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Achieving Excellence in Teaching History: Navigating the Digital Frontier

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ABSTRACT

This research paper explores the dynamic landscape of achieving excellence in teaching history by navigating the digital frontier. In the contemporary educational context, the integration of digital technology into history instruction is crucial for fostering enhanced understanding and engagement among students. The study delves into multifaceted approaches and innovative strategies that educators can employ to elevate history education in the digital age.

Immersive technologies, including virtual reality (VR) and augmented reality (AR), are examined for their potential to revolutionize historical learning experiences. By providing students with immersive and contextualized environments, these technologies aim to augment traditional pedagogical methods and deepen comprehension.

Digital storytelling and multimedia approaches take center stage as avenues to make historical narratives more compelling and accessible. The incorporation of videos, podcasts, and interactive presentations caters to diverse learning styles, offering students a richer understanding of historical events through engaging and interactive mediums.

The study investigates the integration of interactive learning platforms and gamification to create dynamic and motivating history lessons. Gamified elements, quizzes, and interactive modules aim to enhance student motivation, participation, and knowledge retention, transforming the history classroom into an interactive and engaging space. The accessibility of online archives and digitized primary sources emerges

as a crucial component of the digital frontier in history education. This allows students to engage directly with historical documents, fostering research skills and a more comprehensive understanding of past events. Fostering critical digital literacy skills is explored as an essential aspect of navigating the digital landscape. Students are encouraged to critically evaluate online sources, discern bias, and navigate the vast array of digital information available to them, promoting information literacy in the digital age.

Recognizing the pivotal role of educators, the study emphasizes the importance of continuous professional development. History teachers are encouraged to stay abreast of emerging technologies, pedagogical methodologies, and digital tools to effectively integrate them into their teaching practices.

The research incorporates case studies illustrating successful implementations of digital technology in history classrooms, offering practical insights, challenges faced, and lessons learned. Recommendations for educators, institutions, and policymakers underscore the need for adaptability, collaboration, and ongoing professional growth to successfully navigate the digital frontier in history education. This paper aims to serve as a comprehensive guide for educators seeking to achieve excellence in teaching history in an ever-evolving digital landscape.

Keywords: Virtual Reality, Gamification, Immersive Technologies.

INTRODUCTION

Teaching history is a complex and multifaceted endeavor that requires a deep understanding of the subject, effective pedagogical strategies, and a commitment to continuous improvement. In today's digital age, educators have many resources and tools at their disposal that can improve teaching and learning. However, navigating the digital frontier can be difficult and it is important for educators to develop the skills and knowledge needed to use these resources effectively. In this article, we explore the concept of excellence in history education and discuss how teachers can navigate the digital frontier to improve their teaching practices. We explore the benefits and challenges of using digital tools and resources in the history classroom, and provide practical tips and strategies for integrating technology into teaching.

The Importance of Teaching History

Teaching history is essential for several reasons. First, it helps students develop a deeper understanding of the world around them and the events that have shaped it. By studying history, students gain insight into the causes and consequences of past events and the complex relationships between different cultures and societies. In addition, teaching history helps students develop critical thinking and analytical skills. By studying primary and secondary sources, the student learns to evaluate evidence, analyze different points of view and draw conclusions. These skills are essential for success in today's world, where the ability to think critically and make informed decisions is highly valued. Finally, teaching history helps students develop empathy and perspective. By studying the experiences of people from different times

and places, students gain an even greater appreciation for the diversity of the human experience and the common humanity that unites us all.

The Digital Frontier

The digital frontier refers to the rapidly evolving landscape of digital technology and its impact on education. Recent years have seen an increase in the number of digital tools and resources that can enhance teaching and learning in the history classroom. These include online databases, interactive maps, virtual reality simulations and multimedia presentations. There are many advantages to using digital tools and resources in the history classroom. For example, digital resources can make historical information more accessible and interesting to students. Multimedia presentations allow teachers to bring historical events to life and help students visualize the past in a way that is not possible with traditional textbooks alone. In addition, digital tools can help students develop important skills such as digital literacy and information literacy. By browsing online databases and evaluating digital sources, students can learn to critically evaluate information and distinguish between reliable and unreliable sources.

THE DIGITAL WORLD FOR TEACHING HISTORY IN THE NEW AGE

Virtual Reality: Virtual reality (VR) is a rapidly developing technology that has the potential to revolutionize the teaching of history. By immersing students in a realistic interactive environment, VR can provide a more immersive and memorable learning experience. Here are some ways VR can be used to teach about historical events:

1. *Virtual Field Trips:* VR can be used to take students on virtual field trips to historical sites and landmarks. For example, students can explore the ruins of ancient civilizations, visit famous battlefields or visit historical museums without leaving the classroom. In this way, students can experience history in a more engaging and interactive way.
2. *Recreate historical events:* VR can be used to recreate historical events in a realistic and interactive way. For example, students can see the signing of the Declaration of Independence, experience the Battle of Gettysburg or explore the streets of ancient Rome. In this way, students gain a deeper understanding of historical events and their meaning.
3. *Simulation of Historical Environments:* VR can be used to simulate historical environments, allowing students to experience what life was like in different eras. For example, students can explore a medieval castle, walk through a World War II village or visit a 19th century factory. This helps students develop a more vivid and realistic understanding of historical contexts.
4. *Interact with Historical Figures:* VR can be used to create virtual simulations of historical figures, allowing students to interact with them and learn more about their lives and contributions. For example, students can talk to Abraham Lincoln, listen to a speech by

Martin Luther King Jr. or see a Shakespeare play. This helps students make a more personal connection with historical figures and events.

5. *Creating historical narratives:* VR can be used to create immersive historical narratives that allow students to experience history from different perspectives. For example, students can experience the American Revolution from the perspective of a British soldier, a colonist, or a Native American. This helps students to more fully understand historical events and their impact on different groups of people.
6. *Improve Critical Thinking:* VR can be used to improve critical thinking by presenting students with complex historical scenarios and asking them to make decisions based on available information. For example, students may be asked to decide whether to support or oppose a certain historical figure or event, or to consider the ethical implications of various historical actions. This helps students to more fully understand historical events and their impact on different groups of people.
7. *Facilitating Collaborative Learning:* VR can be used to facilitate collaborative learning by allowing students to work together to explore historical environments, solve historical puzzles, or solve historical challenges. For example, students can solve a puzzle together in Ancient Egypt or build a virtual model of a historical city. It helps students develop teamwork and communication skills and a deeper understanding of historical events and their significance. Overall, VR can change the way history is taught by providing students with a more immersive, interactive and immersive learning experience. By using VR to recreate historical events, environments and characters, educators can help students understand history and its impact on the world.

ONLINE DATA BASES

Online databases are an invaluable resource for teachers and students of history. They provide access to a wide range of primary and secondary sources, scholarly articles and other historical materials that can enhance the teaching and learning of history. Here are some ways that online databases can be used to teach history:

1. *Access to Primary Sources:* Online databases provide access to many primary sources, including letters, diaries, photographs, newspapers, and government. Documents. These sources provide students with first-hand access to historical materials and a deeper understanding of the past.
2. *Access to Secondary Sources:* Online databases also provide access to secondary sources such as research papers, books and essays. These sources can help students gain a broader perspective on historical events and understand how historians interpret the past.
3. *Research and Inquiry:* Online databases can be used to support student research and investigation. For example, students can use databases to find sources for research papers,

explore different perspectives on historical events, or explore specific topics in more depth.

4. *Critical Thinking and Analysis:* Online databases can help students develop critical thinking and analytical skills. For example, students can learn to evaluate the credibility and trustworthiness of sources, consider different perspectives on historical events, and analyze the biases and assumptions behind historical interpretations.
5. *Digital Literacy:* Online databases can help students develop digital literacy. For example, students can learn how to browse databases, search for specific types of sources, and use advanced search techniques to find relevant materials.
6. *Collaborative Learning:* Web-based databases can facilitate collaborative learning by allowing students to collaborate in researching historical materials, analyzing sources, and developing research projects. For example, students can use databases to create digital exhibits, curate resource collections, or collaborate on research.
7. *Access to multimedia resources:* Many online databases contain multimedia resources such as images, videos and audio recordings. These resources can help students visualize historical events, understand historical context, and explore the past in a more engaging way.
8. *Professional Development:* Online databases can also be a valuable resource for history teachers. For example, educators can use databases to find teaching materials, keep up with the latest research in the field, or connect with other educators and historians.

In general, online databases are a valuable resource for teachers and students of history. They provide access to a wealth of historical materials, support student research and inquiry, and help students develop critical thinking, digital literacy, and collaborative learning skills. By incorporating online databases into their teaching practice, teachers can improve the teaching and learning of history and help students develop a deeper understanding of the past.

INTERACTIVE MAPS

Interactive maps are an effective tool for teaching historical geography. They allow students to visualize historical events, understand spatial relationships and explore connections between different places and cultures. Here are some ways interactive maps can be used to teach historical geography:

1. *Visualization of historical events:* Interactive maps can be used to visualize historical events and their spatial context. Using maps, students can, for example, trace the movements of historical figures, understand the geography of ancient civilizations or study the impact of historical events on different regions.
2. *Understanding Spatial Relationships:* Interactive maps help students understand spatial relationships and connections between different places. Using maps, students can, for

example, compare the size and location of different countries, understand the distribution of natural resources or study the effects of human activity on the environment.

