering students with 21st-century skills such as digital literacy, communication, collaboration, and adaptability.
4. Promoting cultural awareness, ethical values, and environmental sustainability among students.
5. Facilitating seamless integration of vocational education, internships, and community engagement to enhance employability and entrepreneurship.

Policy Framework:

NEP 2020 emphasizes several key principles that guide the educational practices:

1. **Flexibility:** The policy advocates for a flexible curriculum framework that allows students to choose from a wide range of subjects across disciplines. Institutes will offer interdisciplinary courses and encourage students to pursue their academic interests beyond conventional boundaries.
2. **Multilingualism:** Recognizing the importance of multilingualism in a diverse country like India, Institutes will promote the learning of regional languages alongside the medium of instruction. This fosters linguistic diversity and inclusivity in the educational ecosystem.
3. **Assessment Reforms:** NEP 2020 advocates for a shift from rote learning

to competency-based assessment. The method of assessment will focus on evaluating students' understanding, application, and analytical skills rather than memorization. Continuous assessment and feedback mechanisms will be implemented to support student learning and growth.

4. Teacher Training and Professional Development: To recognize the pivotal role of teachers in implementing NEP 2020 effectively. The Institutes will invest in teacher training programs to enhance their pedagogical skills, ICT proficiency, and understanding of innovative teaching methodologies. Continuous professional development opportunities will be provided to ensure that the faculty members stay abreast of the latest educational trends and practices.

Salient Features:

Some of the salient features of implementing NEP 2020 in the Institutes include:

1. Choice-based Credit System (CBCS): The Institutes will adopt a CBCS, allowing students to select courses based on their interests, aptitudes, and career aspirations. This promotes flexibility, mobility, and personalized learning experiences.

2. Integrated Curriculum: The University will design an integrated curriculum that bridges the gap between theoretical knowledge and real-world applications. Interdisciplinary projects, case studies, and industry collaborations will be integrated into the curriculum to enhance relevance and practicality.

3. Technology Integration: Leveraging technology as an enabler, the Institutes will integrate digital tools, online resources, and virtual platforms to enhance teaching, learning, and assessment processes. Blended learning models will be adopted to provide anytime, anywhere access to educational content.

4. Experiential Learning: NEP 2020 emphasizes the importance of experiential learning in fostering creativity, problem-solving, and innovation. The Institutes will organize internships, field trips, industry visits, and hands-on workshops to provide students with practical exposure and real-world insights.

Skill Development:

Implementing NEP 2020 will facilitate the development of a diverse range of skills among the students, including:

1. Critical Thinking and Problem-Solving: The curriculum will emphasize analytical thinking, logical reasoning, and solution-oriented approaches to complex problems.

2. Communication and Collaboration: Through group projects, presentations, debates, and discussions, students will enhance their communication, negotiation, and teamwork skills.

3. Digital Literacy: With a focus on technology integration, students will develop proficiency in digital tools, information literacy, and online communication platforms.

4. Entrepreneurship and Innovation: The Institutes will foster an entrepreneurial

and-set among students by providing mentorship, incubation support, and networking opportunities for aspiring entrepreneurs.

Expected Outcomes and Opportunities:

By implementing NEP 2020, we envision the following outcomes and opportunities for the students:

1. **Holistic Development:** Students will experience holistic development encompassing intellectual, emotional, social, and physical aspects, preparing them to excel in diverse personal and professional contexts.
2. **Enhanced Employability:** The acquisition of 21st-century skills and practical experiences will enhance students' employability and competitiveness in the job market.
3. **Higher Education and Research:** NEP 2020 encourages research, innovation, and lifelong learning. Students will be well-prepared to pursue higher education, engage in research, and contribute to knowledge creation and dissemination.
4. **Global Citizenship:** Through exposure to diverse perspectives, cross-cultural interactions, and global best practices, students will develop into responsible global citizens with a deep sense of empathy, inclusivity, and sustainability.

In conclusion, the implementation of NEP 2020 in the Institutes signifies the commitment to excellence, innovation, and inclusive education. Institutes are confident that this transformative policy will empower the students to thrive in the dynamic and interconnected world of the 21st century.

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H-Index: An Useful Tool in Research Metrics

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Abstract:

The h-index is an index that attempts to measure both the productivity and citation impact of the published work of a scientist or scholar. The index is based on the set of the scientist's most cited papers and the number of citations that they have received in other publications and on the distribution of citations received by a given researcher's publications. The h-index is not only important for individual users but it is also beneficial for the scientific research institutions, universities and main journal editors. Present paper focus on the concept of H- index, along with its pros and cons and it also suggest some ticks to improve h-index.

Keywords: Research Metrics, Scientific Productivity, H-Index.

Introduction:

Now days, bibliometrics and research metrics these two terms found as a corollary of each other. Research Metrics a newly evolved concept, which is the quantitative analysis of scientific and scholarly research outputs and their impacts. Research Metrics include a variety of measures and statistical methods for assessing the quality and broader impact of scientific and scholarly research. It also tracks the impact of researcher in the specific field and provides insight into the influence of specific journal publications, individual articles, and authors. Since a very long time, the only tool for assessing journal performance was the Impact Factor. Now days, there are a range of different research metrics available. From the traditional Impact Factor range of research metrics slanted towards Altmetrics, h-index, and beyond. Research metrics are the fundamental tools used across the publishing industry to measure performance, both at journal- and author-level. For the evaluation of individual impact of research work of a scientist, an effective tool which can easily computable the achievements of the scholar's research paper in form of its usage. H-index is such tool to measure the impact of research publication of a scholar.

H-Index:

. The h-index is an author-level research metric, which attempts to measure both the scientific productivity and the apparent scientific impact of the scientists. The h-index evaluates the cumulative scholarly impact of an author's performance. It measures the quantitative (productivity) and qualitative (citations) research work of a researcher as a single number meaning that neither few papers which are highly cited nor too many papers with very few citations will produce a high h-index. The concept h-index is based on the set of scientists most cited papers and the number of citations these papers received in others people's publications. The index can also be applied to the productivity and impact of a group of scientists. (Sangam, & Mogali, 2009). The concept of h-index is evolved by Jorge E. Hirsch, Professor of Physics belongs to University of California. He published an article which describing the h-index, he called it as "a useful index to characterize the scientific output of the researcher." Hirsch

proposes a scalar index, an original simple new indicator to characterize the cumulative impact of the research work of individual scientists. It is the highest number of publications of the scientists that received 'h' or more citations.

According to Hirsch, "A scientist has index 'h' if 'h' of his/her N_p papers have at least h citations each and the other ($N_p - h$) papers have no more than h citations each". **Hirsch (2005)**. In other words, a scholar with an index of h has published h papers each of which has been cited in other papers at least h times. The first part of definition counts that number of papers which have minimum the same number of citations for each papers and that number is postulated to be the exact value of h. The second part of the definition considers the rest of the papers published by the scholars. These papers are the sum of the papers minus h papers and each of them does not have equal or more citations than h papers. **(Rajesh Singh)** Eg an h-index of 20 tells us that an author has written 20 papers which have each been cited at least 20 times. In the given definition, the term NP represents number of papers of a scholar.

How to calculate H-Index?

In order to calculate the h-index there are databases which often show you how an article has been cited. There are three databases in which you can easily see how a person has been cited, these database are namely:

1. Web of Science
2. Scopus
3. Google Scholar

Publish or Perish is a free software program that calculates h-index for authors who do not have a profile account in Google Scholar. The calculation of h-index may be different in different databases or resources because each database covers different journals and years of indexation meaning that the same author will not have same h-index value across all databases. The publication record and citation record of an individual denotes the usefulness of his or her research. This information includes the number of papers (N_p) published over number of (n) years, the number of citations (N_c) for each paper (j), the journals where the papers were published, their impact parameter, etc. Google Scholar Citations provide a simple way for authors to keep track of citations to their articles. You can check who is citing your publications, graph citations over time, and compute several citation metrics. The h-index can be calculated using Google Scholar. In the Web of Science h-factor only scientific articles published in journals which have ISI-recognition (determined by Thomson-Reuters) are considered citable (so not articles in other journals, chapters in books, etc.). In the Scopus h-factor a larger pool of journals is included.

Example of H-Index:

Author: A

Papers	1	2	3	4	5	6	7	8	9	10	11	12
No. of Citations	43	37	34	26	17	12	9	8	5	3	2	1

Author: B

Papers	1	2	3	4	5	6	7	8	9	10
No. of Citations	22	18	16	8	7	3	2	1	0	0

In the first example, author A written total 12 papers to his credit. If we go through these details, we found that author A has written at least 8 research papers and these 8 research papers has at least 8

citations. In other words, out of his total papers there are 8 papers which received minimum 8 or more citations hence h index of this author can be treated 8 in the above example. The 9th paper or 9 is not h index because 9th paper does not receive 9 or more citations.

In the second example, author B written total 10 papers to his credit. If we go through these details, we found that author B has written at least 5 research papers which having has at least 5 or more citations. In other words, out of his total papers there are 5 papers which received minimum 5 or more citations. Hence h index of this author can be treated as 5.

Applications of H-index:

Jorge Hirsch, suggested that the h-index will be applicable at the micro level that is, as a measure to quantify the scientific output of a single researcher. The h-index can be used not only for the lifetime achievements of a single researcher but can be applied to any publication set.

Advantages of H-index

- H-index combines a measure of quantity (publication) and impact (citations).
- Assistance while making decisions about promotions, fund allocations and awarding prizes. Because it allows us to characterize the scientific output of a researcher with objectivity.
- The H-index can be easily obtained by anyone with access of science and in addition it is easy to understand.
- It performs better than other single-number criteria commonly used to evaluate the scientific output of a researcher (impact factor, total number of documents, total number of citations, citation per paper rate and number of highly cited papers). (Costas and Maria, 2007).

Disadvantages of H-index

- In typical 'h' values, there are inter-field differences due to differences among fields in productivity and citation practices. So it is difficult to compare on h-index base scientists from different disciplines.
- The h-index depends on the duration of each scientist's career because the pool of publication and citation increases over time.
- Highly cited papers are important for the determination of the h-index, but once they are selected it belongs to top h papers, it is unimportant that numbers of citations they receive.
- Artificial increase in the number of self-citations or other similar kind of practices may increase for achievement of better h-index. In short, changes in the publishing behavior of scientists may found.
- There are also technical limitations, such as the difficulty to obtain the complete output of scientists with very common names, or whether self-citations should be removed or not.

How to Improve h-index

(Masic, 2016) in his research paper highlight some points which will found helpful to increase the h-index. h-index has become an important measure of career development. A good way to increase citation index is self-citation. To use more number of self-citations can double the h-index very fast. The citation should be relevant but irrelevant citation can also increase h-index. Some practices like double publication of the same paper for a conference, and later with slightly different name in a paper, can also increase citation index. Both papers should have many self-citations. Another important way is cooperation with colleges. If you cite your college and he also cites you then both researchers significantly increases of number of citations. This cooperation can be expanded to a larger unit of people, promoting larger scientific communities and increasing the value and number of citations considerably. Collaboration with a famous first author can gain more citation. Every time your co-author gets cited, or self-cites, you also get cited. Attending the conferences and research meetings may help you to promote your work and search for new collaboration opportunities. Writing a blog can also be

the way to promote your work. Whatever work done by your same should be available for search and download. The paper should be searchable, that means that paper can be found using the search tools like Google Scholars, PubMed, ResearchGate, etc. Mostly give the emphasize to Publish your work in open access journals. With this way h-index can be increased more or less manner.

Conclusion:

While calculating the h-index, both quantity and impact of publications are taken into account. But the number of publications plays a very important role, since it is the maximum h-index an author can obtain. The h-index tends to underestimate the achievement of scientists with a “selective publication strategy”, that is, those who do not publish a high number of documents but who achieve a very important international impact.

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National Education Policy 2020: Enhancing the Value of Libraries in Education

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Key Word: National Education Policy, Libraries, Online Learning, Library Services, Digital Resources

Abstract:

The National Education Policy 2020 (NEP-2020), introduced by the MHRD, aims to modernize the education system and serve the needs of a contemporary nation. This policy places greater emphasis on the role of libraries at all levels, including public and academic institutions. It highlights the importance of improving library infrastructure, services, and operations. Additionally, the policy incorporates Information Communication Technology (ICT), digital, and online resources, offering diverse and unique facilities and services to all readers across the nation.

Introduction:

The National Education Policy 2020, introduced by the Ministry of Human Resource Development, Government of India, is the result of extensive research and development on the existing education policy and the current needs of society. As the first education policy of the 21st century, it replaces the thirty-four-year-old National Policy on Education (NPE) of 1986. Education is essential for realizing full human potential, fostering an equitable society, promoting national development, and ensuring universal access to quality education. India is continually evolving its education system and holds a significant position in global leadership in terms of economic growth, social justice, equality, scientific advancement, national integration, cultural preservation, and universal high-quality education. This policy is vital for optimizing the country's economic potential and resources for individuals, society, the nation, and the world.

As the second most populous country, India stands to benefit greatly from the National Education Policy 2020, which plays a crucial role in the nation's development. The global education development agenda, reflected in Goal 4 (SDG 4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015, aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." The entire education system is being restructured to support and enhance education and learning, ensuring that all critical targets and goals of the 2030 Agenda for Sustainable Development are met.

The National Education Policy 2020, being the first education policy of the 21st century, seeks to address the evolving developmental needs of the country. It proposes the revision and revamping of all aspects of the current education structure, including regulations and governance, to create a new system aligned with the aspirational goals of 21st-century education, encompassing both school and higher education levels.

Purpose of the Policy: The education policy aims to cultivate individuals who are capable of rational thinking and action, imbued with compassion, empathy, courage, resilience, scientific temper, and creative imagination, all grounded in strong ethical values. It seeks to produce productive, engaged, and conscientious citizens who contribute to building an equitable, inclusive, and pluralistic society, as envisioned by the Indian Constitution.

Significant Highlights of the Policy:

1. **The 5+3+3+4 System:** The existing 10+2 structure of school curricula will be replaced by a 5+3+3+4 curricular structure, corresponding to the age groups 3-8, 8-11, 11-14, and 14-18 years, respectively. This new structure encompasses 12 years of schooling along with three years of Anganwadi and pre-schooling.
2. **The School Starting at Age 3:** According to the NEP, children will begin their education journey at age three as part of early childhood care and education (ECCE). This will be provided through various channels: a) standalone Anganwadis, b) Anganwadis co-located with primary schools, c) pre-primary schools/sections for children aged 5 to 6 years, co-located with existing primary schools, and d) standalone pre-schools. All of these will employ workers/teachers specifically trained in ECCE curriculum and pedagogy.
3. **Promoting Libraries:** NEP 2020 introduces a National Book Promotion Policy, with extensive initiatives to ensure books' availability, accessibility, quality, and readership across different regions, languages, and genres.
4. **Teaching up to Class 5 in Mother Tongue/Regional Language:** Instruction up to class 5 will be provided in the mother tongue or regional language.
5. **Establishment of Bal Bhavans:** Every state or district is encouraged to establish 'Bal Bhavans,' which will function as special daytime boarding schools. The infrastructure of these schools can also be used by "Samajik Chetna Kendras."
6. **Phasing Out College Affiliation:** College affiliations will be phased out over 15 years, with a state-wise mechanism established to grant graded autonomy to colleges.
7. **Foreign Universities in India:** NEP 2020 opens the door for the establishment of foreign universities in India.
8. **Common Entrance Exam:** A Common Entrance Exam will be introduced for admissions to various college courses.
9. **National Educational Technology Forum:** An autonomous body, the National Educational Technology Forum (NETF), will be established to provide a platform for the free exchange of ideas on using technology to enhance education, learning, assessment, planning, and administration.
10. **Academic Bank of Credits:** A digital Academic Bank of Credits will be established, allowing academic credits earned from different higher education institutions to be transferred and counted towards the final degree.
11. **Multiple Entry and Exit Points in Higher Education:** NEP introduces multiple entry and exit points in higher education programs. Students can exit after one year with a Certificate, after two years with a Diploma, after three years with a Bachelor's degree, and after four years with a Bachelor's degree with Research.
12. **Changes in Report Cards:** The progress cards for school-based assessments will be redesigned.
13. **By 2030:** The minimum qualification for teaching will be a 4-year integrated B.Ed. degree.

Principles and Features of NEP 2020:

- Ensuring universal access to education at all levels.
- Recognizing teachers and faculty as central to the learning process.
- Introducing a new curricular and pedagogical structure for Early Childhood Care & Education.
- Achieving foundational literacy and numeracy.
- Reforming school curricula and pedagogy.
- Emphasizing respect for diversity and the local context in all curricula.
- Encouraging creativity, critical thinking, logical decision-making, and innovation.
- Promoting multilingualism and the significance of languages.
- Extensively integrating technology in education.

- Offering flexibility for learners to choose their learning paths and programs.
- Implementing assessment reforms.
- Promoting outstanding research.
- Ensuring continuous review and improvement.
- Providing equitable and inclusive education.
- Strengthening teacher recruitment and career development.
- Advancing effective and innovative school governance.