3. *Cultural geography*: we can learn about the cultural geography of various regions with the help of interactive maps. With the help of maps, students can, for example, study the spread of languages, religious or ethnic groups, understand the impact of migration and trade on cultural exchange or explore the connections between different cultures *and civilizations*.
4. *Analyze Historical Maps*: Interactive maps can be used to analyze historical maps and understand how they reflect the perspectives and biases of their creators. For example, students can compare historical maps of the same area from different eras, understand how the geography of the area has changed over time, or explore how different cultures and civilizations presented the world.
5. *Create your own maps*: Interactive maps allow you to create custom maps that highlight specific topics or themes. For example, a student can create maps that show the distribution of historical sites, the effects of historical events on different regions, or the connections between different cultures and civilizations.
6. *Improve Critical Thinking*: Interactive maps can help students develop critical thinking by encouraging them to analyze and interpret spatial data. Using maps, students can, for example, identify patterns and trends, evaluate the reliability and accuracy of different sources, or consider the influence of different factors on the geography of an area.
7. *Facilitating Collaborative Learning*: Interactive maps can facilitate collaborative learning by allowing students to work together to explore historical geography. Using maps, students can, for example, create digital exhibitions, curate historical maps or collaborate on research projects. In general, interactive maps are a valuable tool for teaching historical geography. By incorporating interactive maps into their teaching practice, teachers can improve the teaching and learning of historical geography and help students gain a deeper understanding of the world.

GAMIFICATION IN TEACHING HISTORY

Gamification, the application of game design elements and principles in non-game contexts, is increasingly recognized as a powerful tool for enhancing learning experiences. In the context of history education, gaming can be particularly effective in engaging students, promoting critical thinking, and fostering a deeper understanding of historical events and concepts. Here are some ways gamification can be used to teach history:

Interactive simulations: Gamification can be used to create interactive simulations that allow students to experience historical events firsthand. For example, students can act as historical characters and make decisions that affect the outcome of historical events. In this way, students can gain a deeper understanding of the complexities of history and the factors that influence historical outcomes.

Role-playing: Role-playing can be used to immerse students in historical contexts and encourage them to think critically about historical events and concepts. For example, students can play the role of different historical figures and participate in discussions or negotiations simulating historical events. In this way, students gain a deeper understanding of the perspectives and motives of various historical figures.

History Quests and Challenges: A game can be used to create history quests and challenges that encourage students to explore different aspects of history. For example, students may be tasked with solving historical mysteries, completing historical challenges, or discovering hidden historical objects. In this way, students can deal with history in a more interactive and engaging way.

Digital Escape Rooms: Digital escape rooms can be used to create interesting and challenging puzzles based on historical events and concepts. For example, students may be tasked with solving puzzles related to historical events, characters, or places. In this way, students can develop problem-solving skills and gain a deeper understanding of historical events and concepts.

History Board Games: History board games can be used to teach students about different historical periods, events and concepts. For example, students can play board games that simulate historical battles, explore historical civilizations, or recreate historical events. In this way, students can participate in history in a more interactive and practical way.

Digital Storytelling: Gaming can be used to create digital storytelling experiences that allow students to explore different historical narratives. For example, students can create digital stories based on historical events, people or places. This allows students to develop their storytelling skills and gain a deeper understanding of historical events and concepts. In general, play can be an effective tool for teaching history. It can engage students, promote critical thinking and foster a deeper understanding of historical events and concepts. By incorporating gaming into their teaching practice, teachers can create more engaging and engaging learning experiences that help students develop a deeper understanding of history.

The impact of digital tools on student learning outcomes in history classes can be profound. Digital tools can increase student engagement, provide access to a wider range of resources and facilitate collaborative learning. Here are some ways digital tools can impact student learning in history classes:

1. **Improved Engagement:** Digital tools can make history more engaging and interactive for students. For example, multimedia presentations, virtual reality simulations, and interactive maps can bring historical events to life and help students visualize the past in ways not possible with traditional textbooks alone. This can increase students' interest and motivation, leading to better learning outcomes.
2. **Access to Resources:** Digital tools provide students with access to a wider range of resources than traditional textbooks. For example, online databases, primary source collections, and digital archives can provide students with access to a wealth of historical

material that they can use to support their research and analysis. It can help students better understand historical events and concepts.

3. **Easier Collaboration:** Digital tools can facilitate collaboration between students. Using online environments, students can, for example, collaborate on research projects, create multimedia presentations or collaborate on digital storytelling projects. This can help students develop teamwork and communication skills, as well as a deeper understanding of historical events and concepts.
4. **Personalized Learning:** Digital tools can be used to personalize student learning experiences. For example, students can use online surveys or polls to assess their understanding of historical concepts, and teachers can use the information from these assessments to tailor instruction to meet students' needs. It can help students better understand historical events and concepts.
5. **Better Critical Thinking:** Digital tools can help students develop critical thinking. For example, the student can use online databases and digital archives to assess the credibility and reliability of sources, analyze different perspectives on historical events and draw conclusions from them.

This can help students develop a more nuanced understanding of historical events and their significance.

6. **Improved Information Literacy:** Digital tools can help students develop information literacy. For example, students can use online databases and digital archives to navigate and evaluate different types of sources, understand how information is organized and accessed, and use advanced search techniques to locate related materials. It can help students better understand historical events and concepts.

Overall, digital tools can have a significant impact on student learning outcomes in history classes. They can increase engagement, provide access to a wider range of resources, facilitate collaboration, personalize learning experiences, improve critical thinking and improve information literacy. By incorporating digital tools into their teaching practice, teachers can create more engaging and effective learning experiences that help students deepen their understanding of history.

STRATEGIES FOR INTEGRATING DIGITAL RESOURCES INTO HISTORY EDUCATION:

Integrating digital resources into the history curriculum can significantly improve student learning. Here are some strategies for effectively incorporating digital tools and resources into history education:

1. **Choose Appropriate Resources:** Choose digital resources that match the learning objectives of the history curriculum. Consider the age, grade level, and prior knowledge of your students when choosing tools. Make sure resources are accurate, reliable and age appropriate.

2. **Creating Multimedia Presentations:** Use digital tools to create multimedia presentations that bring historical events to life. Add images, videos and audio clips to make content more engaging and accessible for students. Tools like PowerPoint, Prezi or Google Slides can be used for this.
3. **Using Online Databases:** Introduce students to online databases that contain primary and secondary sources related to historical events. Encourage students to explore these databases and use the information they find to support research and analysis.
4. **Using Interactive Maps:** Use interactive maps to help students see historical events and understand their geographic context. Tools such as Google Earth or ArcGIS can be used to create interactive maps that allow students to explore historical places and track the movements of historical figures.
5. **Virtual Reality Engagement:** Use virtual reality (VR) simulations to immerse students in historical situations and events. VR headsets can be used to create virtual tours of historical sites or simulate historical events, allowing students to experience history in a more interactive and interesting way.
6. **Encourage Digital Storytelling:** Encourage students to use digital tools to create their own historical narratives. Students can use tools like StoryMap JS or Adobe Spark to create digital stories that include text, images, and multimedia elements.
7. **Improve Collaboration:** Use digital tools to facilitate collaboration between students. Using Google Docs or Microsoft Teams, for example, students can collaborate on research projects or create multimedia presentations together.
8. **Promotion of Critical Thinking:** Help students develop critical thinking skills using digital resources. Encourages students to evaluate the credibility and reliability of online sources and to consider different perspectives on historical events.
9. **Providing access to primary sources:** Use digital tools to provide students with access to primary sources related to historical events. For example, students can explore digital archives or online museums to access primary sources such as letters, diaries, and photographs.
10. **Assessing Student Learning:** Use digital tools to assess student learning. For example, students can create digital portfolios to showcase their work or use online quizzes or surveys to demonstrate their understanding of historical concepts. By integrating digital resources into the history curriculum, teachers can create a more engaging and interactive learning experience for students.

CHALLENGES OF NAVIGATING THE DIGITAL FRONTIER

Despite the many benefits of using digital tools and resources in the history classroom, there are also challenges that teachers must overcome. For example, the number of digital resources available can be overwhelming, and it can be difficult for teachers to determine

which resources are best for their students. In addition, there is a danger that students become too attached to digital tools and forget the importance of critical thinking and analysis. It is important for teachers to find a balance between the use of digital tools to enhance learning and the development of students necessary for critical thinking and independent evaluation of information.

PRACTICAL TIPS AND STRATEGIES

To effectively navigate the digital frontier, educators can use the following practical tips and strategies:

Start Small: Start by adding one or two digital tools or resources to your teaching practice. This allows familiarization with the technology and evaluation of its effectiveness before expanding the use of digital tools.

Apply for Professional Development: Take advantage of professional development opportunities to learn more about digital tools and resources that can improve your teaching practice. Many organizations offer workshops and trainings especially for trainers.

Collaborate with Colleagues: Share ideas and resources with your colleagues to incorporate digital tools into your teaching practice. Collaborating with others can help you find new ways to use technology in the history classroom.

Reflect on Your Practice: Regularly reflect on your teaching practice and evaluate the effectiveness of the digital tools and resources you use. Consider how you can improve the use of technology to improve student learning.

CONCLUSION

Achieving excellent history teaching requires a commitment to continuous improvement and a willingness to adopt new technologies and teaching methods. By effectively navigating the digital frontier, teachers can improve their teaching practices and provide students with a more engaging and enriching learning experience.

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Education & Sustainable Development

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ABSTRACT

The education system has to move its focus from providing a degree at the end of the learning process to enhancing problem solving of students to handle real life situations. Education has to be made career oriented and not confined to scoring marks, which provide no valuable input in molding the professional out of a student.

According to the survey by IBM Institute for Business Value, the very skills needed for workforce success are the same skills exiting students most lack including analysis and problem solving; collaboration and team work; business-context communication; and flexibility, agility and adaptability. It is important to provide internship and apprenticeship opportunities to students right from the start. Training programmes should not be confined to any one aspect of business. Students need to understand each and every part of the industry in order to discover their interests and develop a skill set as per their forte. This will lead to well qualified and aptly trained workforce. Experts from industries can share their experiences with students and provide the intricate detail training which can only come through experience based learning.

Technological advancements have changed the world as we knew it a decade ago. Industries are heavily relying on technology to survive competition. Technology has led to consumer friendly offerings a lower cost of production. Use of technology should be taught to the students rather than focusing on outdated the ones. Workforce skills have to be kept sync with the technology. Industries must share their technological innovations and ideas with the education sector to keep the keep the system abreast of the advancements.

Keywords: Sustainable Development Goal, Higher Education, Threat for Future.

INTRODUCTION

“The world has enough for everyone’s need, but not enough for everyone’s greed”.

– Mahatama Gandhi

Indisputably the Sustainable Development Goals are a global call to action to end poverty, protect the earth’s environment and climate, and ensure that people everywhere can enjoy peace and prosperity. Achieving the United National Sustainable Development Goals (UN SDGs) by 2030 is crucial for the nations to achieve a holistic development in their economics. UN SDGs are designed with the motive of ‘learning none behind’. For a peaceful and prosperous world, to begin with we at least need to focus on ‘learning none behind’. When all the 193 nations who have signed for the UN SDGs achieve the UN SDGs the world definitely would be a better place for people to live in.

It is commonly acknowledged that education is a cure all remedy for all ills of the society. It is a great weapon bringing positive change as we can use education to create awareness and motivation to deterioration being caused to the society vis a vis the plane. But the pertinent that remain to be answers one questions are how does one work on social does and behaviour change, which is so essential for required transformation. How it can one built the receptivity of the people across the world towards environmental concerns by improve not their quality of life in a sustainable manner? Possible solutions for above questions are provided in Sustainable Development Goal-4 of United Nations Agenda 2030, Goal-4 sets the target ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all by 2030. The specific targets for this goal are:

- By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.
- By 2030, ensure that all girls and boys have access to quality early childhood development, and preprimary education so that they are ready for primary education.
- By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.
- By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- By 2030, eliminate gender disparities in education and ensure equal access to all levels of educational and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.
- By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.

- By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non- violence, global citizenship appreciation of cultural diversity and of culture's contribution to sustainable development.

Looking at various SDGs, we may think whether is it actually possible for us to achieve them till 2030. And most likely how are we going to spread awareness about these issues that are covered in a nation like India, where most of the people go for higher education to become capable enough to earn a handsome amount of capital for their survival. This approach of the students has to be addressed first when it comes to higher education and how are we going to use it sustainably for the overall development of all the people of the nation? Many researchers have pointed out how these goals are unattainable because somehow, they are hatched to the essential orthodoxy methods of capitalism. Reduction of poverty, overall development of health and the type of higher education followed in their modern world doesn't actually go hand in hand with the goal that is one of the highest problems. Along with that the education that the students receive. The system through which they get admission, the dropout rates, lack of interest of the student in the chosen field, lack of opportunities due to increase in population all of them play a major role in the development of a nation.

THE PRESENT SCENARIO

In present times with globalization and technological advancements, national boundaries confined to just maps, skill and job requirements have changed tremendously, more so in the past decade. Technology has seen tremendous innovations and growth leading to new specialized jobs which never existed before. Industries have needs which cannot be fulfilled with past educational training therefore, the education system is lagging behind, relying on outdated teaching methodologies, lack research initiatives, old modules and training tools.

Emerging Issues in the Present Posing Threat for the Future

The most important threat right now is the complacency of the education system. Industry and education institutions can no longer survive as two independent units of society. They need to work together hand in hand as the education system nurtures the workforce which is required by industries that is why without a proper workforce, industries would not sustain. And with no optimum source of livelihood with the present inadequate education, students will be left disheartened, disgusted and directionless.

Lackadaisical Attitude

The education system continues to work in a non half hearted and laid back manner which will ultimately hurt the society whole moreover reluctance to adopt change and modernism in thoughts and actions is a major road block on the path of development.

Lack of Political Willpower and Motives

Most of the policy decisions are nothing by election campaigns for the particular political party as vote bank politics. The objective of imparting usable productive knowledge is conspicuously ignored.

Nepotism Cronyism by Industries

Big business houses do not give a free and fair chance to students and recruit their own known less qualified as employees which demoralizes hardworking students.

Obsolete Archaic Teaching

Teaching methods, methodologies, modules and style remains outdated. Teachers are not trained or encouraged to use new methods and current technology to impart knowledge. Scoring exams with theoretical knowledge is stressed without considering the practical approach, which is actually what is required.

Lack of Communication

The education system and industries remain aloof in splendid isolation which creates a gap between what is required and what is offered. Education institutes act as alien to the present complex work requirements, new jobs due to rapid technological advancements which never existed before, fast obsolescence of previous learning. Industries do not take the initiative to help students and education system understand what is expected of them.

Commercialization of Education leading to Deterioration in Quality

Education institutions have seen a tremendous wave of privatization which has led to degrading quality of education. This is mainly due to low funding by government for public institutions and colleges. Moreover most big business houses are setting up their own institutes from which they recruit the major chunk of their workforce requirement. This adds to the already high unemployment rate of graduates from other institutes.

Exorbitantly Rising Cost of Obtaining a Degree

“With privatization comes increased cost at which students now get a degree. This is discouraging students from going for higher education as government funded institutes are not providing the required training, while private institutes are too costly for most of the students.

The responsible authorities can no longer remain reticent on the issue of the quality of education and learning being imparted. However, stakeholders still believe that these are weaknesses which can be overcome with detailed planning and urgent policy changes. A thorough and pragmatic approach by both industries and education system is needed. The future isn't bleak and all the stakeholders need to work together for a productive future.

SUGGESTIONS FOR A SUSTAINABLE FUTURE

“Education is not just about going to school and getting a degree. It’s about widening your knowledge and absorbing the truth about life.

- *Shakuntala Devi*

The industries create and witness the changes first hand which are creating the new and complex work skills. Therefore the industries have to help the higher education system to keep pace with the changes so as to train the future workforce. The education system has to understand that giving the students a degree-alone will not suffice the motive of education. Today, education needs to polish and create a confident working professional, with a realistic understanding of the actual work environment. The industry and education system have to work in partnership so as to create the optimum framework in which to education and develop the workforce for the future. A fundamental transformation of the whole system is the need of the hour.

Industry Linkage and Involvement at Curriculum Level is the Need of the Hour

Industries should be involved in the education system right from the inception of the coursework. This will help start work in the right direction and save precious time and efforts of educational institutions, industries and most importantly the students. Skill related gaps can be filled right at the initial stage.

Revamping of Teaching Methodology

The education system needs to revamp its teaching mechanism to keep up with the changing requirements. Cramming syllabus and giving exams are far from optimum for the professional environment. Students need to be made aware of how the theories they are learning apply to the real world scenario. Industries could help develop mock market situations, provide detailed case studies for inculcating a practical outlook, design seminars for students to understand the everyday situations that might occur in the real world; Teachers should be trained about the industry workings so that they can impart actual knowledge and not remain confined to syllabus alone, which might become outdated anytime.

Research Initiatives for Research & Development

Education system should provide the necessary resources and an environment conducive to inculcating a habit of research among students. This will help get a deep understanding of present and pave a clear way for the future. industries can open up to researches and let them go through their past data, history, work policies etc. industries can benefit as logical solutions can be obtained from such insightful research to their everyday problems.

Robust Campus Recruitments for Stable Career

Every institute claims to provide around 100% placement to their students. But those placements are mostly not fitting to the efforts the students and their families have put into

getting the required qualification. The degrees are not qualifying the students for the future job in actual terms. Industries and education system has to work together to train the students. Mock working environments should be created. Better internship opportunities should be given to every student. Industries should themselves take the initiative and train the students before recruiting from campus.

Dearth of Adequate Resources

The education policy has to ensure that higher education institutes receive the needed funding and technology. Everything will remain a mere blueprint on paper if the financial resources are insufficient to put the plan to work. The concerned authorities can collaborate with industries to make sure that gaps are fulfilled.

SUMMARY

Concludingly we can say the quality of education with practical skill knowledge for productive employment is a pressing issue, not just for the education system in particular, but the industries and society at large. The problem has to be dealt with in a united manner by all three stakeholders as the future does not belong to any one of these alone. It is the responsibility of all three to help the present generation learn a sustainable future is needed and how they need to contribute to its making.

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Sustainable Development Goals and Education: A Synergistic Relationship

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ABSTRACT

A layperson often equates education with the qualifications they possess. Academic success is frequently seen as synonymous with education, and vice versa. However, as we embrace the 21st century, it becomes imperative to recognize that education represents the cumulative sum of an individual's knowledge, qualifications, experiences, and awareness. These components are not limited to formal educational institutions but are essential for building a just and equitable society. In 2015, the United Nations General Assembly adopted 17 Sustainable Development Goals (SDGs) aimed at creating a sustainable world by 2030. These SDGs garnered support from 193 member countries, emphasizing the significance of collective action and participation. It is crucial to acknowledge that education is not merely one of the SDGs; rather, it serves as a pivotal means to achieve the majority of these goals. The SDGs are interrelated and cannot be realized in isolation. Education empowers individuals to not only recognize prevailing issues and challenges but also to formulate sustainable, long-term solutions that benefit not only themselves but society as a whole. An educated individual is one who acknowledges their privilege and takes proactive steps towards uplifting sections of society lacking the means to break the cycle of intergenerational misfortune. This conceptual paper delves into the intricate relationship between education and the Sustainable Development Goals, critically analyzing how widespread education serves as a catalyst for comprehensive development across all segments of society.

Keywords: Education, Sustainable Development Goals, Equity, Empowerment

INTRODUCTION

Education can be defined as the process of acquiring knowledge, skills, values, and competencies through various formal and informal means, with the goal of fostering personal

growth, intellectual development, and societal progress (UNESCO, 2020). Development is impossible in any section of society without proper education. It has a bearing on every section of the world that we live in. It affects every sphere of life without us even realizing it. We cannot aim toward progress without taking education into account. This is one of the many reasons that education has been considered a fundamental right by the United Nations for several decades now. Its recognition as a fundamental right can be traced back to the year 1948 when the UN General Assembly adopted the Universal Declaration of Human Rights (UDHR). Since then, it has been a part of several agreements, policies, and documents, as a means of progress and development. To understand the relationship between the Sustainable Development Goals (SDGs) and education, it is important that we first look at how the SDGs came to be. It is imperative that we look at the Millennium Development Goals, so as to understand the need to have Sustainable Development Goals, and their purpose.