Higher Education: Increasing Gross Enrolment Ratio (GER) to 50% by 2035: NEP 2020 aims to raise the Gross Enrolment Ratio in higher education, including vocational education, from 26.3% in 2018 to 50% by 2035, with the addition of 3.5 crore new seats in higher education institutions.

New National Education Policy and Libraries: The National Education Policy 2020 emphasizes the importance of libraries as "learning and resource hubs." NEP 2020 aims to universalize education and achieve a 100% Gross Enrolment Ratio at the school level. To accomplish this, libraries must ensure the availability of sufficient and up-to-date study and reading resources, providing easy access to all users in both school and higher education libraries. The role of libraries extends beyond these services, necessitating proactive approaches to meet the evolving educational needs. NEP 2020 includes provisions for advanced and current resources aligned with the new curriculum for both society's readers and teachers. Although the policy places less emphasis on libraries, it is crucial to recognize the value of library and information centers within the framework of NEP 2020, calling for greater focus on library services and facilities.

Adequate Library Staff: According to NEP 2020 (21.9), it is essential to ensure the availability of adequate library staff to manage library services for public readers and teachers while developing appropriate career pathways and continuous professional development (CPD) opportunities for them. Additional steps include strengthening existing libraries, establishing rural libraries and reading rooms in underserved areas, providing reading materials in Indian languages, creating children's libraries and mobile libraries, establishing social book clubs across subjects, and fostering collaborations between educational institutions and libraries. The policy also highlights the need for libraries to maintain a diverse and high-quality collection for readers across various fields. It notes that many schools and organizations lack proper space and facilities for libraries, emphasizing the importance of creating organized spaces and resources for users by 2025 to enhance the value of libraries for the public and society.

Suitable Infrastructure for Libraries: Adequate and suitable infrastructure will be established to ensure that all interested adults have access to adult education, study, and lifelong learning. A key initiative will involve utilizing school complexes after school hours and on weekends, as well as public library spaces, for adult education courses that are equipped with Information Communication Technology (ICT) and designed for community engagement and enrichment activities. Sharing infrastructure among schools, higher education, adult education, vocational training, and other community activities will be crucial for optimizing physical and human resources, creating synergy among these five types of education and beyond. Therefore, Adult Education Centres (AECs) could also be integrated within public institutions such as higher education institutions and vocational training centres.

Availability and Accessibility of Books: NEP 2020 prioritizes the availability and accessibility of quality books and resources for the public to enhance education and research development. Improving access to books is vital for fostering a reading culture within communities and educational institutions. The policy recommends that all communities, organizations, and educational institutions, schools, colleges, universities, and public libraries, be strengthened and modernized to ensure an adequate supply of books that meet the diverse needs and interests of all students. NEP 2020 also includes provisions to

provide resources for various special readers, including individuals with disabilities and other differently-abled persons.

Role of Central and State Government: The central and state governments are responsible for establishing and supporting library services and will take steps to ensure that books are accessible and affordable to everyone across the country, including those in socio-economically disadvantaged and rural or remote areas. Both public and private sector agencies and institutions will develop strategies to enhance the quality and appeal of books published in all Indian languages.

Provisions for Online Resources and Digital Libraries in NEP 2020: NEP 2020 includes provisions for online resources and digital libraries, with initiatives aimed at enhancing the accessibility of library books online and expanding digital libraries.

Strengthening Existing Libraries: The policy emphasizes strengthening all existing libraries by establishing rural libraries and reading rooms in underserved areas, providing reading materials in Indian languages, creating children's libraries and mobile libraries, forming social book clubs across various subjects in India, and promoting greater collaboration between educational institutions and libraries.

Libraries need to adapt their services to incorporate the frequent use of Information and Communication Technology (ICT) across all library operations. The Government of India is committed to providing world-class online teaching and learning resources for users, from school level to higher education institutions.

The Digital India initiative and the Indian government's vision support the development of digital libraries for online learning and teaching resources. NEP 2020 offers a supportive framework and development parameters for Indian libraries.

Availability of Non-Book Materials and Technology Use in Libraries: The policy indicates that library technology will be utilized to strengthen and implement these initiatives. It advocates for quality technology-based options for adult learning, including apps, online courses, modules, satellite TV channels, online books, digital resources, and ICT-equipped libraries and Adult Education Centres across the nation. In many cases, quality adult education can be delivered through online modes. The National Education Policy aims to enhance all existing libraries and includes various provisions for the development of libraries at all levels in the digital age.

In the current modern digital era, libraries are poised to play a crucial role in research and educational development, providing quality education and effective pathways for national progress.

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ग्रंथालय आणि माहितीशास्त्राचा भारतातील प्रचलित संशोधन कल

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सार :

सदरील शोध निबंधात इ.स. १९५० ते २०१२ आणि २०१३ ते २०१७ या कालखंडातील ग्रंथालय आणि माहितीशास्त्र विषयाचा संशोधन कल (प्रवाह) दर्शविण्यात आलेला आहे. कल दर्शवित असताना पीएच.डी. संदर्भात दशक निहाय झालेले संशोधन, भारतातील विद्यापीठात विद्यापीठ निहाय झालेल्या संशोधनांची रँक लिस्ट, राज्य निहाय झालेले संशोधन, मार्गदर्शनक निहाय सर्वाधिक झालेले संशोधन, भाषा निहाय झालेले संशोधन, ग्रंथालय आणि माहितीशास्त्र उपविषय निहाय झालेले संशोधन यांचा आढावा घेण्यात आला आहे.

शोधसंज्ञा :

ग्रंथालय आणि माहितीशास्त्रातील इ.स. १९५० ते २०१२ मधील झालेले भारतातील संशोधन, ग्रंथालय आणि माहितीशास्त्रातील इ.स. २०१३ ते २०१७ या कालखंडात. भारतात झालेले संशोधन, LIS Research Trend in India, ग्रंथालय आणि माहिती शास्त्रात भारतीय विद्यापीठ निहाय झालेलें संशोधन.

प्रस्तावना :

मानवी जीवनातील प्रत्येक क्षेत्रात कालानुरूप परिवर्तन आवश्यक असते. त्यासाठी नव-नवीन बदल घडवून आणण्यासाठी प्रयत्न होत असतात व संशोधना आधारे बदल घडवून आणले जातात. यामुळेच विकास घडून येत असतो. प्रत्येक क्षेत्रात संशोधन होत असते. ग्रंथालय आणि माहितीशास्त्राचा विकास देखील संशोधनामुळेच झालेला आहे व होत आहे. ग्रंथालय आणि माहितीशास्त्रातील भारतातील पहिले संशोधन दिल्ली विद्यापीठातील डी.बी. कृष्णराव यानी 1957 साली Facet Analysts and depth Classification of Agriculture या विषयावर केलेले आहे. सामाजिक शास्त्रातील इ.स. 2017 पर्यंत झालेल्या पीएच.डी. संशोधननाचा विचार करता आपल्या निदर्शनास असे येते की, ग्रंथालय आणि माहिती शास्त्रातील संशोधन हे सामाजिक शास्त्रातील अन्य विषयांचा विचार करता फार मागे राहिले आहे. इ.स. 1950 ते 2017 पर्यंत भारतात एकूण केवळ 2075 संशोधन झाली आहेत व LIS मधील संशोधकांना पीएच.डी. पदवी मिळविता आलेली आहे. भारतातील अनेक विद्यापीठात संशोधन मार्गदर्शकाची वाणवा आहे. यामुळे तेथील LIS च्या अभ्यासकांना संशोधन करण्याची इच्छा असताना देखील संशोधन करता आलेले नाही ही वस्तुस्थिती नाकारता येणार नाही.

इ.स. १९५० ते २०१२ मधील झालेले भारतातील संशोधन :

1950 ते 2012 या कालखंडात LIS मधील 1754 संशोधकांनी पीएच.डी. पदवी मिळवली होती. इ.स. 1950 ते 1959 या पहिल्या दशकांत केवळ 2 संशोधन झाली आहेत. तसेच इ.स. 1960 ते 1969 या दुसऱ्या दशकामध्ये देखील मात्र 2 च संशोधन झालेली आहेत. इ.स. 2000 ते 2009 या दशकांत 804 चा विक्रमी पल्ला संशोधकांना गाठता आलेला आहे व त्यांचे प्रमाण 45.84 % आहे. विद्यापीठ निहाय संशोधनांचा विचार करता असे लक्षात येते की, सर्वाधिक संशोधन शिवाजी विद्यापीठांत झालेली होती व संख्या 97 आहे. पहिल्या 5 विद्यापीठांपैकी शेवटच्या पांचव्या क्रमांकावर मद्रास विद्यापीठ येते. संशोधनांची संख्या 63 होती. महाराष्ट्रातील पुणे विद्यापीठाचा चवथा क्रमांक असून संशोधनांची संख्या 67 होती. राज्य निहाय संशोधनांची संख्या पहाता सांख्यिकी विश्लेषणांत महाराष्ट्र राज्य प्रथम क्रमांकावर झालेला LIS संशोधनांतील सरासरी वाढीचे प्रमाण 7 % असून रँक लिस्ट मध्ये दुसरी रँक येते. पहिल्या 5 उपविषयांतील श्रेणींचा विचार करता Bibliometrics / Scientometrics / Webometrics Studies हा उपविषय पहिल्या क्रमांकावर येतो व झालेल्या एकूण संशोधनांची संख्या 171 असून प्रमाण 9.75 % आहे. पाचव्या क्रमांकावर Information Needs हा उपविषय आहे, संशोधनांची संख्या 69 व प्रमाण 3.93 % आहे. डिजिटल युगातील अपेक्षित उपविषयांचा विचार करता IT Application in Libraries हे प्रथम श्रेणीत येते व संशोधनांची संख्या 52 आहे. त्याचप्रमाणे E-Resources हा उपविषय देखील पहिल्याच श्रेणीत येत असून एकूण संशोधनांची संख्या 52 च आहे. दुसऱ्या क्रमांकावर Network and Consortia विषय आहे व संशोधनांची संख्या 49 आहे. तिसऱ्या क्रमांकावर Library Automation आहे व या उपविषयामध्ये झालेल्या एकूण संशोधनांची संख्या मात्र 21 आहे. चवथ्या क्रमांकावर Internet Resources हा उपविषय येतो. या विषयामध्ये भारतातील झालेल्या एकूण संशोधनांची संख्या 19 आहे. पाचव्या क्रमांकावर Library Management Software या उपविषयामध्ये झालेली संशोधन असून एकूण संख्या 15 कशी नगण्यच आहे. संशोधन मार्गदर्शक निहाय विचार केल्यास असे निदर्शनास येते की, C.R. Karisiddappa हे प्रथम श्रेणीत मोडत असून त्यांनी 36 संशोधक विद्यार्थ्यांना मार्गदर्शन केले आहे.

दुसऱ्या क्रमांकावर डॉ. जे.एन. गौतम हे संशोधन मार्गदर्शक येतात व त्यांनी संशोधनांसाठी मार्गदर्शन केलेल्या संशोधक विद्यार्थ्यांची संख्या 20 आहे. त्याचप्रमाणे त्यांनी 15 संशोधक विद्यार्थ्यांना सहाय्यक संशोधन मार्गदर्शक म्हणून कार्य केले होते. तिसऱ्या क्रमांकावर महाराष्ट्रातील नागपूर विद्यापीठ चे मार्गदर्शक डॉ. पी.एस.जी. कुमार स्थान मिळविले ले असून एकूण 33 संशोधक विद्यार्थ्यांना त्यांनी मार्गदर्शन केले आहे. चवथ्या क्रमांकावर डॉ. हेमंत शर्मा य संशोधन मार्गदर्शकांनी स्थान पटकावले असून त्यांनी मार्गदर्शन केलेल्या संशोधक विद्यार्थ्यांची संख्या 18 आहे तसेच 10 विद्यार्थ्यांना त्यांनी सहाय्यक मार्गदर्शक म्हणून मार्गदर्शन केले आहे. पांचव्या क्रमांकावर डॉ. एन. आर. सत्यनारायण या मार्गदर्शकांचा क्रमांक येत आहे व त्यांनी 24 संशोधक विद्यार्थ्यांना Ph.D. साठी मार्गदर्शन आहे तसेच एका विद्यार्थ्याला सहाय्यक मार्गदर्शक या नात्याने मार्गदर्शन केले होते. 1950 ते 2012 या कालावधीत इंग्रजी भाषेव्यतिरिक्त इतर प्रादेशिक भाषांचा विचार केल्यास असे निदर्शनास येते की, हिन्दी भाषेत LIS विषयांत 2006 ते 2010 या कालावधीत एकूण 16 संशोधन झाली होती, 2001 ते 2005 मध्ये 12, 2011 ते 2012 मध्ये 10, 1996 ते 2000 या वर्षात 8, 1986 ते 1990 मध्ये 2, 1991 ते 1995 या पांच वर्षात 2 अशाप्रकारे राष्ट्र भाषा हिन्दीत LIS

विषयांवर एकूण 58 संशोधन झाली होती. बंगाली भाषेत 10, गुजराती भाषेत 10 आणि मराठी भाषेत निव्वळ 7 संशोधन झालेली आहेत. अशाप्रकारे प्रादेशिक भाषेत केवळ 77 संशोधन झाली आहेत.

2013 ते 2017 मधील LIS संशोधन :

2013 ते 2017 या पांच वर्षांत LIS विषयावर एकूण 321 संशोधन झाली आहेत. त्यापैकी 2013 साली 87, 2014 मध्ये 73, 2015 मध्ये 66, 2016 या वर्षात 79 आणि 2017 या वर्षात 16 संशोधन झाली आहेत.

विद्यापीठ निहाय माहिती चे अवलोकन करता असे लक्षात येते की, प्रथम क्रमांकावर म्हैसूर विद्यापीठ असून एकूण 28 संशोधन झाली आहेत. दुसऱ्या क्रमांकावर श्री जगदीशप्रसाद झाबरमल टिबरेवाल विद्यापीठ असून एकूण 26 संशोधन झाली आहेत. तिसऱ्या क्रमांकावर मदुराई कामराज विद्यापीठ असून LIS संशोधन संख्या ही 19 आहे. चवथ्या क्रमांकावर महाराष्ट्रातील पुणे येथील टिळक महाराष्ट्र विद्यापीठ असून झालेल्या एकूण संशोधनांची संख्या 16 आहे. पांचव्या क्रमांकावर अलगप्पा युनिव्हर्सिटी असून झालेल्या एकूण संशोधनाची संख्या 15 आहे.

LIS विषयांमधील राज्य निहाय झालेल्या संशोधन संदर्भात माहिती घेतली असता असे लक्षात येते की, तामिळनाडू राज्य पहिल्या क्रमांकावर येते. या राज्यात एकूण 63 संशोधन झाली (19.63%), दुसऱ्या क्रमांकावर महाराष्ट्र राज्य आहे. या राज्यात एकूण 61 (19%) संशोधन झाली. तिसऱ्या क्रमांकावर कर्नाटक राज्य आहे व येथील पीएच.डी. संशोधन संख्या 48 (14.95%) आहे. चवथ्या क्रमांकावर राजस्थान स्टेट असून येथील LIS मधील संशोधन संख्या 34 (10.59%) आहे. पांचव्या क्रमांकावर पश्चिम बंगाल राज्य आहे व संशोधन संख्या 24 (7.48%) आहे.

2013 ते 2017 या काळातील LIS उपविषयांतील संशोधन पहाता असे लक्षात येते की, अनुक्रमे Bibliometrics Scintometrics / Webometrics या उपविषयामध्ये 49 (15.26%), E-Resources मध्ये 34 (10.59%), Library Services मध्ये 33 (10.28%), IT Application in Libraries / ICT या उपविषयात 32 (9.97%) आणि Resource sharing, networking & Consortia या उपविषयांत 31 (9.66%) असे ग्रंथालय आणि माहितीशास्त्र या मुख्य विषयांतील विविध उपविषयांतील संशोधन संख्या, प्रमाण व श्रेणी आहे.

संशोधन मार्गदर्शक संदर्भात असे निदर्शनास येते की, या काळात पहिल्या क्रमांकावर महाराष्ट्र राज्यातील डॉ. एस.पी. चव्हाण हे येतात. त्यांनी मार्गदर्शन केलेल्या संशोधक विद्यार्थ्यांची संख्या ही सर्वाधिक 9 (2.8%) आहे. उर्वरित संशोधन मार्गदर्शक अनुक्रमे डॉ. एम. कुंभार 8 (2.49%), डॉ. चेल्लमपंडी 7 (2.18%), डॉ. चिन्नास्वामी के. 6 (1.86%), डॉ. व्ही.टी. कांबळे 5 (1.55%) आणि डॉ. सी.के. शर्मा 5 (1.55%) असे आहेत.