FORMULATION OF THE SDGs

In the year 2000, the United Nations provided the world with 8 Millennium Development Goals (MDGs). These goals were put down in lieu of the issues being encountered internationally by several countries. The MDGs aimed to zero in on matters of health, environmental sustainability, poverty, education, and gender equality in 15 years, which is by the year 2015 (United Nations, 2000). The MDGs were adopted by world leaders in September 2000. The focus was to commit to critical issues of development through international associations and partnerships. Improving the living conditions of people in developing nations was one of the major driving forces of the Millennium Development Goals. The MDGs were a significant step toward development that was not limited to any specific country but instead focused on the needs of the global community. These goals achieved pivotal success in increasing primary school enrolments, reducing poverty, and providing access to clean drinking water. However, the scope of the MDGs was narrow and lacked the comprehensiveness that was required in matters concerning the developmental issues of the world. One of the shortcomings of the MDGs is the insufficient focus on issues concerning equality and inclusivity (United Nations Development Programme, 2015). Table 1 below lists the 8 MDGs decided upon in the year 2000.

Table 1: The Millennium Development Goals

Eradicate extreme poverty and hunger
Achieve universal primary education
Promote gender equality and empower women
Reduce child mortality
Improve maternal health
Combat HIV/AIDS, malaria and other diseases
Ensure environmental sustainability
Global partnership for development

The Sustainable Development Goals (SDGs) widened the scope of the MDGs. They were adopted globally in the year 2015. The SDGs consist of 17 goals and 169 targets. The goals build upon the shortcomings of the MDGs and address a range of issues beyond poverty and health. The SDGs furthered the scope of global development goals, which were earlier being addressed by the MDGs. The notable difference between the SDGs and the MDGs lies in the fact that the goals established by the former are interconnected in nature. This means that no goal can be realized in isolation, and its achievement is dependent upon the realization of all the goals that have been formulated. The SDGs seek collaboration not just from the governments or the different Heads of state, but also from the private sector, non-government sector, academia, local communities, and civil society. These goals are formulated on the premise of multi-stakeholder collaboration so that the effects of their success can reach a wider section of the global community (United Nations, 2015). Just like the MDGs, the SDGs also have a timeframe of 15 years, which is till the year 2030, to achieve the adopted goals. The goals formulated are more comprehensive and inclusive when compared with their predecessor. Table 2 below lists the 17 Sustainable Development Goals that have been adopted by the United Nations member countries.

Table 2: The Sustainable Development Goals

<ol style="list-style-type: none"> 1. No Poverty 2. Zero Hunger 3. Good Health and well-being 4. Quality Education 5. Gender Equality 6. Clean water and sanitation 7. Affordable and clean energy 8. Decent work and economic growth 9. Industry, innovation, and infrastructure 10. Reduced inequalities 11. Sustainable cities and communities 12. Responsible consumption and production 13. Climate action 14. Life below water 15. Life on land 16. Peace, justice, and strong institutions 17. Partnerships for the goals

INTERCONNECTEDNESS AMONG THE SDGs

The 17 Sustainable Development Goals (SDGs) have been formulated in a way that recognizes their interconnectedness. True development can only be realized when all the goals are achieved by 2030. The attainment of the 'Good Health and Well-being' goal, for instance, is

reliant on the concurrent achievement of 'Clean Water and Sanitation'. Similarly, the 'Climate Action' objective is inseparable from 'Sustainable Cities and Communities', and vice versa. Thus, it is evident that these goals are interlinked and mutually reinforcing.

Notably, 'Quality Education' is not just one among the Sustainable Development Goals; it also serves as a critical means to achieve a majority of these goals.

EDUCATION AS THE FOUNDATION OF PROGRESS

To create a just, equitable, and righteous society, it is essential to recognize the lasting impact of an educated and aware population. The possession of qualifications from educational institutions alone cannot serve as the sole criteria for determining an individual's education. A truly educated individual is one who acknowledges their privilege and demonstrates sensitivity to the needs of society.

Educators, economists, policymakers, social scientists, and global development organizations all share a common belief: an educated population is an invaluable asset to society. Gary Becker's Human Capital Theory, developed in 1964, underscores the pivotal role of education in enhancing human capital, thereby driving economic growth and development.

Moreover, education plays a vital role in cultivating critical thinking skills. These skills empower individuals to approach problems from multiple perspectives and arrive at solutions that benefit society as a whole (Richard Paul, 2006). Critical thinkers possess the capacity to make informed and well-considered decisions (Halpern, 2014). In essence, education serves as the cornerstone of progress in a society that prioritizes the needs of all its members over the needs of a select few. It holds immense significance in both the social and personal spheres of individuals' lives.

When considering the Sustainable Development Goals, it becomes evident that their achievement hinges upon the recognition of their paramount importance in improving our world. Solutions to the most pressing issues can only be derived when we acknowledge the very existence of these problems. This acknowledgment materializes when both populations and organizations are armed with the cognitive capacity to scrutinize situations critically and formulate comprehensive action plans that effectively address the long-term challenges that lie ahead.

RELATIONSHIP BETWEEN SDGs AND EDUCATION

The Sustainable Development Goals (SDGs), established by the United Nations in 2015, serve as a comprehensive roadmap for addressing global challenges and enhancing the quality of life worldwide. They target issues that have consistently affected people across the globe and must be resolved to achieve sustainable long-term development. However, it is crucial to recognize that meaningful progress can only occur through collective efforts involving governments and organizations at all levels. Education should not merely be viewed as one

of the Sustainable Development Goals but as a fundamental means to achieve the entirety of these goals. Therefore, a thorough examination of the education system is imperative to identify deficiencies and inconsistencies. Strengthening the education system is a step toward not only imparting relevant knowledge and skills to students but also ensuring accessibility to education for learners from diverse backgrounds. Quality education fosters curiosity and critical thinking among students. Investing in education yields enduring results, making it an essential component of sustainable development. An educated population is an asset to society, actively contributing rather than merely benefiting from education. Consequently, efforts to provide affordable and accessible education to all pave the way for a future where the masses are informed, responsible, and engaged in the pursuit of a higher quality of life for all.

The Sustainable Development Goals (SDGs) are intricately designed to emphasize that no single goal can be achieved in isolation. These goals collectively address global imperatives, necessitating continuous and concerted efforts. Examining the goals of 'No Poverty' and 'Zero Hunger,' their profound interconnection becomes apparent. These objectives are inseparable; one cannot be realized without the other. Claiming the eradication of poverty while people still suffer from hunger would constitute a logical paradox. Hunger and poverty are deeply entwined, with malnutrition, a consequence of poverty, impairing both individuals' health and productivity, rendering it arduous to escape poverty's grasp. Education emerges as a potent tool in confronting the challenges posed by poverty and hunger. It enhances individuals' employability by equipping them with the requisite skills for the workplace (Cedefop, 2016). Moreover, education is closely associated with reduced unemployment rates, as individuals with higher levels of education are less prone to long-term unemployment (OECD, 2017). Additionally, it serves as a bulwark against intergenerational poverty, as children of parents with higher educational attainment exhibit a greater predisposition toward improved socio-economic outcomes (Chetty, 2014). Therefore, ensuring widespread access to education is imperative in alleviating the hardships wrought by poverty and hunger, ultimately contributing to the realization of these vital SDGs.

When we examine the Sustainable Development Goal of 'Decent work and economic growth,' it becomes imperative to emphasize the significance of equipping individuals with education and skills that are pertinent in the contemporary context. Extensive research over the years consistently reinforces the correlation between higher levels of education and increased earning potential (Autor, 2014). Higher education enhances an individual's likelihood of securing employment and active participation in the labor force (Carneiro, 2005). The provision of relevant and high-quality education minimizes the disparity between an individual's skills and the requirements of potential employers, ensuring that they find employment in workplaces that value their skills (World Bank, 2019). Education not only bolsters individuals' earning potential and skill sets but also contributes to economic growth. It nurtures competencies in innovation and entrepreneurship, prompting individuals to engage in research and innovative practices, which directly enriches the economy (Mincer,

1996). Consequently, education fosters an environment where individuals have access to employment opportunities, actively participating in activities that enhance economic growth.

When addressing the Sustainable Development Goal of 'Decent work and economic growth,' it is essential to recognize the interplay with the goal of 'Industry, innovation, and infrastructure.' Decent working conditions create an environment conducive to innovation. In the 21st century, innovation encompasses the utilization of technology and research to enhance productivity, thus making a positive contribution to economic growth. A well-educated populace is more likely to generate innovative ideas and harness an entrepreneurial mindset, thereby making valuable contributions to the economy (Bloom, 2020). Education equips individuals with the skills and knowledge necessary to participate in the workforce and, in turn, contribute to the advancement of industries. An educated workforce is not only proficient but also adaptable, ultimately bolstering industrial sectors. In today's landscape, infrastructure encompasses not just physical but also digital components. Quality education, as emphasized in the fourth Sustainable Development Goal, produces professionals who play pivotal roles in developing and enhancing physical infrastructure, including buildings, roads, and bridges, while also supporting existing digital infrastructure and developing new ones to meet evolving needs. The expansion of digital infrastructure augments connectivity and networking in a world increasingly reliant on collaborative work and partnerships.