सारांश :

सदरील शोधनिबंधामुळे ग्रंथालय आणि माहितीशास्त्रातील इ.स. १९५० ते २०१२ तसेच इ.स. २०१३ ते २०१७ या कालखंडात भारतातील पहिल्या ५ विद्यापीठातून पीएच.डी. साठी झालेल्या संशोधनांची संख्या व प्रमाण आपण जाणून घेऊ शकलो. तसेच दशक निहाय, विद्यापीठ. निहाय, राज्य निहाय, मार्गदर्शनक निहाय व उपविषय निहाय संशोधन कल (प्रवाह) आपण लक्षात घेतले. त्याचप्रमाणे इ.स. २०१३ ते २०१७ या कालखंडात महाराष्ट्र राज्य संशोधनात दुसऱ्या क्रमांकावर होते. परंतु इ.स. १९५० ते २०१२ मध्ये महाराष्ट्र प्रथम क्रमांकावर होते हे आपणास विसरता येणार नाही. त्याचप्रमाणे Bibliometrics/ Scintometrics/ Webometrics studies या उपविषयावर इ.स. २०१३ ते २०१७ या कालखंडात भारतात सर्वाधिक पीएच.डी. संदर्भात संशोधन झाले असून ती संख्या ४९ इतकी आहे हे स्पष्ट झाले आहे.

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Ancient Sports and Health in India**Dr. Shivanand B. Patil**Director of physical Education and Sports,
Kai. Bapusaheb Patil Ekambekar Mahavidyalaya, Udgir**Abstract:**

This paper explores the intricate relationship between sports and health in ancient India, highlighting their significance in shaping both individual well-being and societal norms. Ancient Indian sports such as Malla-yuddha, archery, and chariot racing were more than mere physical activities; they were deeply intertwined with spiritual, moral, and social values. The study examines how these sports were documented in ancient texts and supported by archaeological evidence, revealing their impact on physical fitness, mental resilience, and community cohesion. The paper also delves into the holistic approach to health in ancient India, where physical fitness, diet, and yoga were integral to daily life. By comparing these practices with those of other ancient civilizations, the paper underscores the enduring legacy of India's ancient sports culture and its relevance to modern health and wellness practices. The findings suggest valuable insights for integrating ancient wisdom into contemporary sports and health disciplines.

Introduction

The role of sports in ancient Indian culture was profound, extending beyond mere physical activity to encompass spiritual, moral, and social dimensions. Sports like Malla-yuddha (traditional wrestling), archery, and chariot racing were not only popular recreational activities but also integral to the training of warriors and the spiritual development of individuals. These activities were deeply embedded in the cultural fabric, often associated with religious ceremonies and rituals, symbolizing strength, discipline, and honour. The significance of health and physical well-being in ancient India was also paramount, with a holistic approach that integrated physical fitness, mental clarity, and spiritual balance. This focus on health was reflected in daily practices, such as yoga and specific dietary regimens, designed to maintain harmony between the body and mind.

This paper aims to explore the various types of ancient sports practiced in India and analyse their impact on health and societal norms. Through a detailed examination of ancient texts, archaeological findings, and historical analysis, the research seeks to uncover the cultural, social, and health-related implications of these sports. The methodology includes a comprehensive literature review and the study of primary sources to provide a well-rounded understanding of the subject.

Ancient Indian Sports

Ancient Indian sports were diverse and rich, reflecting the physical prowess and cultural values of the time. Among the most prominent were Malla-yuddha (wrestling), a sport that combined physical strength with discipline, and was often associated with warriors and kings. Archery was another vital sport, essential for both hunting and warfare, with legendary figures like Arjuna from the Mahabharata epitomizing the ideal archer. Chariot racing, a thrilling sport often depicted in ancient texts, was not only a test of speed but also of strategic skill and bravery. These sports varied across regions, influenced by local customs, geography, and available resources. In the southern regions, for instance, Silambam, a form of martial art, was prevalent, while the northern areas saw a greater emphasis on wrestling and archery.

Sports in ancient India were deeply intertwined with social and religious life. They were not merely recreational but were considered essential for physical and mental training, preparing individuals for the rigors of life, including battle. Religious festivals often featured sports competitions, reinforcing their sacred significance. The Vedas, Mahabharata, and Ramayana contain numerous references to these sports, illustrating their importance in daily life. Archaeological discoveries, such as seals and sculptures, further validate the existence and popularity of these ancient sports. These findings provide a window into how sports were organized, the equipment used, and the societal values they promoted. The integration of sports into religious and social practices highlights their role in fostering a disciplined, resilient, and cohesive society.

Understanding Health in Ancient India

Health in ancient India was viewed as a holistic concept that encompassed physical, mental, and spiritual well-being. Ancient Indian philosophy, as articulated in texts like the Vedas and the Upanishads, emphasized the interconnectedness of body, mind, and spirit. Health was not merely the absence of disease but the harmonious balance between these three aspects of existence. Physical well-being was achieved through a combination of diet, exercise, and daily routines known as *dinacharya*. Nutritional practices were carefully designed to support athletic performance and overall vitality. Foods were categorized based on their effects on the body's *doshas* (vital energies), and a balanced diet was essential for maintaining optimal health.

In addition to diet, daily routines included specific exercises and activities tailored to individual needs and constitutions. Yoga, in particular, played a central role in maintaining physical fitness and mental clarity. As a holistic practice, yoga integrated physical postures, breathing techniques, and meditation to promote balance and well-being. It was also a crucial part of sports training, enhancing flexibility, strength, and focus. The ancient Indian approach to health, therefore, was a comprehensive system that recognized the importance of nurturing all aspects of the self to achieve true wellness and longevity.

Impact on Society

Ancient sports in India played a crucial role in shaping social hierarchies and roles, with their influence extending beyond mere physical activity to reflect and reinforce societal norms. Sports were often a means of demonstrating physical prowess, which could elevate one's social status, particularly among the warrior and ruling classes. However, participation in these sports was not universally accessible; it was often restricted by caste, gender, and class. For example, certain sports were reserved for the Kshatriyas (warrior class), while women and lower castes were frequently excluded or relegated to less prestigious activities.

The moral and ethical values embedded in ancient Indian sports emphasized sportsmanship, discipline, and self-control. These values were not just for personal development but were seen as essential qualities for maintaining social order and harmony. Athletes were expected to embody principles of fairness, respect, and humility, which contributed to the moral fabric of society. Furthermore, the long-term health benefits of these ancient sports practices were significant. Regular participation in physical activities contributed to enhanced physical fitness, mental resilience, and longevity. The holistic approach to health, combining physical exercise with dietary regulations and mental discipline, laid the foundation for a balanced and healthy life, with lasting impacts on overall well-being.

Conclusion:

This study sheds light on the profound connection between sports and health in ancient India, revealing how these practices were not just physical activities but holistic approaches to well-being. The research highlights the role of ancient sports in promoting physical fitness, mental discipline, and social

cohesion, supported by textual references and archaeological evidence. The implications for modern society are significant; the integration of ancient Indian principles, such as the balance of physical and spiritual well-being, into contemporary health and sports programs could enhance modern wellness practices. The study also suggests that further research into lesser-known ancient sports and health practices could provide valuable insights. An interdisciplinary approach, combining historical, cultural, and scientific perspectives, may offer a deeper understanding of how these ancient traditions can be adapted to meet today's health challenges, enriching both sports science and public health.

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The Impact of Use of Artificial Intelligence Tools on Higher Education

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Abstract:

In today's modern era, a new concept of artificial intelligence has emerged. We are going to study the impact of this concept in various fields and the application of this concept in the field of teaching especially in higher education. Because of this, you want to study the changes in assessment skills in higher education as well as its future implications and its contribution to higher education. Because this concept is definitely going to be a boon for the future as well as the society. Because this is going to change the face of education system in higher education. A skilled qualitative personality development will emerge. From this we want to study how much we can influence the education system of the past as well as the present and future education system and its development. For that we are going to see the impact of this concept in the higher education system.

Keywords: AI; Higher education; impact; teaching & Learning.

Introduction:

(AI) is a sophisticated branch of computer science with artificial intelligence which is a sophisticated computer system that acts like human intelligence which has been ambitiously used to conduct various experiments in robotics/auto vehicles/digital classrooms/mobile phones/research work. You want to study how higher education has changed over the past few decades and how the advent of (AI) has impacted higher education.

History:

The history of artificial intelligence (AI) began in [antiquity](#), with myths, stories and rumors of artificial beings endowed with intelligence or consciousness by master craftsmen. The seeds of modern AI were planted by philosophers who attempted to describe the process of human thinking as the mechanical manipulation of symbols. This work culminated in the invention of the [programmable digital computer](#) in the 1940s, a machine based on the abstract essence of mathematical reasoning. This device and the ideas behind it inspired a handful of scientists to begin seriously discussing the possibility of building an [electronic brain](#).

Definition:

Definition of AI: Artificial intelligence (AI) refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, or solving problems.

AI Impact on the Learning and Teaching Process:

The use of (AI) in higher education has given the higher education system a modern as well as a secular status. The difficulties that were faced in the earlier education system are now being removed due to this concept. Enrollment in higher education as well as accuracy in curriculum will increase. AI has brought about a big change in the higher education system because previously education was done face to face in the classroom but now due to the concept of IA we can take education from any place in the world in a digital form outside the classroom. You can see a big change. Imagine a classroom where every student receives personalized attention, where lessons adapt in real-time to suit individual learning styles and paces. This is not the future—it's happening now, thanks to artificial intelligence (AI) in education. Today, over 60% of U.S. educators are harnessing AI tools to revolutionize the way they teach and students learn. These tools are not just about efficiency; they're about enhancing educational outcomes in ways previously unimaginable.

This article will discuss the best 12 AI Tools for Education that are bringing about new standards in individualized and engaging teaching and learning. Education is being transformed by tools that are capable of targeting areas where pupils are not learning and those that create lessons specific to them.

Here's a breakdown of different types of AI tools used in education:

Personalized Learning Tools:	
Adaptive learning platforms:	Adjust materials based on student performance.
Recommendation engines:	Suggest resources based on interests.
AI-powered tutors:	Offer personalized instruction.
Assessment and Feedback Tools:	
Automated grading systems:	Grade assignments.
AI writing assistants:	Provide feedback on grammar and style.
Performance analysis tools:	Analyze student data to predict performance.
Engagement and Support Tools:	
Interactive learning simulations:	Practice skills in a safe environment.
Game-based learning platforms:	Motivate students with gamification.
Accessibility Tools:	
Text-to-speech tools:	Convert text to audio.
Language translation tools:	Translate materials.
Speech recognition tools:	Interact through voice commands.
Administrative Tools:	
Chatbot's:	Answer student questions.
Automated scheduling systems	Manage class schedules.

The Biggest Impact In Higher Education Has Come From The Use of The Following Tools.

Cognii: Cognii is an AI tools for education that helps both in assessment and tutoring. Cognii is one of the best apps for educators and students that also provide insights and analytics. Cognii is an artificial intelligence assistant developed by Dee Kanejiya. It is a handy tool for both educators and scholars.

QuillBot: QuillBot is a popular AI tools for remote learning and online education, among students that not only helps to summarize written text but also provides various features. It consists of various tools like grammar checker, paraphraser, AI writer, etc. You can even generate structured emails, documents and posts. QuillBot was developed by Rohan Gupta who is also it's CEO.

Quizlet: Another efficient AI powered writing tool, is considered as one of the best AI tools for education, developed by Andrew Sutherland, Quizlet helps you make quiz questions, flashcards, practice questions, etc. for better understanding. Quizlet smartly uses the AI technology in producing organized subject matter for memorizing, presentation or exams.

Wolfram / Alpha: created by Wolfram Research is a problem solving AI Tool that solves any question within seconds and is considered as best AI tools for remote learning and online education. Increase knowledge in a particular theme by asking Wolfram questions which will provide you with easy answers and step by step solutions.

Curipod: This AI tool for educators and students can help them create more interactive Lectures and presentations. There are other features in this one of the best AI tools for education, which enhances the work of the user. Curipod develops your critical thinking by producing interactive lessons. It can also

be utilised for translating content. It is also used for meetings and workshops. Curipod was developed by Jens Aarre Seip.

6. ClassPoint AI: ClassPoint AI generates quiz questions through PowerPoint slides. It is extremely useful for both students and teachers. With quiz questions being extremely easy to make you can improve your knowledge in various areas.

7. Geleza: Geleza is an interactive AI tool, considered as one of the best AI tools for student's assignment that helps students to score the highest in their exams. It is a multi-tasking tool that incorporates smart learning with fast learning. Students can also discuss their doubts with other students studying the same topic and theme.

8. Yippity: Yippity is an AI website with learning tools which convert any piece of Information into question and answers and flashcards. It is known to be one of the best AI tools For education, from filling in the bank to multiple choice questions you can develop a diverse range of questions with ease.

9. Khan Academy Khanmigo: Intelligence, considered as one of the best AI Tools For Education, to help student-directed learning, provides quick feedback and has tools for engaging sessions. It is said to be different from the regular AI which is often direct and analytical. It provides solutions to student's queries in various subjects. It can also be used by teachers.

10. Coursebox: Coursebox is an AI course creator, considered as one of the AI tools for education, that helps you create and design a course in under one hour with the guidance of a course editor. Features like event calendar, event management, and knowledge management help in enhancing your course. A fermium plan is also available to help in modifying your course

11. Goodgrade.ai: GoodGrade.ai is an AI-powered tool focused on enhancing educational experiences by assisting with writing essays, finding quotes, and humanizing text. Designed to make students' lives easier, GoodGrade.ai offers robust features that cater to various academic needs, ensuring quality and efficiency in completing assignments.

12. Summarize.tech: Powered by ChatGPT, Summarize.tech, is one of the best AI tools for remote learning and online education, summarizes the given subject matter to get a gist of the theme and topic in video format. Here you can copy the URL link of any YouTube lecture and then get a summary including main key points.

Conclusion:

In this research paper, while teaching and learning in the higher education system, if AI tools are used, then what is the impact on the education system and the use of these tools has made teaching and learning easier. Tools have created a new evolution and will be a boon to mankind. Will be needed.

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Online Platforms for Research and Scholarly Publications

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Abstract:

There are various online research platforms and tools which are very useful for researchers and authors of the scholarly publications. This paper introduces few contemporary online platforms such as Google scholar, ORCID, Research gate, Academia, Scopus and Publons

Keywords: Research, e-research, Google scholar, ORCID, Research gate, Academia, Scopus, publons

Introduction:

Research is about expanding the boundaries of human knowledge. Search services are beneficial for the academic group to direct their attention to content that is more relevant to their needs. A large number of web sites containing potentially relevant information require a search engine of millions of web sites but the ability to target specific types of information. Researchers can easily find relevant works, citations, authors and publications. Create a public author profile and see who is citing your recent publication. This article mainly focuses on online research platforms which are very useful in the recent era of information and technology.

In today's electronic world the important objective of every researcher is to manage various tasks, produce productive results, use time efficiently and document the research i.e. publish it. All this requires a well-planned and organized system, which is achieved by monitoring the progress and collaboration of your projects, finding relevant literature, writing your project proposals, reports and articles, avoiding language errors, citing original sources, networking, researching. Journals etc. for publication. Many online platforms make this task easy for researchers. However, with the plethora of information available online, evaluating what works and what doesn't can become a time-consuming nightmare.

There are various types of online research platforms are available. Some of them are Google scholar, ORCID, Research Gate, Academia.edu, Scopus, Web of Science, and Publon.. These platforms are introduces in the following paragraphs.

1. Google scholar:

Google scholar is a famous and familiar online tool. It is offered for free by Google and is essential for any researcher. Withhaving computer, an internet connection, and a subject for research, generally it include peer-reviewed articles, these, books, different abstract, online repositories.

Google Scholar works just like Google. But it directly links you to only publications in countless academic journals. When using the system, look at the right-hand side of the search results. There, a universal approach has to remain Google's strength, and to achieve its goals Google will need the cooperation of the providers as well as users of academic information. It provides a simple way to broadly search for any material or literature. It is search engine that specializes in searching scholarly literature and academic resources.

The Google Scholar service has the potential to grow if it develops close contacts with both providers and users of academic information. Use of Google Scholar will benefit the authors and managers of open access material, but there are opportunities for all types of academic content providers in the way Google Scholar is set up. Google Scholar should be able to provide such version identification. It may be that the long-term commercial success of Google Scholar will depend on such added-value services.

Google Scholar managers will have to fix their terms because most users will require up-to-date information. These doubts about Google Scholar's value are capable of resolution, given close cooperation between Google Scholar managers and both users and providers of information.

Google Scholar provides a quick way to broadly search for content from location. Look for articles, theses, books, abstracts, and court opinions, from professional societies, online repositories, universities, academic publishers, and other websites.

Features

- Create author page publically
- Look for information across Google's database.
- Easy to use.

Google Scholar is an academic search engine. It allows its users to search all manner of academic literature from journals and white papers to scientific articles and patents. Furthermore, the Google Scholar search facility allows you to set up an alert. This will notify you should a new article or paper be released in your particular field, or from a particular person or institution. This ensures that your research remains on the cutting edge of your field.

2. ORCID:

Generally, ORCID stands for open researcher and contributor ID, it provides a constant digital identifier that you own and control, and that distinguishes us from every other researcher. Is a global, not-for-profit organization sustained by fees from our member organizations? Its vision is a world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributors across disciplines, borders and time. It is unique constant identifier free of charge to researchers. Its aims to provide a persistent code for human.

ORCID's vision is a world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributions across disciplines, borders, and time. In order to realize our vision, ORCID enable transparent and trustworthy connections between

researchers, their contributions, and their affiliations by providing a unique, persistent identifier for individuals to use as they engage in research, scholarship, and innovation activities.