The relationship between the 'Good health and well-being' goal and education is substantial and well-supported by extensive research and literature. Education empowers individuals with the knowledge necessary to lead lives marked by awareness, enabling them to make informed decisions that positively impact their health. An educated populace is more adept at making the requisite lifestyle choices and adjustments conducive to their physical and mental well-being (Cutler, 2010). Moreover, educated mothers exhibit a higher likelihood of seeking prenatal care, adhering to safe childbirth practices, and possessing a better understanding of infant nutritional needs (Currie, 2003). Education also opens doors to improved employment opportunities, subsequently enhancing access to quality healthcare services. In this context, it intersects with the 'Zero poverty' goal, as poverty reduction efforts generate employment opportunities, consequently improving healthcare accessibility. Significantly, the 'Clean water and sanitation' goal directly influences 'Good health and well-being.' Access to clean water serves as a preventive measure against waterborne diseases such as cholera, typhoid, and dysentery. Furthermore, the availability of clean water in schools holds relevance not only for health but also for achieving the Sustainable Development Goal of 'Quality education,' ensuring that students do not miss school due to a lack of clean water. It is worth noting that many girls skip school during menstruation due to the unavailability of clean water and sanitation facilities. Clean water and proper sanitation significantly reduce the discomfort experienced by girls during menstruation and promote healthy menstrual hygiene practices (Sommer, 2013).

Education plays a pivotal role in mitigating inequalities to a significant degree. The Sustainable Development Goals, specifically 'Gender equality' and 'Reducing inequalities,' are crucial for advancing social progress and fostering a just and equitable society. Education equips individuals with the knowledge and skills necessary to seek employment and participate in the workforce. However, education's impact extends beyond skill development; it also broadens perspectives. It challenges ingrained stigmas and stereotypes associated with gender, race, caste, class, ethnicity, and religious background. It compels learners to introspect and critically assess their own biases and prejudices, ultimately leading to their abandonment. Education wields the power to dismantle gender stereotypes. These stereotypes perpetuate disparities among different genders, resulting in unequal opportunities for a particular gender. Ensuring girls' and women's access to quality education empowers them with the skills required to enter the workforce and progress socially and financially. Guaranteeing education availability for girls and women fosters their social representation, thereby challenging prevailing stereotypes and traditional gender roles. Educating individuals equips them with the skills needed for employment, breaking the cycle of poverty. Higher levels of education correlate with increased income and access to superior opportunities, thus alleviating global income inequality (Krueger, 2001). When individuals from socially disadvantaged backgrounds gain access to formal education, they acquire the skills necessary to secure better jobs, enter the workforce, and achieve the representation required to integrate into mainstream society. Education is not merely a means to enhance existing practices but also a catalyst for changing practices that favor only a select few. It eradicates social, gender, and income inequalities, ultimately enhancing people's quality of life.

Education serves as a potent catalyst for advancing the Sustainable Development Goal of 'Peace, justice, and strong institutions.' Educated individuals are inclined towards addressing the root causes of conflicts through constructive and peaceful dialogue, leveraging their knowledge and learning (UNESCO, 2011). They exhibit a greater propensity to seek legal remedies when confronted with injustice and possess enhanced capabilities to navigate legal processes (Antkowiak, 2013). Furthermore, educated individuals make substantial contributions to the efficacy of governmental, non-governmental, and other organizations by participating in the workforce. A well-educated populace upholds the principles of democracy by demanding transparency, accountability, and responsibility from their governments. Education plays a pivotal role in creating awareness among citizens regarding their surroundings and motivates them to seek peaceful resolutions to the crises they may encounter.

CONCLUSION

Education transcends being a standalone Sustainable Development Goal; it serves as a foundational element for the achievement of all other goals. It acts as a central pillar for development across various aspects of life as we experience it today. Its intrinsic value extends beyond an individual's academic accomplishments to the practical application of knowledge

in the real world, with the aim of making it a better place. An educated mind naturally leans towards addressing problems and seeking solutions. It's crucial to recognize that ensuring universal access to education necessitates addressing basic needs like hunger, thirst, and health. Someone grappling with hunger is understandably focused on securing at least one meal rather than pursuing education for employment prospects. Fulfilling these basic needs is a prerequisite for breaking the cycle of poverty and instilling the skills and knowledge required for seeking and retaining employment. Nevertheless, it's imperative to understand that employment and jobs should not constitute the sole societal objectives. The growth of a society is profoundly influenced by the beliefs held by its members. Education fosters a critical perspective and an ability to comprehend viewpoints different from our own. It is incumbent upon us to realize these Sustainable Development Goals to promote comprehensive global development and construct a just and equitable society that embraces all its members.

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Formal Inclusion of SDG's in Syllabus

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ABSTRACT

Education is an essential component of the SDGs. SDGs are the forefront of govt initiatives across the world. As a concept, sustainable development advances improvement and equality in economy rights, social prosperity and environmental protection. Sustainable development is the complex concept of the world's evolution, if SD is reached, the world life will become better for everybody indeed. The 70th Session of the United Nations General Assembly outlined 17 Sustainable Development Goals (SDGs) a guiding framework for further global development from 2015 to 2030. Among all the SDGs we will mark Goal No.4 – "Quality education" – The fourth goal (Goal 4: Quality Education) highlights the importance of education in global sustainable development. This goal is crucial to achieving all other goals and aims to "ensure inclusive and high-quality education and opportunities for lifelong learning. Education for Sustainable Development is a lifetime process critical to obtaining a high-quality education. It enhances cognitive, social, emotional, and behavioural learning. It includes learning content and outcomes, pedagogy, and the learning environment and is comprehensive and transformational.

For achieving these goals, educational institutes and educators need to guide students to monitor global issues and foster their sustainability consciousness. Education for Sustainable Development (ESD) aims to enlighten people's consciousness on sustainable development through future education, including natural resources protection, sustainable consumption, global citizenship education, gender equality, etc.; thus, it aims to make a substantial contribution to the achievement of the SDGs .

This theme based paper is a positive step towards raising awareness and promoting action towards global satisfaction.

Keywords: Sustainable Development Goals (SDGs), Education for Sustainable Development, Quality Education.

INTRODUCTION

Key for the country's stable development is education. The main purpose of the education for the sustainable development is to integrate ideas and principles of the SD, which are used for personality formation with the comprehensive view of the world and critical, social, economical intelligence, active civil position, including all education degrees. It is known that "sustainable development" (SD) is defined as the development, "which satisfies present times necessities, not endangering future generations' opportunities" [1]. As a concept, sustainable development advances improvement and equality in economy rights, social prosperity and environmental protection. Sustainable development is the complex concept of the world's evolution, if SD is reached, the world life will become better for everybody indeed.

To ensure SD attainment progress, new agenda for development was accepted by 193 UN member countries in September 2015, *the 2030 agenda for sustainable development* is aimed on 17 goals for sustainable development (SDG).

As the overarching paradigm of the United Nations (UN), sustainable development pursues a balanced development of environmental, social and economic goals to improve the quality of life for the future generation . The 70th Session of the United Nations General Assembly outlined 17 Sustainable Development Goals (SDGs) [2], a guiding framework for further global development from 2015 to 2030 after the expiration of the Millennium Development Goals (MDGs) [3,4], in an effort to sustain the well-being of both humankind and the planet [5,6]. The fourth goal (Goal 4: Quality Education) highlights the importance of education in global sustainable development [7,8]. This goal is crucial to achieving all other goals and aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" [9]. From this perspective, Goal 4 implies that everyone around the world will be able to achieve lifelong active learning

Sustainable Development Goals:

The Sustainable Development Goals (SDGs), also known as the Global Goals, are a set of 17 interconnected and ambitious goals adopted by all United Nations Member States in September 2015. These goals are designed to address a wide range of global challenges and guide global efforts toward a more sustainable, equitable, and prosperous future. The SDGs are meant to be achieved by 2030 and build on the successes and lessons learned from the Millennium Development Goals (MDGs).

Definition of Sustainable Development

According to Brundtland Commission Report (1988): "Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The World Business Council for Sustainable Development (WBCSD) says that, "Sustainable development involves the simultaneous pursuit of economic prosperity, environmental quality, and social equity. Companies aiming for sustainability need to perform not against a single, financial bottom line but the triple bottom line."

OBJECTIVES OF SUSTAINABLE DEVELOPMENT

- **Economic objective** – "Increasing the number of goods and services produced in the technological realm, the efficient use of mineral resources, biological, energy, and flow of information, and mineral resource adaptation and reprocessing technologies."
- **Social objective** – "A fair distribution of products and services among social contract participants at the local, national, and global levels; Economic, social, and environmental association systems; and sustaining cultural diversity to support faster adaptation of change at the local, national, and global levels are all examples of durable frameworks of political, institutional, or information systems that provide flexibility and self-regulation of social and economic issues."
- **Ecological objective** – "Biodiversity preservation to promote the ability to alter the scheme area condition or geo biosphere; self-regulation mechanisms and natural cycle periods in the biosphere."

GOALS FOR SUSTAINABLE DEVELOPMENT IN THE 2030 AGENDA.

- Goal 1: Poverty should be abolished worldwide in all aspects.
- Goal 2: Reduce hunger, increase food and nutrition security, and encourage agriculture that is sustainable.
- Goal 3: Assure that person of all ages are healthy and happy.
- Goal 4: Guarantee that almost all students get a high-quality, inclusive, and equitable education, as well as opportunities for lifelong learning.
- Goal 5: To achieve gender equality, all women and girls must be empowered.
- Goal 6. Ensure universal access to water and sanitation, as well as long-term management.
- Goal 7. Ensure that everyone has access to cheap, dependable, sustainable, and contemporary energy.
- Goal 8: Support long-term, equitable, and sustainable economic, as well as productive employment and decent labour for all people.
- Goal 9: Improve infrastructure resiliency, promote equitable and sustainable industrialization, and encourage innovation.
- Goal 10: Minimize inequalities within and among countries.

- Goal 11. Improve the inclusiveness, security, resilience, and long-term viability of cities and human settlements.
- Goal 12: Maintain long-term consumption and production patterns.
- Goal 13: Take prompt action to mitigate the effects of climate change.
- Goal 14: For long-term development, preserve and sustainably utilize the oceans, seas, and marine resources.
- Goal 15: Long-term usage of terrestrial ecosystems should be protected, restored, and promoted. Stopping and reversing land degradation and biodiversity loss through forest management, combatting desertification, and pausing and reversing land degradation are all options.
- Goal 16: At all levels, to ensure long-term development, promote peaceful and inclusive communities, ensure widespread access to justice and create institutions that are effective, responsible, and inclusive.
- Goal 17: Strengthen and revive the Global Partnership for Sustainable Development's implementation mechanisms.