Features

- It works to support the creation of a constant, clear, and obvious record of research. It transcends discipline, geographic, national, and institutional boundaries.
- Membership in ORCID is open for all organization that has an interest in research
- These services will be based on transparent and non-discriminatory conditions posted on the ORCID website.
- Researchers will be able to create, edit, and maintain an ORCID identifier and record for free
- Researchers will be able to control the defined privacy settings of their own record.

3. Research Gate:

The awesome platforms which are freely available for researcher called Research Gate. It gives us access to over millions of research papers allowing you to stay update with what's happening in each and every field. With a built-in community, researchers can share their research, collaborate with peers, and discover new papers and bibliographies.

Till date there are over 20 million researchers from more than 190 countries connecting through Research Gate to share their work. It also allows interactive discussions with researchers on this particular platform. As well track how many people have read or referenced our work. Research Gate also provides deep analytics on who's been reading work and keeps track of citations.

Features

- Share and find researchers.
- Analytics to see who's reading your work.
- Tracking of Citation is possible.

4. Academia.edu:

It is also totally free service. With using academia.edu it is possible to exchange knowledge in effective formats like videos, content, dataset, etc with academics all over the world. Till now over 22 million articles and about 31 million academics, professionals, researchers are active on the platform. Academia.edu's algorithms generate about 20 million article recommendations per day. It is also possible to exchange knowledge in effective format.

5. Scopus:

It is important bibliographic database. Generally it covered the subjects like life sciences, social sciences, health and physical science, It searches through about seventy five million entries, including 194'000 books. You can search by author, document title, or affiliation. It shows the citation rate of almost any article from any discipline. The tool also suggests similar documents by related references, which could accelerate your research. It is user friendly database and One of the important standard unit for measuring the citation impact.

6. Web of Science:

WoS is a multidisciplinary citation database trusted by more than thousands of institutions. It is also used for publication it allows for the historical tracking of research questions in all levels of

knowledge. 9.1 billion Cited references would suffice for the most exigent researcher. Web of Science can be used as a resource to find trusted materials in the public domain. it supports near about 256 disciplines.

Web of science include science citation index, social science citation index, arts and humanities citation index, conference proceeding citation index, book citation index, as well as current chemical reactions index. It basically covers the format like articles, reviews. Editorials, chronologies, journals and book based proceeding, abstract as well as technical papers.

7. Publon:

is a commercial website that provides a free service for researchers to track, verify, and showcase their peer review and editorial contributions for journals. Launched in 2012. It claims that over 3,000,000 researchers have joined the site, adding more than one million reviews across 25,000 journals. Researcher was integrated with Publons. It produces a verified record of a person's review and editorial activity for journals, which can be downloaded to include in CVs, funding and job applications, and promotion and performance evaluations. Publons' business model is based on partnering with publishers.

Conclusion:

From above explanation it can concluded that these platforms are very useful. These platforms help in increasing productivity by saving time. Data is instantly available and can easily be transferred into specialized statistical software when more detail analysis is needed. These databases are useful to know how effective or impactful our publications are among our field.

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Impact of National Education Policy (NEP) 2020 on Library and Information Science: An All-Inclusive Research

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Abstract

In India, the National Education Policy (NEP) 2020 brings about big changes in many areas of education. The effects of NEP-2020 on the field of Library and Information Science (LIS) are looked at in this study. Changes to the curriculum, new technologies, multidisciplinary approaches, research, building up infrastructure, and professional training are some of the main areas of attention. The analysis shows that the policy brings both possibilities and problems.

Key word- NEP-2020, LIS, National Education Policy,

1. Introduction

1.1 Background of NEP-2020: Overview of NEP-2020

The Government of India recently put in place the National Education Policy (NEP) 2020. This is the first major change to the Indian education system since 1986. The goal of this strategy is to change Indian education so that it is more modern, flexible, and multidisciplinary, and fits the needs of the 21st century. By making sure that everyone gets a good education, NEP 2020 wants to create an education system that helps build a fair and active knowledge society.

The policy's core objectives include universalization of education from preschool to secondary level, emphasis on early childhood care and education, introduction of a new curricular structure, integration of vocational education, and a shift towards a more student-centric learning environment. NEP 2020 also stresses how important technology is in education for helping students learn how to think critically, be creative, and solve problems.

One important thing about NEP 2020 is that it focuses on learning throughout life and knows how important Library and Information Science (LIS) is to achieving this goal. Libraries are envisaged as central to the educational ecosystem, playing a vital role in nurturing a culture of reading, research, and continuous learning. This policy, therefore, has significant implications for the field of Library and Information Science, calling for an analysis of how it will impact the roles, structures, and functions of libraries and information centers across the country.

In this context, a comprehensive analysis of the impact of NEP 2020 on Library and Information Science is essential to understand how this policy will shape the future of libraries, librarians, and the broader information management sector in India. This analysis will explore the challenges and opportunities presented by NEP 2020, and how the field of Library and Information Science can adapt to and thrive in this new educational landscape.

1.2 Significance of LIS:

Library and Information Science (LIS) is a critical field that plays a foundational role in the creation, organization, management, and dissemination of information. As an interdisciplinary domain, LIS encompasses the practices and tools that ensure information is accessible, organized, and preserved for current and future generations. In an educational context, LIS professionals contribute to the intellectual growth of individuals by facilitating access to knowledge resources, promoting information literacy, and supporting research activities.

In the broader sphere of information management, LIS professionals are pivotal in curating vast amounts of data, making it usable and accessible to various stakeholders. Whether in academic libraries, public libraries, or specialized information centers, LIS practitioners are responsible for navigating the complexities of the digital age, where information is abundant yet requires careful management to avoid misinformation and ensure equitable access.

The significance of LIS extends beyond traditional library settings. It involves a strategic approach to information systems and services, playing a crucial role in supporting educational initiatives, lifelong learning, and informed decision-making processes. By managing information efficiently, LIS professionals enable educators, students, researchers, and the public to access and utilize information in ways that enhance knowledge and drive innovation.

As the National Education Policy (NEP) 2020 introduces transformative changes to the Indian education system, the role of LIS becomes even more vital. The policy's emphasis on digital literacy, research, and inclusive education aligns closely with the objectives of LIS, positioning it as a key player in the realization of NEP's goals. This analysis explores how the NEP 2020 impacts the LIS field, highlighting its expanded responsibilities in the new educational landscape.

1.3 Purpose of the Paper: This paper aims to analyze the impact of NEP 2020 on the field of Library and Information Science (LIS). The analysis will explore how the policy influences education, practice, and research within LIS, assessing the potential opportunities and challenges it presents. The paper will also consider the broader implications for the role of libraries in supporting the NEP's goals, particularly in promoting digital literacy, lifelong learning, and equitable access to information.

2. Curriculum Reforms

2.1 Emphasis on Digital Literacy:

- NEP 2020 highlights the critical importance of digital literacy in the modern educational landscape. As information increasingly moves online and the digital divide becomes more apparent, the need for LIS professionals who are well-versed in digital tools and resources has grown exponentially.
- Digital literacy now encompasses not only the ability to use digital devices and software but also the capacity to navigate, evaluate, and create information across a variety of digital platforms. This broader understanding of digital literacy is crucial for LIS professionals who must manage both physical and digital information repositories.

2.1.2. Impact on LIS Curricula:

- **Introduction of Courses on Digital Resources:** NEP 2020 has led to the inclusion of specialized courses in LIS programs that focus on digital resources. These courses cover topics such as the management of electronic databases, digital archiving, and the use of online information retrieval systems.
- **Information Technology Integration:** Information technology has become a core component of LIS curricula under NEP 2020. This includes training in database management systems, software applications relevant to libraries (such as integrated library systems), and digital content management.
- **Courses on Electronic Databases:** A specific emphasis is placed on the management and utilization of electronic databases. This includes training in the use of academic databases, digital libraries, and the various tools required for efficient digital information retrieval and management.
- **Incorporation of Emerging Technologies:** The policy encourages the incorporation of emerging technologies like artificial intelligence, machine learning, and data analytics into LIS education. These technologies are crucial for modern information management, including tasks like predictive cataloging, personalized information services, and big data management.

2.1.3. Practical Implications:

- **Skill Enhancement:** The integration of digital literacy into the LIS curriculum enhances the skill set of graduates, making them more adaptable and competent in handling digital resources. This shift also makes LIS professionals better equipped to support digital transformation initiatives within their organizations.
- **Improved Employment Prospects:** Graduates with strong digital literacy skills are in higher demand in the job market. This is particularly true in sectors like digital libraries, information technology companies, and academic institutions that are rapidly digitizing their resources.

- **Lifelong Learning:** NEP 2020's emphasis on digital literacy also aligns with the policy's broader goal of promoting lifelong learning. LIS professionals are encouraged to continuously update their skills to keep pace with the rapidly changing digital landscape.

2.2.1 Integration of Emerging Technologies:

- The updated curriculum now places a strong emphasis on incorporating emerging technologies such as Artificial Intelligence (AI), Machine Learning (ML), and Big Data. These technologies are transforming how information is managed, retrieved, and used, making it essential for LIS professionals to be adept in these areas.

2.2.2. Focus on Data Science:

- Data science has become a critical component of the new LIS curriculum. Students are now trained in data analytics, data management, and data curation. This equips them with the skills necessary to handle the vast amounts of information generated in the digital age, making them valuable assets in various sectors.

3. Information Retrieval Techniques:

3.1. Integration of Technology in Information Retrieval

- **Digital Libraries and Repositories:** NEP 2020 emphasizes the digitization of educational resources, promoting the creation of digital libraries and repositories. This will require advancements in information retrieval techniques to efficiently manage and access large volumes of digital content.
- **AI and Machine Learning:** The policy encourages the adoption of AI and machine learning in educational practices. In LIS, these technologies can enhance information retrieval by providing more accurate and contextually relevant search results, as well as personalized recommendations for users.

3.2. User-Centric Information Retrieval

- **Focus on Multilingual Access:** NEP 2020 promotes multilingual education, which necessitates the development of information retrieval systems that can handle and provide access to content in multiple languages. This will require sophisticated language processing tools and translation technologies.
- **Personalized Learning Experiences:** With the policy's emphasis on personalized learning, there's a growing need for information retrieval systems that can adapt to individual learning needs and preferences. This might include personalized search algorithms that consider a user's history, interests, and educational background.

3.3. Information Literacy and Skills Development

- **Critical Information Literacy:** NEP 2020 highlights the importance of critical thinking and information literacy as key skills for students. This implies a need for information retrieval systems that not only provide information but also assist users in evaluating the credibility and relevance of the information they retrieve.
- **Training and Education in LIS:** The policy's emphasis on holistic and multidisciplinary education means that LIS professionals will need to be trained in advanced information retrieval techniques. This includes understanding the latest technologies and being able to guide users in effectively finding and using information.

3.4. Open Educational Resources (OER)

- **Access and Retrieval of OER:** The policy advocates for the widespread use of Open Educational Resources (OER). Efficient information retrieval techniques will be crucial for students and educators to access and utilize these resources effectively. This may involve developing specialized search engines or platforms tailored to OER content.

3.5. Collaboration and Knowledge Sharing

- **Interdisciplinary Collaboration:** NEP 2020 encourages interdisciplinary learning and research, which in turn demands information retrieval systems that can cater to diverse fields and facilitate cross-disciplinary knowledge sharing.
- **Networking of Libraries:** The policy supports the networking of libraries, which will require advanced retrieval techniques to ensure seamless access to a wide array of resources across different institutions.

3.6. Ethical Considerations in Information Retrieval

- **Data Privacy and Security:** As information retrieval systems become more sophisticated, concerns about data privacy and security grow. NEP 2020's focus on ethical considerations in technology use will necessitate the development of secure information retrieval methods that protect user data.
- **Bias in Information Retrieval:** The policy's emphasis on equity and inclusivity also extends to technology, highlighting the need to address potential biases in information retrieval algorithms that could disadvantage certain groups of users.

4. User Experience (UX) Design:

4.1. Emphasis on Digital Libraries and Online Resources

With the NEP 2020 promoting digital literacy and online learning, libraries are increasingly shifting from physical spaces to digital platforms. This transition necessitates an enhanced

focus on UX design to ensure that users can efficiently access, navigate, and utilize digital resources. Libraries must prioritize intuitive, user-friendly interfaces that cater to diverse user groups, including students, educators, and researchers.

4.2 Integration of Technology and AI

NEP 2020 encourages the integration of advanced technologies, including Artificial Intelligence (AI), in education. In LIS, this could lead to the development of smart libraries where AI-driven tools personalize the user experience. For instance, AI can recommend resources based on user preferences or previous searches, making information retrieval more efficient. UX design in this context must focus on creating seamless interactions between users and AI systems, ensuring the technology enhances rather than complicates the user experience.

4.3 Inclusivity and Accessibility

The policy underscores the importance of inclusive education, which extends to library services. UX design in LIS must therefore consider accessibility for all users, including those with disabilities. This involves implementing features like screen readers, easy navigation for visually impaired users, and multilingual support to cater to diverse linguistic backgrounds. NEP 2020's emphasis on equity in education means that libraries must ensure their digital platforms are accessible to everyone, regardless of their physical or linguistic abilities.

4.4 User-Centered Design Approach

NEP 2020 encourages the adoption of learner-centric approaches, which can be mirrored in LIS through user-centered design. This approach involves engaging users in the design process, gathering feedback to continuously improve library systems and services. By prioritizing the needs and preferences of users, libraries can create more engaging and effective digital environments, enhancing the overall learning experience.

4.5 Training and Capacity Building

The NEP 2020's focus on professional development extends to LIS professionals, who must be equipped with the skills to design and manage user-centric digital libraries. This includes training in UX design principles, understanding user behavior, and utilizing tools for creating and testing user interfaces. Continuous capacity building in UX design will enable LIS professionals to keep pace with technological advancements and evolving user expectations.

4.6 Evaluation and Feedback Mechanisms

To align with NEP 2020's goals of quality and accountability in education, UX design in LIS should incorporate robust evaluation and feedback mechanisms. Regular assessments of user satisfaction and usability of library systems can help identify areas for improvement.

Feedbacks loops ensure that user needs are consistently met, leading to higher engagement and better resource utilization.

5. Methodological Shifts:

- **Interdisciplinary Approaches:** The NEP 2020 advocates for a more interdisciplinary approach in LIS studies, which encourages the integration of diverse perspectives. Traditionally, LIS focused primarily on the management of information resources. However, the revised curriculum now stresses the importance of incorporating insights from fields such as computer science, cognitive psychology, and sociology. This shift is designed to equip students with a broader understanding of how information interacts with technology, human cognition, and societal structures.
- **Integration of Technology:** Another methodological change is the enhanced focus on technology within LIS. The integration of computer science is particularly significant, as it prepares students to engage with modern information systems, digital libraries, and data analytics. This aligns with the NEP's broader goal of fostering digital literacy and ensuring that graduates are proficient in the use of cutting-edge technologies.
- **Cognitive and Social Dimensions:** Incorporating cognitive psychology into the LIS curriculum allows for a deeper exploration of how users interact with information, enhancing user-centered design and information retrieval systems. Similarly, integrating sociological perspectives helps students understand the social implications of information access and dissemination, particularly in the context of equity and inclusivity, which are core principles of the NEP 2020.
- **Research Methodology:** The NEP 2020 also promotes an emphasis on research methodologies that are more suited to interdisciplinary studies. This includes qualitative and quantitative research methods, mixed methods approaches, and the use of big data in research. The goal is to produce graduates who are not only capable of conducting rigorous research but also able to apply their findings in practical, real-world contexts.

6. Multidisciplinary Approach

The National Education Policy (NEP) 2020 emphasizes the importance of multidisciplinary learning in Library and Information Science (LIS) education. It encourages the integration of computer science, management principles, and social sciences into LIS programs. Computer science courses are essential for students to handle digital technologies and contribute effectively to digital libraries. Management courses develop skills in organizational management, strategic planning, and resource allocation. Social sciences courses enhance students' understanding of human behavior, information-seeking patterns, and social contexts. NEP-2020 encourages interdisciplinary research and collaborative projects, fostering innovative research projects that address complex problems at the intersection of information science and other domains. These projects can range from developing new information systems to conducting community-based research. Engaging in interdisciplinary research

enriches students' learning experiences, preparing them for diverse career paths and real-world problem-solving.

7. Research and Innovation

The National Education Policy (NEP) 2020 places a strong emphasis on the value of interdisciplinary learning in the teaching of library and information science (LIS). It promotes the incorporation of social sciences, computer science, and management ideas into LIS programs. To efficiently handle digital technology and contribute to digital libraries, students must take computer science courses. Strategic planning, resource allocation, and organizational management are all developed in management courses. Students' comprehension of social situations, information-seeking behaviors, and human behavior is improved by social science courses. NEP-2020 promotes multidisciplinary research and cooperative initiatives, resulting in creative research endeavors that tackle intricate issues at the nexus of information science and other fields. These initiatives can include everything from creating brand-new information systems to carrying out research in local communities. Students' learning experiences are enhanced when they participate in multidisciplinary research, which equips them for a variety of career options and real-world problem-solving.