TARGETS OF 2030 SDG

- Ensure that all girls and boys, in line with Goal 4 will have access to a free, egalitarian, and high-quality primary and secondary education that leads to relevant and effective learning outcomes.
- By 2030, to prepare for primary school, all girls and boys have access to high-quality early childhood development, care, and preschool education.
- Ensure equitable access to cheap and high-quality technical, vocational, and tertiary education for all women and men, including university students, by 2030.
- By 2030, the number of young people and adults with the skills needed for employment, decent job, and entrepreneurship will have grown.
- Ensure that the most disadvantaged, such as those with disabilities, indigenous peoples, and children in vulnerable situations, have fair access to all levels of education and vocational training by 2030.
- By 2030, increase in the supply of educated teachers is needed at priority level in developing nations, particularly in LDCs and small island developing states, through international teacher education partnerships.

ROLE OF EDUCATION IN ENSURING SUSTAINABLE DEVELOPMENT :

Education connects the past with the present, as well as the present with the future. ESD has a much broader reach and complements adjectival schooling. In another way, ESD

encompasses many aspects of these well-known and well-recognized study areas (Bhandari & Abe, 2003). Choosing the path of sustainable growth will entail a significant adjustment in our thinking and behaviour. Individuals must become sustainability change-makers to create a more sustainable society and participate in sustainability-related issues described by the SDGs. To contribute to long-term growth, they must have the necessary knowledge, skills, values, and attitudes. As a result, education is essential for long-term success. However, not all types of schooling encourage long-term development. Simply promoting economic growth through education might lead to an increase in unsustainable spending habits.

INCLUSION OF SDGS IN SYLLABUS:

Incorporating the United Nations Sustainable Development Goals (SDGs) into a syllabus is a commendable effort to raise awareness and promote sustainable development among students. The formal inclusion of the Sustainable Development Goals (SDGs) in syllabi across educational institutions represents a critical and visionary step towards shaping a better future. By integrating these global goals into the syllabus, we not only equip students with knowledge and skills needed to address pressing societal and environmental challenges but also instill in them a sense of responsibility and purpose. The incorporation of SDGs into syllabi fosters a new generation of informed and proactive global citizens, capable of critically analyzing complex issues, collaborating across disciplines and borders, and driving positive change. It prepares students to confront the pressing challenges of our time, from climate change to poverty, and empowers them to contribute meaningfully to achieving these ambitious goals.

Furthermore, it sends a powerful message that education is not just about acquiring facts and figures but also about cultivating values, ethics, and a deep understanding of the world's most pressing issues. It positions education as a transformative force for sustainable development.

In embracing the SDGs within syllabi, we demonstrate our commitment to a collective vision of a more prosperous, equitable, and sustainable world by 2030. This commitment transcends classrooms and lecture halls, extending to communities, industries, and governments. It challenges us to think critically, innovate, and collaborate in ways that were once unimaginable. Integrating the SDGs into a syllabus is an ongoing process that requires dedication and adaptation. It can have a positive impact not only on students' understanding of sustainability but also on their commitment to making a difference in the world.

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Curriculum of the SDG's

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ABSTRACT

A global issue is a matter that concerns people worldwide. The compilation of global concerns includes broad social, economic and environmental problems as well as other phenomena that have an impact on people all around the world. The United Nations has listed wide range of issues concerning global population which includes poverty, child labor, food security, weapons of mass destruction, lack of equity and equality, water scarcity, unavailability of quality education to name a few. In order to save our globe and make it a better place to live in, this required the entire world to step forward and come together to decide on the course of action.

The framework for achieving a better, more sustainable future for every individual was designed and adopted in the form of the Sustainable Development Goals during the 70th UN General Assembly session in September 2015. These goals make up a programme of sustainable, universal, and ambitious development that was created with the active involvement of UNESCO.

Presently, Sustainable Development is essential for both the present and future well-being of humanity. One powerful force that not solely supports national development but also contributes to its sustainability is education. Development, whether social, economic, political, or environmental, depends on it. Education encourages the acquisition of the knowledge and abilities necessary for achieving sustainable development (SD). This theme based paper focuses on the necessity of incorporating sustainable development goals into curricula and the ways of implementation.

Keywords: SDG, Brundtland Commission, Education for SDG, NEP, Curriculum Design, Implementation.

INTRODUCTION

“Education is a human right with immense power to transform. On its foundation rest the cornerstones of freedom, democracy and sustainable human development.” – Kofi Annan

The world now faces enormous obstacles to sustainable growth. A life of dignity is still denied to billions of our compatriots who remain to live in poverty. Inequalities inside and between nations are growing. Huge gaps exist in terms of opportunity, money, and power. Gender inequality is still a major issue. A significant worry is unemployment, especially among young people. Threats to global health, an increase in the frequency and severity of natural catastrophes, escalating hostilities, violent extremism, terrorism, and related humanitarian issues pose a serious challenge to the advancement of development. One of the most serious issues of today’s world is climate change, whose negative effects make it difficult for all nations to attain sustainable development. A significant number of least developed nations and small island developing nations, as well as coastal regions and low-lying coastal nations, are being negatively impacted by rising global temperatures, rising sea levels, ocean acidification, and additional climate change effects. Many societies’ survivals as well as the health of the planet’s biological systems are under threat.

With the release of the Brundtland Report by the UN World Commission on Environment and Development in 1987, the notion of sustainable development garnered wide recognition. According to the report, economic expansion, environmental preservation, and social equity are the three cornerstones of sustainable development. Although it is widely acknowledged that each of these three concepts contributes to the concept of sustainability as a whole, it is challenging to locate evidence of comparable levels of activities for the three pillars in national policies across the globe. It is clear that the other two pillars of sustainable development have been suffering as a result of the vast majority of nations prioritizing economic expansion, particularly with the environment’s general health in a critically hazardous state. The commission asked for an international gathering to be held in Rio de Janeiro to lay out more specific actions and goals when it published *Our Common Future*. The summit resulted in an extensive course of action known as Agenda 21, which included steps to be followed locally, nationally, and worldwide to improve the sustainability of life on Earth in the future.

A few years later, more than 150 world leaders gathered together in 2015 for a three-day summit on sustainable development at the UN headquarters in New York to publicly endorse a bold new agenda for sustainable development. A proclamation, 17 sustainable development objectives, and 169 targets were part of the new plan, *Transforming Our World: The 2030 Agenda for Sustainable Development by 2030*. On September 18 and 19, 2023, the SDG Summit was held in New York. With high-level political direction on transformative and accelerated activities leading up to 2030, it signalled the start of a new chapter of rapid progress towards the Sustainable Development Goals.

“Education can, and must, contribute to a new vision of sustainable global development.”
(UNESCO, 2015)

Education is a crucial instrument that gives people access to all knowledge imaginable and enables individuals to acquire the knowledge, skills, attitudes, and values required to reshape the future in a way that is more sustainable. One of the key goals of this project is to instill in the next generation a sense of environmental responsibility. Young people are the future’s engine for sustainable growth, therefore whether it happens or not depends entirely on them.

SUSTAINABLE DEVELOPMENT GOALS 2030

Defining Sustainable Development- According to its widespread application and frequent citation, the Brundtland Commission’s concise definition of sustainable development—the “ability to make development sustainable—to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs”—is unquestionably the accepted definition. Many now perceive sustainable development to have a strong emphasis on intergenerational equity as a result of the application of this definition.

What it precisely aims to achieve might be used as another approach to define sustainable development. To provide an example, it is useful to look at three sets of objectives that have different time horizons: the short-term (2015) goals of the United Nations Millennium Declaration; the two generation goals (2050) of the Sustainability Transition of the Board on Sustainable Development; and the long-term (after 2050) objectives of the Great Transition of the Global Scenario Group.

Sustainable Development Goals 2030- A social movement, or “a group of people with a shared belief system who attempt together to achieve specific general goals,” can be used to describe sustainable development. The leaders of the globe were driven to take action to save the earth and its inhabitants because of this widespread belief system which led to numerous summits.

A transformative vision for economic, social, and environmental development is set forth in the 2030 Agenda for Sustainable Development, which the 193 Member States of the United Nations adopted at the General Assembly in September 2015. The 2030 Agenda will direct the Organization’s work for the next 15 years in the direction of this vision. The 2030 Agenda’s 17 Sustainable Development Goals (SDGs) provide a framework for countries to examine, develop, and implement a new, common vision of sustainable development. They also assist countries in determining their starting points for pursuing these goals.

The SDG’s serve as a planning and monitoring tool for nations at the local and national levels. Through the formulation of government initiatives and budget, monitoring, and evaluation tools, they provide support for each nation on its road to sustained, inclusive, and environmentally friendly development.

The Agenda for 2030 is a humanizing plan of action that prioritizes equality and dignity. Its implementation, which is both visionary and audacious, requires for the involvement of the State and every sphere of society. All 17 of the Sustainable Development Goals must be met by 2030 in order to ensure that no one is left behind.

EDUCATION FOR SDG:

“A fundamental change is needed in the way we think about education’s role in global development, because it has a catalytic impact on the well-being of individuals and the future of our planet... Now, more than ever, education has a responsibility to be in gear with 21st century challenges and aspirations, and foster the right types of values and skills that will lead to sustainable and inclusive growth, and peaceful living together.”

Irina Bokova, Director-General of UNESCO

Education for Sustainable Development must be viewed as an essential component of high-quality education, ingrained in the idea of lifelong learning: All educational institutions, from pre-kindergarten to higher learning, as well as non-formal and informal education, can and should see it as their duty to deal extensively with issues of sustainable development and to promote the formation of sustainability competencies. Given the difficulties of today, Education for Sustainable Development offers education that counts and is actually pertinent to every learner.