8. Library Infrastructure and Access

The National Education Policy 2020 (NEP 2020) promotes a multidisciplinary approach to education, focusing on LIS education. This includes integrating courses from computer science, management, and social sciences to enhance curricula and prepare students for a wider range of professional skills. This approach encourages LIS departments to engage in collaborative projects and research, leading to innovative solutions and better perspectives. The NEP 2020 also focuses on modernizing educational infrastructure, investing in technology, improving physical spaces, and enhancing access to resources. Digital libraries and e-resources enable remote access to materials, promoting educational equity and inclusivity. These aspects contribute to a more integrated, technologically advanced, and accessible library and information science education, aligning with broader educational goals and societal needs.

9. Professional Training and Skill Development

The National Education Policy (NEP 2020) focuses on skill-based learning, collaboration with industry experts, and the development of soft skills. It encourages vocational training and hands-on training in LIS programs, incorporating emerging technologies like artificial intelligence and data analytics. The policy also advocates for lifelong learning through professional development opportunities, including certification programs and workshops. The policy also promotes a multidisciplinary approach, integrating knowledge from related disciplines like computer science, management, and social sciences. The NEP also suggests reforms in assessment and evaluation methods to better gauge student learning and skill acquisition. This aligns with the NEP 2020 vision, preparing graduates for the rapidly changing landscape of information management.

10. Community Engagement and Outreach

The National Education Policy 2020 (NEP 2020) promotes a multidisciplinary approach to education, integrating courses from computer science, management, and social sciences into LIS curricula. This can enhance technological competencies, management skills, and social science insights. It also encourages interdisciplinary research and collaboration, allowing LIS departments to collaborate with other academic disciplines. The policy also emphasizes libraries as community hubs, offering services like digital literacy programs and vocational training. Libraries are also involved in local development projects, providing resources and support for various community needs. The policy also encourages the development of outreach programs to enhance information access and promote lifelong learning. Overall, NEP 2020 enhances the educational framework within LIS and its role in societal development.

11. Policy and Governance

The National Education Policy (NEP-2020) promotes a multidisciplinary approach to education, focusing on computer science, management, and social sciences. This approach aims to develop cross-disciplinary skills, such as data analytics, information technology, and digital systems, for Library and Information Science (LIS) students. It also encourages interdisciplinary collaboration, allowing LIS departments to address complex problems and develop new information systems. The policy also establishes national standards and guidelines for libraries, ensuring consistency and quality. Implementation of these policies includes ensuring libraries comply with updated regulations on information access, digital rights and privacy, and adapting to new regulations. This comprehensive approach modernizes LIS education and services, fostering a more integrated, collaborative, and regulated library environment.

12. Challenges and Opportunities

The National Education Policy 2020 (NEP 2020) presents both challenges and opportunities for Library and Information Science (LIS). Challenges include inadequate funding for curriculum changes and infrastructure upgrades, as well as skill gaps in acquiring new skills for integrating interdisciplinary approaches and technologies. Opportunities include enhanced library services, interdisciplinary research, and increased funding for interdisciplinary projects. Professional development opportunities include skill enhancement, career advancement, and community outreach. By addressing these challenges and leveraging opportunities, LIS institutions can adapt to the NEP 2020 and enhance their role in the educational and research landscape. By addressing these challenges and leveraging opportunities, LIS institutions can adapt to the policy and enhance their role in the educational and research landscape.

13. Conclusion

The National Education Policy (NEP) 2020 has significantly impacted Library and Information Science (LIS) education and practice by promoting multidisciplinary learning, flexible curriculum design, and skill development. It has expanded the scope of LIS programs, enhancing the relevance of LIS education and equipping students with diverse skills. The policy encourages collaborative projects and research, promoting innovation and solutions to complex information management challenges. The inclusion of technology and data science principles in LIS curricula reflects a trend towards digital literacy and technological competence. Future directions include curriculum integration, interdisciplinary research, professional development, and policy and practice alignment. By focusing on these areas, the LIS field can adapt and thrive in a rapidly changing information environment.

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THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON HIGHER EDUCATION

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ABSTRACT

This article explores the influence of Artificial Intelligence (AI) on higher revolutionize the way universities deliver education and how the IT industry operates. The finding suggest that AI can enhance teaching and learning experiences, streamline administrative process and open up new revenue streams for universities.

Keywords : *Artificial Intelligence, higher education*

Introduction :

Education is one the evolving sectors in the world. Higher education will have to take a leap forward to keep up with the face of ever changing world environment. This is exactly where Artificial Intelligence (AI) will have a role to play.

Artificial Intelligence (AI) has been a topic of growing interest and investigation in various fields, including higher education. This article explores the impact of AI on higher education by examining its effects on teaching and learning, assessment, ethics required skills and future careers.

The results of the study demonstrate the crucial role of AI in the future of higher education. The finding highlight the effectiveness and efficiency of AI in equipping graduates with new skills for their future careers.

This study highlights the significance of AI in higher education because it is a topic of intense debate and experimentation. AI is changing higher education, so it's important to provide students with clear definitions of the skills they need to learn to be prepared for a career in AI.

The Concept of Artificial Intelligence

The definition of Artificial intelligence is the creation of computer systems that can carry out tasks that would typically need human intelligence by using reasoning, logic and decision making.

The future of AI in education:

As technology continues to evolve, AI is expected to play an increasingly important role in the education. Some emerging trends in the use of AI education included.

Adaptive Learning's:

AI will enable the creation of adaptive learning systems that automatically adjust to each student's skill level and knowledge. AI system analyze data from student interactions to identify strengths, weaknesses and learning gaps. This information is used to customize the learning path, providing targeted resources and experiences that help students master concepts more effectively.

Virtual Learning:

AI – based virtual assistants will become learning companions for students, providing support, answering questions and offering real-time guidance.

Collaboration and Teamwork:

AI will also facilitate collaboration and teamwork among students. AI tools will be able to analyze each student working style and skills from complementary teaching-learning effective.

There are lots of administrative tasks required in an education setting has a major advantage. AI powered administrative tools can automate the most time consuming processes, which can help to improve the efficiency of various departments within schools and colleges.

Role of AI in Higher Education:

AI is not just a tool for students, it's also an empowering for educators. By providing data-driven insights, fostering collaboration in research. AI driven projects provide supportive input for the both students and educators. It causes the instructors to screen the performance of the students and empower them improve the guidance that they give for the students.

AI frameworks in schools have changed the manner in which in which students find and cooperative with coordinated innovation.

Artificial Intelligence enables higher education services to become easily accessible with extraordinary speed, not only the classroom but also outside the classroom.

AI is one of six technologies with a strong potential for influence in higher education that are mentioned in the Horizon Study 2020.

Importance of AI in higher education:

AI plays a significant role in increasing administrative efficiency in higher education by automating tasks, personalizing education experiences and analyzing data to improve overall efficiency. This advancement can lead to time and cost saving for educational institutions.

Conclusion

The integrating of AI in higher education is not just a trend; it is a revolution that's reshaping the way we learn and teach from personalized learning pathways and intelligent student support systems to data driven insights for teachers and streamlined administrative process, AI is transforming every aspects of the academic journey.

AI has a vast potential support for teaching and learning in higher education. Adoption and implementation of AI in higher education is late in comparison to the corporate sector, many companies.

This study also reveals that though the future prospectus of artificial intelligence in higher education institutes are very high and it holds lot of possibilities in this field.

AI will become a turning point in their learning methodology to be sure that it will benefit students, teachers as well as the institutes. Higher education institutes are required to train and develop their students to upgrade them to face the challenge of the AI revolution and fight successfully in the AI age.

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डिजिटल (आभासी) साक्षरतेला प्रोत्साहन देण्यात ग्रंथालयांची भूमिका

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सार :-

प्रस्तुत संशोधनपर लेखात संशोधकाने डिजिटल (आभासी) साक्षरतेला प्रोत्साहन देण्यात ग्रंथालयांची भूमिका कोणकोणत्या प्रकारे असायला पाहिजे याबाबत विवेचन केले आहे. 21 व्या शतकात डिजिटल साक्षरतेला चालना देण्यासाठी ग्रंथालयांच्या भूमिकेचा अभ्यास करण्याचा हा शोधनिबंध आहे. 21 व्या शतकात, डिजिटल साक्षरता हे शिक्षण, कार्यशक्ती आणि दैनंदिन जीवनात यश मिळवण्यासाठी एक महत्त्वपूर्ण कौशल्य बनले आहे. संगणक वर्ग, तंत्रज्ञान कार्यशाळा आणि डिजिटल संसाधनांमध्ये प्रवेश यासारख्या उपक्रमांद्वारे ग्रंथालये उपभोक्त्यांना वाढत्या डिजिटल युगात सक्षम बनवण्याचे कार्य करतात. ग्रंथालयातील कर्मचारी वर्ग, ग्रंथालयामध्ये येणारे वाचक हे एकत्रितपणे त्यांच्या डोक्यातील कल्पना, विचार सामायिक करू शकतात तसेच ते एकमेकांकडून माहितीचे आदान प्रदान करू शकतात आणि या माध्यमातून डिजिटल साक्षरतेचा प्रवास समृद्ध होतो. 21 व्या शतकात यशस्वी होण्यासाठी व्यक्तींना आवश्यक असलेल्या साधनांसह सुसज्ज करण्यात डिजिटल साक्षरतेला चालना देण्यासाठी ग्रंथालयांची भूमिका सर्वात महत्वाची आहे. आजचा समाज डिजिटल तंत्रज्ञानावर अधिक प्रमाणात अवलंबून असल्याने डिजिटल साक्षरतेला चालना किंवा प्रोत्साहन देण्यासाठी ग्रंथालयांची भूमिका अधिक महत्वाची ठरते.

शोध संज्ञा :- डिजिटल साक्षरता, तंत्रज्ञान कार्यशाळा, 21 वे शतक व ग्रंथालयाची भूमिका

प्रस्तावना :-

ग्रंथालये ही पारंपारिकपणे अध्ययन करण्याची आणि माहितीची केंद्रे आहेत तसेच 21 व्या शतकात डिजिटल साक्षरतेला चालना देण्यासाठी त्यांची मोलाची भूमिका आहे. डिजिटल साक्षरता म्हणजे माहितीचा शोध घेणे, माहितीचे मूल्यमापन करणे, माहिती वापरण्याची क्षमता निर्माण करणे आणि डिजिटल माहिती नैतिकतेने व प्रभावीपणे तयार करणे होय. ई-ग्रंथ, ऑनलाईन डेटाबेस आणि डिजिटल संग्रहण हे वापरकर्त्यांना डिजिटल साक्षरता कौशल्ये विकसित करण्यात मदत करू शकतात. देशाच्या व वाचकांच्या समृद्धीसाठी डिजिटल साक्षरता खूप महत्वाची आहे. डिजिटल म्हणजे डेटा होय आणि साक्षरतेचे प्रतिकात्मक प्रतिनिधित्व म्हणजे योग्यरित्या लिहिण्यासाठी व ज्ञान प्राप्त करण्यासाठी वाचण्याची क्षमता आणि लिखित शब्दाबद्दल गंभीरपणे विचार करणे म्हणजे डिजिटल साक्षरता होय. यात स्मार्ट फोन, टॅब्लेट, लॅपटॉप आणि डेस्कटॉप पीसी इ.

साधनांच्या माध्यमातून लोक कशी माहिती शोधतात, उपयोगात आणतात, सारांशीकरण करणे, मूल्यमापन करणे इ. चा समावेश होतो. ग्रंथालये त्यांच्या संग्रहाद्वारे डिजिटल साक्षरतेला प्रोत्साहन देऊ शकतात. ते पुस्तके आणि ऑनलाइन ट्यूटोरियल यांसारखी डिजिटल साक्षरता कौशल्ये शिकवणारी संसाधने प्रदान करू शकतात आणि ते डिजिटल साक्षरतेवर लक्ष केंद्रित करणारे कार्यक्रम देखील देऊ शकतात. संसाधने, तंत्रज्ञान आणि प्रशिक्षणाद्वारे शिक्षण या माध्यमातून लोकांना किंवा उपभोक्त्यांना जगामध्ये प्रभावीपणे आणि नैतिकतेने माहितीचा शोध, प्राप्ती इ. कौशल्ये विकसित करण्यासाठी ग्रंथालये मदत करतात.

डिजिटल साक्षरता म्हणजे काय ? :-

1) ए.एल.ए. माहिती तंत्रज्ञान कार्यालयाची व्याख्या :

“डिजिटल साक्षरता म्हणजे डिजिटल माहिती समजून घेण्यासाठी, मूल्यमापन करण्यासाठी, तयार करण्यासाठी आणि संप्रेषण करण्यासाठी माहिती आणि संप्रेषण तंत्रज्ञान वापरण्याची क्षमता ज्यासाठी दोन्ही संज्ञानात्मक तांत्रिक कौशल्ये प्रदान करणे किंवा निर्माण करणे होय”.

2) गिल्स्टर यांनी डिजिटल साक्षरतेची व्याख्या पुढीलप्रमाणे केली आहे

“जेव्हा माहिती संगणकाद्वारे सादर केली जाते तेव्हा ती विविध स्रोतांमधून प्राप्त केलेली असते. अनेक स्वरूपातील माहिती समजून घेण्याची आणि वापरण्याची क्षमता तसेच, माहितीचे गंभीरपणे मूल्यांकन करण्याची क्षमता आणि ही माहिती वेगवेगळ्या वास्तविक जीवनातील संदर्भांमध्ये कशी उपयोगात आणावी याबद्दल निर्णय घेण्याची क्षमता म्हणजे डिजिटल साक्षरता होय.”

डिजिटल साक्षरतेचे प्रकार :-

डिजिटल साक्षरतेमध्ये अनेक कौशल्यांचा समावेश असून याचे मुख्य 5 प्रकार अत्यंत महत्वाचे आहेत.

1) **माहिती साक्षरता:** या प्रकारात डिजिटल माहिती शोधण्याची, मूल्यमापन करण्याची आणि गंभीरपणे वापरण्याची क्षमता समाविष्ट आहे. यात इंटरनेटद्वारे माहिती शोधणे, विश्वासासार्ह स्रोत ओळखणे आणि प्रभावी ऑनलाइन संशोधन करणे या कौशल्यांचा समावेश आहे.

2) **मीडिया साक्षरता:** मीडिया साक्षरता या प्रकारामध्ये प्रतिमा, व्हिडिओ आणि ऑनलाइन लेखांसह डिजिटल मीडियाचे विविध प्रकार समजून घेण्यावर आणि त्याचा अर्थ लावण्यावर लक्ष केंद्रित करते. मीडिया साक्षरता कौशल्य असलेल्या व्यक्ती व्हिज्युअल (दिसणाऱ्या बाबी) सामग्रीचे विश्लेषण करू शकतात, संभाव्य पूर्वग्रह ओळखू शकतात आणि विविध माध्यम स्वरूपांमध्ये सादर केलेल्या माहितीच्या विश्वासासार्हतेचे मूल्यांकन करण्याचे कौशल्य मिळते.

- 3) **संप्रेषण आणि सहयोग:** डिजिटल संप्रेषण साधनांमध्ये प्राविण्यता आवश्यक आहे. यामध्ये ईमेल, मेसेजिंग ॲप्स आणि सहयोगी प्लॅटफॉर्मचा प्रभावी वापर समाविष्ट आहे. ही कौशल्ये असलेल्या व्यक्ती डिजिटल साधनांचा वापर करून स्पष्टपणे संवाद साधू शकतात आणि इतरांना डिजिटल साक्षरतेबाबत मदत आणि जागरूक बनवण्याचे कार्य करतात.
- 4) **सायबरसुरक्षा जागरूकता:** या प्रकारच्या डिजिटल साक्षरतेमध्ये ऑनलाइन सुरक्षा पद्धती समजून घेणे, संभाव्य सायबर धोके ओळखणे आणि वैयक्तिक माहितीचे संरक्षण करणे हे समाविष्ट आहे. यामध्ये सुरक्षित पासवर्ड पद्धतींचे ज्ञान, फिशिंगचे प्रयत्न ओळखणे आणि डिजिटल सुरक्षा राखणे यांचा समावेश होतो.
- 5) **कोडिंग आणि संगणकीय बाबींचा विचार:** डिजिटल साक्षरतेच्या या प्रकारामध्ये कोडिंग कौशल्ये आणि संगणकीय विविध बाबींचा विचार यांचा समावेश होतो. या प्रकारामध्ये प्रोग्रामिंग भाषांची मूलभूत माहिती, तार्किक समस्या सोडवणे आणि डिजिटल अल्गोरिदम तयार करण्याची आणि समजून घेण्याची क्षमता समाविष्ट आहे.

एकूणच डिजिटल साक्षरतेच्या वरील 5 प्रकारांच्या माध्यमातून उपभोक्त्यांना डिजिटल माहिती जबाबदारीने शोध घेणे, प्रभावीपणे संवाद साधण्यासाठी आणि डिजिटल जगामध्ये सकारात्मक योगदान देण्यासाठी सक्षम बनवण्याचे कार्य करते.