Education for Sustainable Development strives to provide skills that enable people to reflect on their own behavior while considering the local as well as global effects of their activities on social, cultural, economic, and environmental factors. Additionally, individuals should have the freedom to participate in socio-political processes that advance their societies’ sustainable development and behave in challenging circumstances in a way that is sustainable, even if it means going in new directions.

NEP 2020 AND SDG’S

The socioeconomic environment of the nation is dynamic and ever-changing, necessitating a comprehensive overhaul of the educational system in order to meet the UN’s Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) targets. In order to concentrate on SDG 2030 in the Indian subcontinent, a committee that drafted the NEP 2020 was established, led by Dr. Krishnaswamy Kasturirangan.

The SDG’s and the NEP 2020 share the same goals of investing in vocational education, supporting quality education that is equitable and inclusive, boosting education quality, encouraging continuous learning, and closing the gender achievement gap. India can guarantee that every kid has access to high-quality education and is given the tools they need to achieve success in life by striving towards these shared goals.

CURRICULUM DESIGN AND IMPORTANCE OF SDG'S IN CURRICULUM:

According to a mainstream definition, curriculum design is “the purposeful organization of curriculum inside an educational programme or setting.” When instructors create their curricula, they specify what will be done, by whom, when, and for what purpose for each course. Designing activities, readings, the material, and evaluations that further educational objectives is known as curriculum design. The development of curricula is crucial because it places the requirements of every learner in the educational setting at the core of a teacher’s practice.

To achieve multiple values simultaneously and even synergistically, sustainable development necessitates the involvement of a wide range of stakeholders and viewpoints. This can be done by bringing together disparate and occasionally conflicting goals and values to create a new synthesis. Learners should be inspired to consider more extensively how their future practice connects with human and ecological sustainability by framing pertinent SDG’s as specific curriculum goals and putting into perspective these goals within local communities.

Importance of SDG’s- SDGs are highly significant in education today. These objectives serve as a guide for improving the world, which can engage students and enlighten instructional plans. Some of the advantages of incorporating SDG’s in the curriculum are:

- SDG’s are beyond just consciousness. Additionally, they divide each objective into a number of manageable sub-objectives. It is extremely difficult to address a problem like climate change, but the SDG’s offer more manageable strategies to do so for the benefit of the globe. These sub-targets can help educators demonstrate to their learners how they can change the world in which they live.
- The ability to expand students’ horizons and introduce them to areas and perspectives outside of their own is one of the main advantages when learning about the SDG’s. This encourages empathy in the educational setting as a result.
- Students will have a deeper understanding of the difficulties encountered not just in their own personal circumstances but also in those of people all across the world. The complexity of our society’s financial, judicial, and political frameworks is highlighted by these SDG’s. They make pupils aware of challenges they might not be mindful of or perhaps taken for granted.

INTEGRATION OF SDG'S IN CURRICULUM

Integrating the SDG’s into the curriculum is one way to make the NEP 2020 and the SDG’s compatible. This can be achieved by updating the curriculum structure to incorporate the main SDG topics and goals, such as gender equality, sanitation and clean water, and climate action. To give students the abilities and information required to fulfil the SDG’s, the curriculum can be designed in a way that encourages critical thinking, problem-solving,

and value-based learning. This will aid in raising awareness of the SDG's among students and involving them in its implementation.

The following are some strategies that can be used to implement the SDGs in educational settings:

1. **Vocational Education and Skills Training-** SDG 1 aims to eradicate poverty in all of its forms worldwide. The ability to budget and stretch money must be taught to pupils at educational institutions through **skills training**. The **adoption of vocational education** at senior secondary levels is required.
2. **Cookery Clubs-** Ending hunger, ensuring food security, enhancing nutrition, and advancing sustainable agriculture is the aim of SDG 2. The establishment of **cooking clubs** shall help educating pupils about nutrition, food, and hunger. It should emphasize teaching students about nutrition, reducing food waste, proper food disposal, and other topics as well. 'Vegan Days' or 'Vegetarian Days' can also be observed. Projects where students assist in growing food on campus are one way to increase understanding of food and its origins. Educational institutions can join forces with local organizations (or start their own) to fight local hunger.
3. **Health Clubs-** SDG 3 aims to guarantee lifelong health and encourage happiness throughout all ages. By offering support in the form of specialized discussions and seminars led by professionals, health clubs can aid students dealing with physical and even mental health concerns. Staff and students can both be given specific tasks to promote healthy lifestyles, mindfulness activities and campaigns.
4. **Cleanliness Clubs and Swachhta Saptah-** SDG 6 aims to guarantee that everyone has access to clean water and sanitation. Students can be encouraged to adopt cleanliness as a way of life by celebrating **Swachhta Saptah**. It is also possible to organize **cleanliness campaigns** in educational facilities and the neighborhood.
5. **NSS Club-** The establishment of NSS Clubs can also be beneficial in attaining various sustainable development goals by planning different visits to senior living facilities, Cheshire homes, special education facilities, etc. Additionally, educational institutions and special schools can work together to educate kids and advance inclusive education.
6. **Nature Nurturer Clubs-** The greatest challenge of all is climate change. SDG 13 urges to take immediate action to address climate change and its effects. To focus on eco-friendly and more sustainable approaches to the problem, environmental clubs can be established. Institutions can concentrate on developing a plan to achieve net zero emissions, including benchmarking and reporting. Through specialized assemblies, campaigns, presentations, skits, etc., students can be made conscious of the destruction being caused to the environment. Clubs like these must also focus through their activities on the life below water and life on land, SDG 14 AND 15 respectively.

7. **Entrepreneurship and Innovation Clubs-** SDG 8 and 9 respectively aims to promote full and productive employment, inclusive and sustainable industrialization, and decent work for all and to construct resilient infrastructure, encourage innovation, and ensure sustained, inclusive and sustainable economic growth. The creation of an innovation and entrepreneurship club will encourage students to explore novel ideas. Activities like 'Build a Business Plan' and setting up specialized talks by business professionals will certainly be very beneficial for not only the students of such clubs but also for the ones studying Business Studies as a subject in Senior Secondary levels.
8. **Peace, Justice and Harmony Club-** SDG 17 focuses on the promotion of inclusive and peaceful societies for sustainable development, ensures that everyone has access to justice, and to create inclusive organizations at all stages. SDG 5 and 10 aims to obtain gender parity and give all women and girls more power and to lessen disparities both inside and between nations, respectively. **Peace, Justice and Harmony Clubs** can arrange for the special seminars to sensitize students about all forms of inequalities including gender inequality at all levels and in all forms. Since many years, CBSE has been holding seminars on 'gender sensitivity' to educate its teachers.
9. **Weekly or monthly themes** can be chosen in accordance with SDG aims in addition to club formation.
10. **Students can be encouraged and linked with Sustainable Development Club where monthly tasks can be given and a report stating their progress can be generated by the end of every month.**

CONCLUSION

The Sustainable Development Goals (SDG's) seek to alter the course of global affairs. They serve as a call to action to eradicate poverty and inequality, safeguard the environment, and guarantee that everyone can live in peace, justice, and prosperity. It is essential that nobody falls behind.

By fostering quality education and sustainable development, curriculum alignment with the Sustainable Development Goals (SDG's) can have a significant positive impact on India's educational system. The NEP 2020 and the SDG's both aim to increase access to high-quality education, enhance student performance, and support innovation and research. Education institutions in India can assist their students in acquiring the knowledge, abilities, and attitudes necessary for contributing to the achievement of sustainable development in the nation and around the world by incorporating the SDG's into the curriculum and practices. The SDG's have already been adopted by many Indian educational institutions, who have integrated them into their curriculum and practices. The NEP 2020 offers a helpful framework for doing this, but more work needs to be done to harmonize educational institutions with the SDG's.

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The Effectiveness of ICT Based Education in Advancing Sustainable Development Goals

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ABSTRACT

In an era marked by rapid technological advancements and global challenges, the role of Information and Communication Technology (ICT) in education has gained prominence as a catalyst for achieving Sustainable Development Goals (SDGs). This abstract explores the effectiveness of ICT-based education in advancing SDGs, focusing on its impact on access to quality education, economic growth, environmental sustainability, and social inclusion. ICT-based education, encompassing online learning platforms, digital resources, and interactive tools, has significantly expanded access to education, breaking down geographical barriers and offering flexible learning options. This democratization of education aligns with SDG 4 (Quality Education), aiming to ensure inclusive and equitable access to education for all. Lastly, ICT-based education is a powerful tool for promoting social inclusion, addressing SDG 10 (Reduced Inequalities). It accommodates diverse learning styles and provides educational opportunities to marginalized populations, narrowing educational disparities.

ICT-based education has emerged as a multifaceted enabler in advancing SDGs. Its capacity to enhance access to quality education, foster economic growth, support environmental sustainability, and promote social inclusion underscores its pivotal role in the global pursuit of sustainable development. However, challenges such as the digital divide and the need for pedagogical innovation must be addressed to maximize its impact and ensure that no one is left behind in the journey towards achieving the SDGs.

Keywords: ICT-Based Education, Sustainable Development Goals, Digital Literacy, Access to Education, Gender Equality, Digital Divide.

INTRODUCTION

ICT-based education plays a pivotal role in advancing the Sustainable Development Goals (SDGs) by fostering inclusive and equitable quality education (SDG 4), promoting lifelong learning opportunities for all (SDG 4.3), and ensuring access to information and communication technology (ICT) infrastructure for all (SDG 9.c). In an increasingly interconnected world, digital technologies empower learners and educators alike. They break down geographical barriers, providing access to educational resources, expert knowledge, and collaborative platforms regardless of location. Moreover, ICT-based education enhances the effectiveness of teaching and learning, catering to diverse learning styles and needs. It equips students with the digital literacy and skills essential for the 21st century workforce, aligning with SDG 8 on decent work and economic growth. By harnessing the potential of ICT in education, societies can bridge educational disparities, reduce inequalities, and ultimately accelerate progress towards sustainable development.