डिजिटल साक्षरता प्रदान करण्यात ग्रंथालयांची भूमिका :-

ग्रंथालये डिजिटल साक्षरता प्रदान करण्यात आघाडीवर असल्याचे दिसून येतात. आजच्या सातत्याने विस्तारणाऱ्या डिजिटल काळामध्ये माहिती शोधणे व ती प्राप्त करणे यासाठी आवश्यक असणारी कौशल्य वाचकांना किंवा उपभोक्त्यांना किंवा व्यक्तींना प्रदान करण्यात ग्रंथालये महत्वाची भूमिका बजावतात. साखळदंडामध्ये बांधलेले ग्रंथालये ते आभासी ग्रंथालये एवढ्या मोठ्या प्रमाणात ग्रंथालयांमध्ये बदल आजच्या २१ व्या शतकात झालेला दिसून येतो. आजच्या युगामध्ये डिजिटल साधने आणि माहिती तंत्रज्ञानामध्ये कौशल्य प्राप्त करणारी व्यक्ती असणे आवश्यक झाले आहे. माहिती तंत्रज्ञान, इंटरनेट, इंटरनेट जुळणी तसेच विविध स्तरानुसार कौशल्य मिळवणे आवश्यक असतात व हे कौशल्ये विनामूल्य प्रदान करण्याचे कार्य ग्रंथालयाद्वारे केले जाते. ग्रंथालये ही एक डिजिटल साक्षरतेबाबत आधारस्तंभ म्हणून कार्य करत असल्याचे आढळून येते.

1) ग्रंथालये लोकांना तंत्रज्ञानाचा शोध घेण्यासाठी आणि प्रयोग करण्यासाठी सुरक्षित आणि स्वागतार्ह ठिकाण म्हणून काम करू शकतात. प्रामुख्याने वृद्ध व प्रौढांसाठी किंवा तंत्रज्ञानाचे ज्ञान प्राप्त नसलेल्या लोकांसाठी डिजिटल साक्षरता महत्वाची ठरते.

- 2) डिजिटल साक्षरता ही लोकांबरोबरच शिक्षक आणि कर्मचारी वर्गात वाढत्या प्रमाणात महत्वाची होत असताना दिसून येते. ग्रंथालये विद्यार्थ्यांना आणि नोकरी शोधणाऱ्यांना यशस्वी होण्यासाठी आवश्यक असलेली डिजिटल कौशल्ये विकसित करण्यात मदत करण्यासाठी संसाधने आणि प्रशिक्षण देऊ शकतात.
- 3) डिजिटल साक्षरतेला चालना देण्यासाठी ग्रंथालये इतर संस्थांसोबत भागीदारी करू शकतात. उदा. ते प्रशिक्षण आणि तंत्रज्ञानात प्राविण्य प्राप्त करून देण्यासाठी शाळा, समुदाय केंद्रे आणि स्थानिक व्यवसायांशी सहयोग करू शकतात.
- 4) माहितीचा अधिक प्रमाणातील साठा हा आजच्या माहितीच्या युगात, डिजिटल सामग्रीचे गंभीरपणे मूल्यांकन आणि माहिती शोधण्याची क्षमता असणे आजच्या युगात अधिक महत्त्वपूर्ण आहे. ग्रंथालये या संदर्भात विश्वसनीय मार्गदर्शक म्हणून काम करतात. माहिती साक्षरता कार्यक्रम आणि उपक्रमांद्वारे, ग्रंथालये उपभोक्त्यांना ऑनलाइन माहितीची अचूकता, अधिकार आणि प्रासंगिकतेचे मूल्यमापन करण्यासाठी कौशल्याने सुसज्ज बनवतात व त्यांना माहितीपूर्ण निर्णय घेण्यास आणि जबाबदारीने माहिती शोधण्यास सक्षम करतात.
- 5) आजच्या डिजिटल युगात इतिहास आणि संस्कृती यांचे जतन करण्यात ग्रंथालये महत्वाची भूमिका बजावू शकतात. ते भविष्यातील पिढ्यांसाठी उपलब्ध असल्याची खात्री करून, वेबसाइट्स, ब्लॉग आणि सोशल मीडिया पोस्ट यासारख्या डिजिटल सामग्री गोळा आणि संग्रहित करू शकतात व वारसारूपाने पुढील पिढीला माहितीचे आदान प्रदान करण्यासाठी उपयुक्त ठरतात.
- 6) ग्रंथालये विशेष डिजिटल संसाधनांची माहिती वाचकांना देण्यासाठी मदत करतात जी माहिती इतर ठिकाणी सहजपणे उपलब्ध होत नसते. उदा. ग्रंथालयांकडे विशेष डेटाबेसेसची सदस्यता असू शकते किंवा दुर्मिळ डिजिटल संग्रह हाताळण्याची उपभोक्त्यांना किंवा संशोधकांना परवानगी दिली जाते.
- 7) ग्रंथालये डिजिटल साधनांच्या निर्मितीचे आणि नवनिर्मितीचे साधन आहे. व्हिडिओ एडिटिंग सॉफ्टवेअरसह सुसज्ज असलेल्या मल्टीमीडिया उत्पादन स्टुडिओपासून ते 3D प्रिंटर आणि कोडिंग किटपर्यंत, लायब्ररी डिजिटल प्रयोग आणि नाविन्यास समर्थन देण्यासाठी विविध संसाधने उपलब्ध करून देण्याचे ठिकाण म्हणजे डिजिटल ग्रंथालय होय. नवीन तंत्रज्ञान शोधण्यासाठी आणि सर्जनशील प्रयत्नांचा पाठपुरावा करण्यासाठी तसेच नाविन्यता निर्माण करण्यात मदत करण्याचे कार्य ग्रंथालये करतात.
- 8) ग्रंथालये विविध भाषांमधील संसाधने आणि प्रशिक्षण देऊन तंत्रज्ञानाच्या वापराशी संबंधित सांस्कृतिक विचारांना संबोधित करून विविध समुदायांमध्ये डिजिटल साक्षरतेला प्रोत्साहन देण्याचे कार्य करतात.
- 9) ओपन ऍक्सेस रिसोर्सेसच्या माध्यमातून प्रवेश प्रदान करून आणि ओपन ऍक्सेसला सपोर्ट करणाऱ्या धोरणांचे समर्थन करून माहितीच्या खुल्या प्रवेशाला प्रोत्साहन देण्यासाठी ग्रंथालये महत्वाची भूमिका बजावू शकतात.

10) ग्रंथालये विविध संस्थाना त्यांचे डिजिटल ज्ञान आणि कौशल्ये यांचे सामायिक करण्यासाठी संधी देऊ शकतात. यामध्ये हॅकथॉन, कोडिंग वर्कशॉप किंवा डिजिटल स्टोरीटेलिंग इव्हेंट सारख्या कार्यक्रमांचा समावेश होतो.

11) ग्रंथालयांच्या वापरकर्त्यांना डिजिटल माहितीचे मूल्यमापन कसे करायचे आणि चुकीची माहिती किंवा खोट्या बातम्या कशा ओळखायच्या हे शिकवून गंभीर विचार कौशल्ये विकसित करण्यात मदत करू शकतात.

सारांश :-

आजच्या 21 व्या शतकात डिजिटल साक्षरतेला चालना देण्यासाठी ग्रंथालये ही एक महत्वाची संस्था म्हणून कार्यरत आहे. ग्रंथालय ही एक सामाजिक संस्था असून तीद्वारे संसाधने, तंत्रज्ञान आणि प्रशिक्षणात प्रवेश प्रदान करण्यात आणि ते डिजिटल विभाजन कमी करण्यात आणि सर्वांसाठी डिजिटल समावेशास प्रोत्साहन देण्यासाठी मदत करण्याचे महत्वपूर्ण काम करताना दिसून येतात. ग्रंथालये शिक्षण, सर्जनशीलता आणि सामुदायिक सहभागाची गतिशील केंद्रे म्हणून काम करतात, जिथे सर्व प्रकारच्या पार्श्वभूमी असणाऱ्या व्यक्ती डिजिटल युगात भरभराट होण्यासाठी आवश्यक कौशल्ये आणि ज्ञान प्राप्त करू शकतात.

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नवीन शैक्षणिक धोरण : 2020

प्रस्तावना :-

प्राचीन काळापासून शिक्षण पद्धती अस्तित्वात आहे. प्रथम गुरुकुलामध्ये शिक्षण दिले जात होते. घरामधून मुलांना आई वडील, आजी आजोबा धार्मिक गोष्टीचे शिक्षण देत असत कालांतराने शिक्षण पद्धतीत नवनवीन बदल होत गेले. माहिती तंत्रज्ञानाच्या युगात तर शिक्षणामध्ये अमुलाग्र बदल झाले.

आणि मानवाला ते बदल घडवून आणणे बंधनकारक झाले. कुठलेही कागदपत्र आपण आता एक मीनीटात संपूर्ण देशामध्ये पाठवू शकतो या गतीने संपूर्ण जग हे संगणकावर काम करत आहे आणि यामध्येच शिक्षणामध्ये नवनवीन तंत्रज्ञानाचा वापर करणे गरजेचे झाले म्हणून नवीन शैक्षणिक धोरणाचा आराखडा निर्माण झाला.

नवीन शैक्षणिक धोरण आराखडा :-

नवीन शैक्षणिक धोरण NEP 2020 हे सर्वसमावेशक धोरण आहे. 5 + 3 + 3 + 4 हे सूत्र NEP 2020 अंतर्गत प्रस्तावित भारतातील शालेय शिक्षणाच्या नवीन संरचनेचा संदर्भ देते.

1) पायाभूत स्तर :- 5 वर्ष (वय 3 - 8) 3 वर्ष अंगणवाडी / पूर्वप्राथमिक शाळा / बालवाडी (वय 3 - 6 वर्ष), 2 वर्ष (इयत्ता 1 आणि 2 (वय 6 - 8) हा टप्पा संज्ञानात्मक, सामाजिक, भावनिक आणि सर्जनशील कौशल्ये विकसित करण्यावर लक्ष केंद्रित करून खेळा आधारित आणि क्रियाकलाप आधारित शिक्षणावर लक्ष केंद्रित करेल.

2) पुर्वाध्ययन स्तर :- 3 वर्ष (8 - 11 वय) इयत्ता 3 ते 5. यामध्ये थोडा समज येतो विद्यार्थ्यांमध्ये ज्यामध्ये गंभीर विचार समस्या सोडवणे आणि संवाद कौशल्ये विकसित करण्यावर लक्ष केंद्रित केले जाते. हा टप्पा प्रकल्प आधारित आणि अनुभवात्मक शिक्षणावर लक्ष केंद्रित करेल.

3) पुर्वमाध्यमिक स्तर :- 3 वर्ष (वय 11 - 14) इयत्ता (6 ते 8) हा टप्पा विषय आधारित शिक्षणावर लक्ष केंद्रित करेल. ज्यामध्ये संकल्पनात्मक समज आणि विश्लेषणात्मक कौशल्ये विकसित करण्यावर लक्ष केंद्रित केले जाईल.

4) माध्यमिक स्तर :- 4 वर्ष (वय 14 - 18) इयत्ता 9 ते 12) हा टप्पा बहुविद्याशाकीय अभ्यासावर केंद्रित असेल. ज्यामध्ये व्यवसायिक आणि शैक्षणिक दोन्ही कौशल्ये विकसित करण्यावर भर असेल.

नवी शैक्षणिक धोरणाचा उद्देश विद्यार्थ्यांचा सर्वांगीन विकास व्हावा माहिती तंत्रज्ञानाचा वापर जास्तीत जास्त व्हावा हा आहे.

नवीन शैक्षणिक धोरण रचना :-

शालेय शिक्षण :- हे धोरण मुलभूत साक्षरता आणि संख्याशास्त्राला चालना देऊन शिक्षणात सार्वत्रिक प्रवेश सुनिश्चित करून आणि लवचिक, बहु अनुशासनात्मक अभ्यासक्रमाला प्रोत्साहन देऊन शालेय शिक्षणात परिवर्तन करण्यावर लक्ष केंद्रित करते.

उच्च शिक्षण :-

NEP 2020 चे उद्दीष्ट बहुविद्याशाखीय शिक्षणाला चालना देऊन क्रेडिट आधारित प्रणाली सादर करून आणि संशोधन आणि नाविन्यपूर्णतेला चालना देण्यासाठी राष्ट्रीय संशोधन प्रतिष्ठान (NRF) स्थापन करून उच्च शिक्षणात परिवर्तन घडवून आणण्याचे आहे.

इतर प्रमुख क्षेत्रे :- धोरण इतर प्रमुख क्षेत्रांना देखील संबोधित करते. जसे की बालपण काळजी आणि शिक्षण, शिक्षण शिक्षक, व्यावसायिक शिक्षण आणि प्रौढ शिक्षण.

अंमलबजावणी :- NEP 2020 मध्ये अंमलबजावणी आराखडा तयार करण्यात आला आहे. ज्यामध्ये राष्ट्रीय शैक्षणिक तंत्रज्ञान मंच (NETF) स्थापन करणे, नवीन अभ्यासक्रम फ्रेमवर्क विकसित करणे आणि उच्च शिक्षणासाठी नियामक फ्रेमवर्क विकसित करणे आणि उच्च शिक्षणासाठी नियामक फ्रेमवर्क तयार करणे समाविष्ट आहे.

NEP चे उद्दीष्ट :-

विद्यार्थ्यांमध्ये नवनवीन कौशल्ये निर्माण करणे त्यांचा सर्वांगीन विकास करणे वेगाने बदलणाऱ्या जगात यशस्वी होण्यासाठी त्यांना आवश्यक कौशल्ये आणि ज्ञान प्रदान करणे हे त्यांचे उद्दीष्ट आहे.

NEP 2020 हे भारतातील शिक्षण व्यवस्थेत परिवर्तन आणि 21 व्या शतकासाठी ती अधिक समर्पक आणि सर्वसमावेशक बनवण्याच्या दिशेने एक महत्वपूर्ण पाउल आहे.

* नवीन शैक्षणिक धोरण 2020 फायदे आणि तोटे :-

फायदे :-

1) सर्वांगीण विकास :-

नवीन शैक्षणिक धोरण विद्यार्थ्यांच्या सर्वांगीन विकासावर भर देते. विद्यार्थ्यांच्या सर्वांगीण विकासाबरोबर त्याला नवनवीन करिअरच्या संधी उपलब्ध करून देणार ज्यामध्ये संज्ञानात्मक, सामाजिक, भावनिक आणि शारिरिक विकासाचा समावेश होतो.

2) लवचिक अभ्यासक्रम :-

नवीन शैक्षणिक धोरणात विद्यार्थ्यांना त्यांच्या आवडीनुसार शिक्षण घेता येते.

3) बहुविद्याशाखीय शिक्षण :-

यामध्ये विद्यार्थी विविध विषय आणि क्षेत्रामध्ये अभ्यासक्रम पूर्ण करू शकतात.

4) तंत्रज्ञानावर भर :-

NEP 2020 ने शिक्षणातील तंत्रज्ञानाचे महत्व ओळखले आहे आणि अध्यापन आणि शिकण्यात तंत्रज्ञानाच्या वापराचे समर्थन केले आहे.

5) शिक्षणातील सार्वत्रीकरण :- प्री स्कूल ने उच्च शिक्षणापर्यंत सर्व स्तरांवर गुणवत्तापूर्ण शिक्षणाची सार्वत्रिक प्रवेश सुनिश्चित करणे हे धोरणाचे उद्दीष्ट आहे.

तोटे :-

- 1) भाषेच्या समस्या
- 2) निधी
- 3) मानकीकरण
- 4) शिक्षणातील असमानता

सारांश :- नवीन शैक्षणिक धोरण हे विद्यार्थ्यांच्या सर्वांगीन विकासासाठी अतिशय चांगले आहे. यामधील लवचीकता हे अतिशय चांगले उद्दीष्ट आहे म्हणजे विद्यार्थ्यांना त्यांच्या आवडीनीवडीनुसार शिक्षण घेता येते.

संदर्भ ग्रंथ :-

- 1) फडके द.ना., 2007 ग्रंथालय संगणकीकरण आणि आधुनिकीकरण पुणे, युनिव्हर्सल प्रकाशन.
- 2) मोरे डि.एन., 2023, उच्च शिक्षण धोरण, आव्हाने आणि दिशा पुणे, द युनिक अॅकॅडमी पब्लिकेशन प्रा.लि.
- 3) ज्ञानगंगोत्री जुन नोव्हेंबर 2021, एक एक वाचक जोडून वाचनाशी नातं जोडूया
- 4) YouTube

राष्ट्रीय शैक्षणिक धोरण २०२० मधील मूल्य शिक्षण: पारंपरिक ग्रंथालयाचे योगदान

प्रा. विठ्ठल विश्वनाथ जाधव

ग्रंथपाल

दयानंद वाणिज्य महाविद्यालय लातूर

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सारांश :

नवीन राष्ट्रीय शैक्षणिक धोरणात शिक्षणाच्या गुणवत्तेत परिवर्तन आणि वाढ करण्याबरोबर विद्यार्थ्यांमध्ये मूल्य शिक्षण रुजविण्याच्या उद्देशाने महाविद्यालयीन ग्रंथालये एक प्रभावी साधन होऊ शकतात. विद्यार्थ्यांना नैतिकता, सामाजिक जबाबदारी, आणि जीवनातील मूलभूत मूल्ये शिकण्याची संधी मिळते. ग्रंथालयाच्या माध्यमातून मूल्य शिक्षणावर भर देऊन विद्यार्थ्यांचा सर्वांगीण विकास साधता येऊ शकतो. ग्रंथालयांमध्ये मूल्य शिक्षणाचे महत्त्व अधोरेखित करण्यासाठी अनेक उपक्रम आणि मार्गदर्शक तत्वे स्वीकारली गेली आहेत. या धोरणानुसार, ग्रंथालये मूल्य शिक्षणाचे केंद्र म्हणून कार्य करू शकतात. या संशोधन लेखामध्ये राष्ट्रीय शैक्षणिक धोरणास अनुकूल ग्रंथालयांमध्ये कोणत्या प्रकारे वाचकांना मूल्यशिक्षण देता येऊ शकते यावर प्रकाश टाकण्यात आला आहे.

महत्त्वाच्या संज्ञा : नवीन शैक्षणिक धोरण 2020, मूल्य शिक्षण, ग्रंथालयांची भूमिका

प्रस्तावना:

हल्ली शिक्षणाचा अर्थ केवळ पाठ्यपुस्तक, अभ्यासक्रम, परीक्षा, निकाल, असाच अभिप्रेत झाला आहे. या जगात ही जीवघेणी स्पर्धा निर्माण झाली आहे. मात्र या स्पर्धेच्या जगामध्ये 'स्पर्धेची परीक्षा' का 'परीक्षेची स्पर्धा' याचा अर्थ स्पष्ट होत नाही. केवळ स्पर्धा व अव्वल क्रमांक म्हणजे शिक्षण नाही. मानवतावादाचा सर्वांगीण विकास करणे हे सर्वात मोठे आव्हान, शिक्षण व्यवस्थेवर आहे. शिक्षण प्रक्रियेमध्ये आधुनिकता विकास, प्रगतीचे व ज्ञानाचे धडे देण्यापेक्षा मानवतेचे तत्वज्ञानाचे व मूल्यांचे धडे देणे गरजेचे वाटू लागले आहे. यातूनच मूल्य शिक्षणाची गरज अभ्यासक्रमामध्ये जाणवू लागली आहे. मूल्य शिक्षण विद्यार्थ्यांच्या आयुष्यातील प्रत्येक पैलूवर सकारात्मक परिणाम करते. हे त्यांना जीवनातील आव्हानांना समर्थपणे तोंड देण्याची आणि एक आदर्श, उत्तरदायी, आणि नैतिक व्यक्तिमत्व विकसित करण्याची संधी देते. त्यामुळे मूल्य शिक्षणाला शिक्षण प्रणालीतील एक अविभाज्य घटक मानले जाते. राष्ट्रीय शैक्षणिक धोरण २०२० ने भारतीय शिक्षण व्यवस्थेत विविध सुधारणा घडवून आणण्याबरोबर मूल्य शिक्षणास

विशेष महत्त्व दिले आहे. या धोरणाच्या पार्श्वभूमीवर पारंपरिक ग्रंथालयांची भूमिका देखील महत्त्वाची ठरते.

नवीन शैक्षणिक धोरण 2020:

नवीन शैक्षणिक धोरण हे सर्वांगीण विकासासाठी शिक्षण, लवचिक मूल्यमापन, कौशल्य विकास, तंत्रज्ञानाचे एकीकरण, शिक्षक प्रशिक्षण आणि उच्च शिक्षण सुधारणांवर भर देत आहे. हे बदल विद्यार्थी-केंद्रित असून सर्वसमावेशक आहेत. २१ व्या शतकात शैक्षणिक प्रगती होण्यासाठी विद्यार्थ्यांना आवश्यक कौशल्ये, ज्ञान आणि क्षमतांनी सुसज्ज करणारे दर्जेदार शिक्षण देण्यासाठी नवीन शैक्षणिक धोरण तयार आहे त्यामध्ये खालील मुद्द्यावर भर देण्यात आलेला आहे.

१. समग्र विकास: विद्यार्थ्यांच्या संपूर्ण विकासावर लक्ष केंद्रित करून त्यांना जीवन कौशल्ये, भावनिक संतुलन, आणि नैतिक मूल्ये शिकवणे.
२. अभ्यासक्रमात लवचिकता: मुलांना आवडत्या विषयांचे स्वातंत्र्य देण्यासाठी अभ्यासक्रमात लवचिकता.
३. तंत्रज्ञानाचा वापर: शिक्षणात तंत्रज्ञानाचा प्रभावी वापर करून डिजिटल साक्षरतेला प्रोत्साहन.
४. बहुभाषिकता: विद्यार्थ्यांना त्यांच्या मातृभाषेतून शिकण्याची संधी उपलब्ध करून देणे.
५. शिक्षणात समावेशिकता: सर्व विद्यार्थ्यांसाठी समान संधी निर्माण करणे, ज्यामध्ये आर्थिकदृष्ट्या दुर्बल आणि सामाजिकदृष्ट्या मागासवर्गातील विद्यार्थ्यांचा समावेश.

मूल्य शिक्षणाचे महत्त्व:

१. मूल्य शिक्षण विद्यार्थ्यांच्या आयुष्यातील प्रत्येक पैलूवर सकारात्मक परिणाम करते. हे त्यांना जीवनातील आव्हानांना समर्थपणे तोंड देण्याची आणि एक आदर्श, उत्तरदायी, आणि नैतिक व्यक्तिमत्त्व विकसित करण्याची संधी देते. त्यामुळे मूल्य शिक्षणाला शिक्षण प्रणालीतील एक अविभाज्य घटक मानले जाते. मूल्य शिक्षणाची महत्त्वपूर्ण भूमिका विद्यार्थ्यांच्या सर्वांगीण विकासात असते. मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये नैतिकता, आदर, सामाजिक जबाबदारी, आणि जीवन कौशल्ये विकसित होतात, जे त्यांना एक आदर्श नागरिक बनण्यास मदत करतात. मूल्य शिक्षणाची महत्त्वता खालीलप्रमाणे स्पष्ट करता येईल:

१. नैतिक मूल्यांची स्थापना: मूल्य शिक्षणाद्वारे विद्यार्थ्यांना नैतिकता, प्रामाणिकपणा, सत्य, अहिंसा, आणि आदर यासारखी मूल्ये शिकण्याची संधी मिळते. हे मूल्य त्यांना आयुष्यातील विविध निर्णय घेताना नैतिकतेचा आधार देतात. विद्यार्थ्यांच्या वर्तनात चांगले मूल्य निर्माण होऊन ते आदर्श आचरणाचे उदाहरण बनू शकतात.
२. सामाजिक कौशल्ये आणि जबाबदारी: मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये सामाजिक जागरूकता वाढते, ज्यामुळे ते समाजातील समस्या ओळखू शकतात आणि त्यांच्याशी योग्य प्रकारे हाताळू शकतात. मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये सहकार्य, समजूतदारपणा, आणि एकत्रित कार्य करण्याची वृत्ती विकसित होते.
३. व्यक्तिमत्त्व विकास: मूल्य शिक्षण विद्यार्थ्यांच्या आत्मविश्वासाला बळकटी देते आणि त्यांचा स्वाभिमान वाढवते. मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये आत्मनियंत्रणाची भावना आणि स्वावलंबन विकसित होते.
४. भावनिक बुद्धिमत्ता/संवेदनशीलता: मूल्य शिक्षणामुळे विद्यार्थ्यांमध्ये संवेदनशीलता निर्माण होते, ज्यामुळे ते इतरांच्या भावनांचा आदर करतात आणि त्यांच्या समस्या समजून घेण्याचा प्रयत्न करतात. मूल्य शिक्षण विद्यार्थ्यांच्या जीवनात सकारात्मक दृष्टिकोन निर्माण करते, ज्यामुळे ते जीवनातील आव्हानांना समर्थपणे सामोरे जाऊ शकतात.
५. आर्थिक जबाबदारी आणि अडचणीचे व्यवस्थापन: : मूल्य शिक्षणामुळे विद्यार्थी आर्थिक, पर्यावरणीय, आणि सामाजिक संकटे व्यवस्थापित करण्यास सक्षम होतात. मूल्य शिक्षणामुळे विद्यार्थी पर्यावरणाचे संवर्धन करण्यास आणि नैसर्गिक संसाधनांचे संरक्षण करण्यास प्रेरित होतात.
६. शांती आणि सद्भावना: मूल्य शिक्षणामुळे विद्यार्थी शांतिपूर्ण अस्तित्वासाठी सज्ज होतात, ज्यामुळे सामाजिक स्तरावर शांती आणि सद्भावना प्रस्थापित होते. मूल्य शिक्षणामुळे विद्यार्थी द्वेष, वैमनस्य, आणि हिंसा यांपासून दूर राहून एक द्वेषमुक्त समाज निर्मिती करतात.
७. शैक्षणिक गुणवत्ता आणि कार्यक्षमता: मूल्य शिक्षणामुळे विद्यार्थ्यांची शैक्षणिक गुणवत्ता सुधारते कारण ते अभ्यासाकडे गांभीर्याने आणि प्रामाणिकपणे पाहतात. मूल्य शिक्षणामुळे विद्यार्थ्यांची कार्यक्षमता आणि उत्पादकता वाढते.
८. सर्वांगीण विकास: मूल्य शिक्षण विद्यार्थ्यांच्या शारीरिक, मानसिक, बौद्धिक, आणि भावनिक विकासाला प्रोत्साहन देते. मूल्य शिक्षणामुळे विद्यार्थी चांगले नागरिक बनतात, ज्यामुळे देशाच्या प्रगतीत त्यांचा महत्वपूर्ण वाटा असतो.

नवीन शैक्षणिक धोरण २०२० अंतर्गत ग्रंथालयासाठी संधी:

नवीन शैक्षणिक धोरणामुळे महाविद्यालयीन ग्रंथालये आणि ग्रंथपालांना नवनवीन संधी आणि आव्हाने उपलब्ध होतील. ग्रंथपालांनी या धोरणाचा फायदा घेत विद्यार्थ्यांना आणि शिक्षकांना त्यांच्या शिक्षण आणि संशोधनात सहाय्य करणे आवश्यक आहे. त्यामुळे ग्रंथालये केवळ ग्रंथ व नियतकालिके साठविण्याची जागा न राहता ज्ञानाचे केंद्रीकरण झाले आहे.

१. अधिकृत ग्रंथालये: नवीन शैक्षणिक धोरणामुळे, ग्रंथालयांची संख्या वाढविण्यावर भर देण्यात येईल. त्यासाठी निधी आणि संसाधने उपलब्ध करून दिली जातील.
२. माहिती आणि संसाधनांची उपलब्धता: विविध प्रकारची पुस्तके, जर्नल्स, ई-पुस्तके, ऑडिओ व्हिड्युअल माध्यमे यांचा समावेश असलेले आधुनिक ग्रंथालय उपलब्ध करून देणे.
३. शिक्षक आणि विद्यार्थ्यांसाठी संसाधने: शिक्षकांच्या अध्यापन प्रक्रियेस मदत करण्यासाठी विशेष साहित्य आणि साधने उपलब्ध करून देणे. विद्यार्थ्यांच्या संशोधन आणि शिक्षणाची गुणवत्ता वाढविण्यासाठी संसाधनांची उपलब्धता वाढवणे.

नवीन शैक्षणिक धोरणास अनुकूल ग्रंथालयांची भूमिका :

ग्रंथालये ही ज्ञानाचा स्त्रोत असून विद्यार्थ्यांना विविध विषयांवरील सखोल माहिती मिळविण्यास मदत करतात. संशोधनाची आवड असलेल्या विद्यार्थ्यांसाठी ग्रंथालये महत्वाची भूमिका बजावतात, जिथे ते अधिकाधिक पुस्तकांचा आणि संशोधन पत्रिकांचा उपयोग करू शकतात. नवीन शैक्षणिक धोरणाच्या अंतर्गत ग्रंथालये शैक्षणिक प्रणालीतील एक अत्यंत महत्वाचा घटक आहे. या धोरणाने ग्रंथालयांना नवीन दिशादर्शन दिले आहे, ज्यामुळे ते विद्यार्थ्यांना ज्ञान आणि संशोधनात मदत करू शकतात, त्याचबरोबर शिक्षक आणि संशोधकांना सुद्धा सहाय्य करू शकतात.

आधुनिक काळात, डिजिटल ग्रंथालयांची मागणी वाढत आहे, जेणेकरून विद्यार्थ्यांना इंटरनेटच्या माध्यमातून विविध स्त्रोतांना प्रवेश मिळू शकतो. ग्रंथालये विविध भाषांतील आणि विषयांतील पुस्तके उपलब्ध करून, संस्कृतीचे जतन आणि प्रसार करतात. शिक्षक आणि विद्यार्थ्यांना त्यांच्या विषयातील अद्ययावत माहिती आणि साहित्य उपलब्ध करून शिक्षणाची गुणवत्ता वाढवतात. ग्रंथालयांमध्ये सोयीस्कर वातावरण निर्माण करून आणि अधिक पुस्तके, संगणक, आणि इंटरनेट सुविधांमध्ये सुधारणा करण्यास पाठिंबा. ग्रंथालयांमध्ये वाचन, लेखन, आणि इतर शैक्षणिक कार्यक्रमांची आयोजन विद्यार्थ्यांच्या विविध गटांसाठी ग्रंथालयांच्या वापरास प्रोत्साहन देणे. महाविद्यालये, आणि विद्यापीठे यांच्यातील ग्रंथालयांमधील सहयोग वाढवून संसाधनांचा वापर सुलभ करणे.

नवीन शैक्षणिक धोरण महाविद्यालयीन ग्रंथालये आणि ग्रंथपालांसाठी काही विशिष्ट मार्गदर्शक तत्वे आणि संधी उपलब्ध करून देत आहे. शिक्षण सर्वांसाठी उपलब्ध असले पाहिजे. त्यासाठी ग्रंथालयांची भूमिका विद्यार्थ्यांना शिक्षणाच्या प्रवाहात आणण्यासाठी महत्वाची ठरते. ग्रंथपाल विविध गटांसाठी विशेष उपक्रम राबवू शकतात ज्यामुळे जास्तीत जास्त विद्यार्थी ग्रंथालयाचा लाभ घेऊ शकतील. यामध्ये ग्रंथालये डिजिटल संसाधने उपलब्ध करून देणे, ई-पुस्तके आणि ऑनलाइन डेटाबेसचा वापर प्रोत्साहन देणे याचा समावेश आहे. ग्रंथपालांनी डिजिटल साधनांचा वापर करून नवीन ज्ञानस्रोत शोधणे आणि विद्यार्थ्यांना उपलब्ध करून देणे हे आवश्यक ठरेल. महाविद्यालये आणि विद्यापीठांमध्ये संशोधनाला प्रोत्साहन देणे आवश्यक आहे. ग्रंथालये संशोधन साहित्य, जर्नल्स, डेटाबेस, आणि इतर साधने उपलब्ध करून देऊन संशोधन वाढविण्यात महत्वाची भूमिका बजावू शकतात. ग्रंथपाल संशोधन कौशल्ये विकसित करण्यासाठी कार्यशाळा आणि सेमिनार आयोजित करू शकतात.

ग्रंथालयांमध्ये मूल्य शिक्षणावर आधारित उपक्रम :

महाविद्यालयीन ग्रंथालयांमध्ये मूल्य शिक्षणावर भर देण्यासाठी आणि विद्यार्थ्यांच्या सर्वांगीण विकासाला प्रोत्साहन देण्यासाठी विविध उपाययोजना आणि उपक्रम राबवले जाऊ शकतात. महाविद्यालयीन ग्रंथालये मूल्य शिक्षणासाठी एक प्रभावी साधन होऊ शकतात. या उपक्रमांमधून विद्यार्थ्यांना नैतिकता, सामाजिक जबाबदारी, आणि जीवनातील मूलभूत मूल्ये शिकण्याची संधी मिळते. ग्रंथालयाच्या माध्यमातून मूल्य शिक्षणावर भर देऊन विद्यार्थ्यांचा सर्वांगीण विकास साधता येऊ शकतो.

१. मूल्य शिक्षणाशी संबंधित साहित्य आणि संसाधने: महाविद्यालयीन ग्रंथालये मूल्य शिक्षणासाठी एक प्रभावी साधन होऊ शकतात. या उपक्रमांमधून विद्यार्थ्यांना नैतिकता, सामाजिक जबाबदारी, आणि जीवनातील मूलभूत मूल्ये शिकण्याची संधी मिळते. ग्रंथालयाच्या माध्यमातून मूल्य शिक्षणावर भर देऊन विद्यार्थ्यांचा सर्वांगीण विकास साधता येऊ शकतो. ग्रंथालयात नैतिक मूल्ये, मानवी मूल्ये, संस्कार, आदर्श, सामाजिक जबाबदारी, आणि जीवन कौशल्ये या विषयांवरील पुस्तके आणि संदर्भ साहित्य उपलब्ध करणे. नैतिकता, मूल्य शिक्षण, आणि जीवन कौशल्ये यावर आधारित डॉक्युमेंटरीज, व्हिडिओज, आणि ऑडिओ रेकॉर्डिंग्ज उपलब्ध करणे.

२. मूल्य शिक्षणासंबंधी कार्यक्रम आणि कार्यशाळा : वाचन आणि चर्चा सत्रे: नैतिक मूल्ये आणि जीवनात त्यांच्या उपयोगावर आधारित वाचन सत्रे आणि चर्चा सत्रांचे आयोजन करणे. मूल्यांशी संबंधित नाटक, लोककला, आणि सांस्कृतिक कार्यक्रमांचे आयोजन करून विद्यार्थ्यांना मूल्यांचे

महत्त्व पटवून देणे. नैतिक निर्णय, जीवन कौशल्ये, आणि सामाजिक जबाबदारी या विषयांवर कार्यशाळा आणि प्रशिक्षण कार्यक्रमांचे आयोजन करणे.

३. ग्रंथालयाचे वातावरण आणि अनुभव: ग्रंथालयातील विविध विभागांमध्ये मूल्यांवर आधारित थीम तयार करणे, जसे की "ईमानदारीचा कोपरा," "समर्पणाचा कोपरा," इत्यादी. ग्रंथालयात प्रेरणादायी कोट्स, कथित संदेश, आणि मूल्यांवर आधारित गोष्टी लावून ठेवणे.: विद्यार्थ्यांना मूल्यांवर विचार करण्यासाठी आणि चिंतन करण्यासाठी विशेष शांत आणि चिंतनशील जागा उपलब्ध करून देणे.

४. विद्यार्थी सहभाग आणि योगदान: ग्रंथालयाच्या माध्यमातून समाजसेवा आणि स्वयंसेवेचे कार्यक्रम राबवून विद्यार्थ्यांमध्ये सामाजिक मूल्ये आणि जबाबदारीची जाणीव निर्माण करणे. मूल्य शिक्षणावर आधारित विद्यार्थी समिती स्थापन करणे ज्यामध्ये विद्यार्थी स्वतः उपक्रम आणि कार्यक्रम राबवू शकतील. मूल्य शिक्षणातील तज्ञ आणि मार्गदर्शकांना निमंत्रित करून मार्गदर्शन सत्रे आयोजित करणे.

५. सर्वेक्षण आणि मूल्यांकन: मूल्य शिक्षणाच्या उपक्रमांबद्दल विद्यार्थ्यांचा अभिप्राय घेणे आणि त्यानुसार उपक्रमांमध्ये सुधारणा करणे. मूल्य शिक्षणाच्या उपक्रमांचा विद्यार्थ्यांवर होणारा प्रभाव मोजणे आणि त्यानुसार पुढील रणनीती ठरवणे.

६. गोष्टींचा संग्रह आणि प्रदर्शन: नैतिक आणि मूल्यांवर आधारित गोष्टींचा संग्रह उपलब्ध करून देणे आणि विद्यार्थ्यांना त्यातून शिकण्याची संधी देणे. मूल्यांशी संबंधित गोष्टींचे आणि कलाकृतींचे प्रदर्शन आयोजित करणे.

८. प्रेरणा आणि प्रोत्साहन: मूल्य शिक्षणाशी संबंधित उपक्रमांमध्ये सहभागी होणाऱ्या आणि उल्लेखनीय कार्य करणाऱ्या विद्यार्थ्यांना बक्षीस देणे. विद्यार्थ्यांच्या सहभागाचे कौतुक करण्यासाठी प्रमाणपत्रे आणि प्रशस्तिपत्रे प्रदान करणे.

समारोप:

तंत्रज्ञानाचा वापर करून ग्रंथालय व्यवस्थापन अधिक कार्यक्षम करणे अपेक्षित आहे. ग्रंथपालांनी सूचना शोधण्याचे तंत्र, डेटाबेस वापरण्याचे कौशल्य, आणि शोध प्रक्रिया सोपी करण्यावर भर द्यावा. विद्यार्थ्यांना योग्य साहित्य आणि संसाधने निवडण्यासाठी शैक्षणिक समुपदेशन/ मार्गदर्शन करणे. अभ्यासक्रमाशी निगडित साहित्य उपलब्ध करून देणे आणि विद्यार्थ्यांच्या गरजेनुसार संदर्भ उपलब्ध करणे. डिजिटल लायब्ररी, ऑनलाइन रीडिंग प्लॅटफॉर्म, आणि डिजिटल रिसोर्सेस यांचा समावेश करून ग्रंथालयाची सेवा सुधारणे. विद्यार्थ्यांना डिजिटल साधने वापरण्याचे प्रशिक्षण देणे. इतर शैक्षणिक संस्था, प्रकाशन संस्था, आणि ऑनलाइन

प्लॅटफॉर्मशी भागीदारी करून ग्रंथालयाचा विस्तार करणे. विविध कार्यशाळा, वाचन कार्यक्रम, आणि चर्चासत्रे आयोजित करून ग्रंथालयाचा उपयोग वाढविता येईल.

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Emerging Technologies in Education

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Abstract:

This paper explores the transformative impact of emerging technologies on education, focusing on five key innovations: Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), Blockchain, and the Internet of Things (IoT). These technologies are revolutionizing traditional educational practices by enhancing interactivity, personalization, and efficiency in teaching and learning. AI offers personalized learning experiences and data-driven insights, while AR and VR provide immersive, hands-on learning opportunities. Blockchain ensures secure, verifiable academic records, and IoT enables the creation of smart learning environments. However, the integration of these technologies also presents challenges, including high costs, accessibility issues, data privacy concerns, and the need for technical expertise. This paper discusses both the opportunities and challenges associated with these technologies, providing insights into how they can be effectively implemented to improve educational outcomes and prepare students for a technology-driven future.

Introduction:

Emerging technologies are rapidly transforming education, creating new opportunities for enhancing teaching and learning experiences. These technologies, including Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), Blockchain, and the Internet of Things (IoT), are reshaping traditional educational practices by making learning more interactive, personalized, and efficient. As education increasingly integrates these innovations, it becomes crucial for educators, students, and policymakers to understand their potential benefits and challenges. While these technologies offer significant advantages, such as improved student engagement, personalized learning, and secure credentialing, they also present challenges related to

cost, accessibility, data privacy, and the need for technical expertise. This paper explores these emerging technologies, examining their impact on education and the considerations necessary for their successful implementation. By understanding these trends, stakeholders can better prepare for the future of education, ensuring that it remains relevant and effective in a rapidly changing world.

Keywords: Emerging Technologies, Education, Artificial Intelligence, Augmented Reality, Virtual Reality, Blockchain, Internet of Things.

Artificial Intelligence (AI)

Artificial Intelligence (AI) is transforming education by offering personalized learning experiences, automating administrative tasks, and enabling advanced data analytics. AI-powered tools can adapt to individual student needs, providing customized content and feedback, which enhances learning outcomes. For educators, AI reduces the burden of repetitive tasks, such as grading and scheduling, allowing more focus on teaching and student engagement. Additionally, AI can analyze vast amounts of data to identify trends in student performance, helping educators intervene early when students struggle. However, the integration of AI in education raises ethical concerns, including data privacy, the potential for bias in AI algorithms, and the risk of widening the digital divide. Despite these challenges, AI's potential to revolutionize education by making it more efficient, personalized, and accessible makes it a critical area of development in modern educational practices.

Augmented Reality (AR):

Augmented Reality (AR) is a cutting-edge technology that overlays digital information onto the real world, enhancing the learning experience by making it interactive and immersive. In education, AR brings abstract concepts to life, allowing students to visualize and engage with content in ways that traditional methods cannot. For example, AR can be used in science classes to explore complex structures like the human body or in history lessons to bring historical events and artifacts into the classroom. This hands-on approach not only boosts engagement but also helps improve comprehension and retention of information. However, the widespread adoption of AR in education faces challenges, such as the high cost of AR devices, the need for technical infrastructure, and the requirement for teachers to develop new skills to effectively

integrate AR into their lessons. Despite these hurdles, AR's potential to transform learning environments makes it a promising tool for the future of education.

Virtual Reality (VR)

Virtual Reality (VR) is an immersive technology that simulates real or imagined environments, offering profound educational experiences by placing students in a fully interactive, 3D world. In education, VR enables experiential learning, allowing students to explore places, perform complex procedures, or visualize abstract concepts that would otherwise be inaccessible. For example, VR can simulate historical events, enable virtual field trips to distant places, or provide safe environments for practicing medical surgeries or engineering tasks. This technology fosters deeper understanding by engaging multiple senses and creating memorable, hands-on learning experiences. However, the adoption of VR in education is hindered by challenges such as the high cost of VR equipment, the need for technical expertise, and concerns about prolonged screen time and its effects on students' health. Despite these challenges, VR's potential to revolutionize how students learn makes it a valuable tool for education in the digital age.

Blockchain Technolog:

Blockchain technology is emerging as a transformative force in education, providing a secure and transparent way to manage academic records and credentials. By using decentralized, tamper-proof ledgers, blockchain ensures that certificates, diplomas, and other educational credentials are securely stored and easily verifiable. This reduces the risk of fraud and simplifies the process of sharing and verifying academic achievements across institutions and employers. Additionally, blockchain can support new educational models, such as decentralized learning platforms and smart contracts for automating administrative tasks like course enrollment and tuition payments. However, the adoption of blockchain in education faces challenges, including the complexity of the technology, the need for standardization, and concerns about data privacy. Despite these hurdles, blockchain's potential to enhance trust, security, and efficiency in the education system makes it a promising tool for the future, particularly in ensuring the integrity and portability of academic credentials.

Internet of Things:

The Internet of Things (IoT) is revolutionizing education by connecting physical devices to the internet, enabling real-time data collection and interaction in learning environments. In classrooms, IoT can enhance learning experiences through smart devices that monitor student engagement, adjust learning materials, and provide instant feedback. For instance, IoT-enabled tools can track students' progress, alert teachers to students who need additional help, and even personalize learning experiences based on real-time data. Additionally, IoT supports the creation of smart campuses, where everything from lighting to security systems is interconnected, improving efficiency and safety. Despite its potential, the integration of IoT in education presents challenges such as ensuring data security, managing privacy concerns, and addressing the high costs associated with implementing IoT infrastructure. However, as IoT technology continues to evolve, its ability to create dynamic, responsive learning environments will play a crucial role in the future of education.

Conclusion:

The integration of emerging technologies in education holds the potential to revolutionize the learning experience, making it more interactive, personalized, and efficient. However, the successful adoption of these technologies requires careful consideration of the associated challenges, including ethical concerns, cost, accessibility, and the need for adequate infrastructure. Educators, policymakers, and technology developers must collaborate to ensure that these technologies are implemented in ways that enhance educational outcomes while minimizing potential risks. As these technologies continue to evolve, their role in education will undoubtedly expand, shaping the future of learning in profound ways.

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Online Platforms for Research and Scholarly Publications

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Abstract:

There are various online research platforms and tools which are very useful for researchers and authors of the scholarly publications. This paper introduces few contemporary online platforms such as Google scholar, ORCID, Research gate, Academia, Scopus and Publons

Keywords: Research, e-research, Google scholar, ORCID, Research gate, Academia, Scopus, publons

Introduction:

Research is about expanding the boundaries of human knowledge. Search services are beneficial for the academic group to direct their attention to content that is more relevant to their needs. A large number of web sites containing potentially relevant information require a search engine of millions of web sites but the ability to target specific types of information. Researchers can easily find relevant works, citations, authors and publications. Create a public author profile and see who is citing your recent publication. This article mainly focuses on online research platforms which are very useful in the recent era of information and technology.

In today's electronic world the important objective of every researcher is to manage various tasks, produce productive results, use time efficiently and document the research i.e. publish it. All this requires a well-planned and organized system, which is achieved by monitoring the progress and collaboration of your projects, finding relevant literature, writing your project proposals, reports and articles, avoiding language errors, citing original sources, networking, researching. Journals etc. for publication. Many online platforms make this task easy for researchers. However, with the plethora of information available online, evaluating what works and what doesn't can become a time-consuming nightmare.

There are various types of online research platforms are available. Some of them are Google scholar, ORCID, Research Gate, Academia.edu, Scopus, Web of Science, and Publon.. These platforms are introduces in the following paragraphs.

1. Google scholar:

Google scholar is a famous and familiar online tool. It is offered for free by Google and is essential for any researcher. Withhaving computer, an internet connection, and a subject for research, generally it include peer-reviewed articles, these, books, different abstract, online repositories.

Google Scholar works just like Google. But it directly links you to only publications in countless academic journals. When using the system, look at the right-hand side of the search results. There, a universal approach has to remain Google's strength, and to achieve its goals Google will need the cooperation of the providers as well as users of academic information. It provides a simple way to broadly search for any material or literature. It is search engine that specializes in searching scholarly literature and academic resources.

The Google Scholar service has the potential to grow if it develops close contacts with both providers and users of academic information. Use of Google Scholar will benefit the authors and managers of open access material, but there are opportunities for all types of academic content providers in the way Google Scholar is set up. Google Scholar should be able to provide such version identification. It may be that the long-term commercial success of Google Scholar will depend on such added-value services.

Google Scholar managers will have to fix their terms because most users will require up-to-date information. These doubts about Google Scholar's value are capable of resolution, given close cooperation between Google Scholar managers and both users and providers of information.

Google Scholar provides a quick way to broadly search for content from location. Look for articles, theses, books, abstracts, and court opinions, from professional societies, online repositories, universities, academic publishers, and other websites.

Features

- Create author page publically
- Look for information across Google's database.
- Easy to use.

Google Scholar is an academic search engine. It allows its users to search all manner of academic literature from journals and white papers to scientific articles and patents. Furthermore, the Google Scholar search facility allows you to set up an alert. This will notify you should a new article or paper be released in your particular field, or from a particular person or institution. This ensures that your research remains on the cutting edge of your field.

2. ORCID:

Generally, ORCID stands for open researcher and contributor ID, it provides a constant digital identifier that you own and control, and that distinguishes us from every other researcher. Is a global, not-for-profit organization sustained by fees from our member organizations? Its vision is a world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributors across disciplines, borders and time. It is unique constant identifier free of charge to researchers. Its aims to provide a persistent code for human.

ORCID's vision is a world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributions across disciplines, borders, and time. In order to realize our vision, ORCID enable transparent and trustworthy connections between

researchers, their contributions, and their affiliations by providing a unique, persistent identifier for individuals to use as they engage in research, scholarship, and innovation activities.

Features

- It works to support the creation of a constant, clear, and obvious record of research. It transcends discipline, geographic, national, and institutional boundaries.
- Membership in ORCID is open for all organization that has an interest in research
- These services will be based on transparent and non-discriminatory conditions posted on the ORCID website.
- Researchers will be able to create, edit, and maintain an ORCID identifier and record for free
- Researchers will be able to control the defined privacy settings of their own record.

3. Research Gate:

The awesome platforms which are freely available for researcher called Research Gate. It gives us access to over millions of research papers allowing you to stay update with what's happening in each and every field. With a built-in community, researchers can share their research, collaborate with peers, and discover new papers and bibliographies.

Till date there are over 20 million researchers from more than 190 countries connecting through Research Gate to share their work. It also allows interactive discussions with researchers on this particular platform. As well track how many people have read or referenced our work. Research Gate also provides deep analytics on who's been reading work and keeps track of citations.

Features

- Share and find researchers.
- Analytics to see who's reading your work.
- Tracking of Citation is possible.

4. Academia.edu:

It is also totally free service. With using academia.edu it is possible to exchange knowledge in effective formats like videos, content, dataset, etc with academics all over the world. Till now over 22 million articles and about 31 million academics, professionals, researchers are active on the platform. Academia.edu's algorithms generate about 20 million article recommendations per day. It is also possible to exchange knowledge in effective format.

5. Scopus:

It is important bibliographic database. Generally it covered the subjects like life sciences, social sciences, health and physical science, It searches through about seventy five million entries, including 194'000 books. You can search by author, document title, or affiliation. It shows the citation rate of almost any article from any discipline. The tool also suggests similar documents by related references, which could accelerate your research. It is user friendly database and One of the important standard unit for measuring the citation impact.

6. Web of Science:

WoS is a multidisciplinary citation database trusted by more than thousands of institutions. It is also used for publication it allows for the historical tracking of research questions in all levels of

knowledge. 9.1 billion Cited references would suffice for the most exigent researcher. Web of Science can be used as a resource to find trusted materials in the public domain. it supports near about 256 disciplines.

Web of science include science citation index, social science citation index, arts and humanities citation index, conference proceeding citation index, book citation index, as well as current chemical reactions index. It basically covers the format like articles, reviews. Editorials, chronologies, journals and book based proceeding, abstract as well as technical papers.

7. Publon:

is a commercial website that provides a free service for researchers to track, verify, and showcase their peer review and editorial contributions for journals. Launched in 2012. It claims that over 3,000,000 researchers have joined the site, adding more than one million reviews across 25,000 journals. Researcher was integrated with Publons. It produces a verified record of a person's review and editorial activity for journals, which can be downloaded to include in CVs, funding and job applications, and promotion and performance evaluations. Publons' business model is based on partnering with publishers.

Conclusion:

From above explanation it can concluded that these platforms are very useful. These platforms help in increasing productivity by saving time. Data is instantly available and can easily be transferred into specialized statistical software when more detail analysis is needed. These databases are useful to know how effective or impactful our publications are among our field.

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