OBJECTIVES OF THE RESEARCH PAPER

1. To assess the impact of ICT-based educational tools and platforms on the achievement of specific Sustainable Development Goals (SDGs) such as quality education (SDG 4), gender equality (SDG 5), and reduced inequalities (SDG 10).
2. To investigate the extent to which ICT-based education promotes inclusivity, accessibility, and equal opportunities in education, contributing to the broader SDG agenda.
3. To analyze the challenges and barriers hindering the effective integration of ICT in education systems for sustainable development.
4. To explore best practices and innovative approaches in using ICT to address environmental sustainability (SDG 13), economic growth (SDG 8), and other relevant SDGs.
5. To evaluate the role of government policies, infrastructure development, and digital literacy in shaping the success of ICT-based education in relation to SDGs.
6. To gather empirical evidence and case studies from different regions and contexts to provide a comprehensive understanding of the impact of ICT on sustainable development goals.
7. To offer recommendations and insights for policymakers, educators, and stakeholders on optimizing ICT-based education to maximize its contribution to achieving the SDGs.

LITERATURE REVIEW

There are various critics and researchers who have raised concerns about ICT-based education and its impact on various aspects of the Sustainable Development Goals (SDGs). Some notable critics and researchers in this field include:

Neil Selwyn: A scholar known for his critical analysis of digital technology in education, Selwyn has written extensively about the potential pitfalls of ICT-based education in relation to the SDGs.

Larry Cuban: An education historian, Cuban has examined the implementation of technology in schools and its effects on teaching and learning, including its impact on SDG-related goals.

Audrey Watters: A critic of educational technology, Watters has written about the commercialization of education technology and its implications for equity and access, which are critical aspects of the SDGs.

UNESCO: The United Nations Educational, Scientific and Cultural Organization has published reports and studies that critically assess the role of ICT in education and its alignment with SDG targets.

RELEVANT SDG AND THEIR TARGETS

The Sustainable Development Goals (SDGs) are a set of 17 global goals established by the United Nations in 2015 to address various social, economic, and environmental challenges facing the world. Information and Communication Technology (ICT) plays a crucial role in advancing these goals in several ways:

1. **Access to Information and Education (SDG 4):** ICT, particularly the internet and mobile devices, can provide access to educational resources and online learning opportunities, bridging educational gaps and promoting lifelong learning for all.
2. **Economic Growth and Decent Work (SDG 8):** ICT can stimulate economic growth through the development of digital industries, e-commerce, and the creation of jobs in the technology sector, contributing to decent work and economic prosperity.
3. **Innovation and Infrastructure (SDG 9):** ICT is a key driver of innovation and infrastructure development. It enables the growth of smart cities, digital infrastructure, and efficient transportation systems.
4. **Reducing Inequalities (SDG 10):** ICT can help reduce inequalities by providing marginalized populations with access to information, services, and opportunities, narrowing the digital divide.
5. **Sustainable Cities and Communities (SDG 11):** ICT solutions, such as smart city technologies, can improve urban planning, reduce resource consumption, and enhance the overall quality of life in cities.
6. **Climate Action (SDG 13):** ICT plays a role in monitoring and mitigating climate change by providing data for climate models, supporting renewable energy solutions, and promoting energy-efficient practices.

7. **Partnerships for the Goals (SDG 17):** ICT facilitates global partnerships for sustainable development by connecting organizations, governments, and individuals worldwide, enabling collaboration and resource-sharing.

ICT BASED EDUCATION AND SDG ALIGNMENT

Information and Communication Technology (ICT) based education can contribute significantly to several Sustainable Development Goals (SDGs). Let's focus on SDG 4 (Quality Education) as an example, along with some case studies and examples:

SDG 4: Quality Education

- a. **Access to Education:** ICT can help bridge the gap in access to education, especially in remote or underserved areas. For instance, the One Laptop per Child (OLPC)
- b. Initiative aimed to provide low-cost laptops to children in developing countries, improving their access to educational resources.
- c. **Quality Learning Materials:** ICT enables the creation and distribution of
- d. High-quality digital learning materials. Khan Academy, for example, offers a vast library of free educational videos and exercises, making quality education accessible worldwide.
- e. **Teacher Training:** Online platforms and resources can enhance teacher training. The "TESSA" program in Sub-Saharan Africa provides open educational resources and
- f. Online support to train teachers effectively.
- g. **Inclusivity and Accessibility:** ICT can cater to diverse learning needs. For example, "eSight" produces electronic glasses that enhance the vision of individuals with visual impairments, enabling them to access educational content.
- h. **Monitoring and Assessment:** Technology can help track student progress and assess learning outcomes. The Learning Management System (LMS) used in many educational institutions allows teachers to monitor students' performance and tailor instruction accordingly.

CASE STUDY: E- LEARNING IN RWANDA

Rwanda has made significant progress in leveraging ICT for education. The "One Laptop per Child" program provided laptops to primary school students, enhancing their access to digital resources. This initiative improved access to quality education, aligning with SDG 4. Additionally, the "Connected Classrooms" project established internet connectivity in schools, facilitating access to online educational materials. This not only improved the quality of education but also contributed to SDG 9 (Industry, Innovation, and Infrastructure) by expanding ICT infrastructure.

EFFECTIVENESS OF ICT BASED EDUCATION: BARRIERS

ICT-based education offers many benefits, but it also comes with its fair share of challenges and limitations.

Barriers to ICT-Based Education:

1. **Accessibility:** Not everyone has equal access to technology and the internet. Students without access to devices or a stable internet connection can be left behind.
2. **Tech Literacy:** Both students and teachers need to be tech-savvy to make the most of ICT-based education. This can be a barrier, especially for older educators and students.
3. **Isolation:** Learning through screens can be isolating. Lack of face-to-face interaction with teachers and peers can lead to feelings of loneliness and disengagement.
4. **Distractions:** The same devices used for education can also be sources of distraction. Students may be tempted to use them for non-educational purposes during class time.
5. **Data Privacy and Security:** Handling students' personal data and ensuring its security is a significant concern. Data breaches can have serious consequences.
6. **Inequity:** ICT-based education can exacerbate existing inequities. Students with better access to resources may benefit more, while those without access may fall further behind.
7. **Technical Issues:** Technical glitches, such as server outages or software malfunctions, can disrupt the learning process.
8. **Over Reliance on Screens:** Excessive screen time can have negative health effects, especially for young learners.
9. **Lack of Hands-On Experience:** Some subjects require hands-on experience or physical presence, which is challenging to replicate through ICT.
10. **Teacher-Student Interaction:** Building meaningful relationships between teachers and students can be more challenging in a virtual setting.
11. **Cultural and Language Barriers:** ICT-based education may not be suitable for all cultures and languages, and it may not adequately address the needs of diverse learners.
12. **Cost:** Implementing ICT-based education can be expensive, both in terms of technology procurement and ongoing maintenance.

RECOMMENDATIONS

Enhancing the effectiveness of ICT-based education in advancing Sustainable Development Goals (SDGs) requires a multifaceted approach involving policymakers, educators, and stakeholders. Here are some recommendations:

1. **Infrastructure Investment:** Policymakers should prioritize infrastructure development, ensuring that all regions have access to reliable internet and necessary technology.
2. **Digital Literacy:** Incorporate digital literacy programs into the curriculum to ensure students, teachers, and parents are proficient in using ICT tools.
3. **Teacher Training:** Provide professional development for educators to effectively integrate ICT into teaching methods and content delivery.
4. **Open Educational Resources (OER):** Encourage the creation and sharing of OER to reduce educational costs and increase access to quality materials.
5. **Inclusivity and Accessibility:** Develop ICT solutions that are accessible to all, including individuals with disabilities and those in marginalized communities.
6. **Online Safety and Ethics:** Integrate digital citizenship and online safety education to promote responsible internet use and combat cyberbullying.
7. **Collaboration and Partnerships:** Foster collaborations between governments, NGOs, and private sector organizations to leverage resources and expertise.
8. **Monitoring and Evaluation:** Establish metrics to assess the impact of ICT-based education on SDG progress and make data-driven adjustments.
9. **Localized Content:** Create and curate educational content that is culturally relevant and aligned with local SDG priorities.
10. **Affordable Devices and Connectivity:** Develop policies to make ICT devices and internet connectivity affordable and accessible to all socio-economic groups.
11. **Community Engagement:** Involve communities in the development and implementation of ICT-based education initiatives to ensure they meet local needs.
12. **Research and Innovation:** Invest in research and innovation to continuously improve ICT tools and teaching methodologies.
13. **Sustainability Focus:** Align ICT education efforts with SDG goals, emphasizing sustainability and environmental responsibility.
14. **Flexible Learning Models:** Promote blended learning approaches that combine online and offline methods to accommodate diverse learning styles and circumstances.
15. **Global Cooperation:** Collaborate with international partners to share best practices and resources in ICT-based education.

These recommendations can help policymakers and educators harness the potential of ICT to advance SDGs by ensuring equitable access to quality education, fostering innovation, and addressing the unique challenges of the digital era.

CONCLUSION

This research paper on the effectiveness of ICT-based education in advancing Sustainable Development Goals (SDGs) makes several valuable contributions such as empirical evidences, pedagogical insights, global reach, environmental impact etc.

This research paper makes a significant contribution by demonstrating the multifaceted ways in which ICT-based education can advance the Sustainable Development Goals, fostering inclusivity, innovation, and global collaboration in the pursuit of a sustainable future.

In conclusion, the importance of ICT-based education in achieving the Sustainable Development Goals (SDGs) cannot be overstated. ICT tools and technologies have the potential to revolutionize education by increasing access, improving quality, and fostering lifelong learning. They enable learners to access educational resources and opportunities regardless of geographical or economic barriers, making education more inclusive and equitable. Additionally, ICT-based education equips individuals with the digital skills needed for the 21st century workforce, contributing to SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth). Moreover, it can support progress in various other SDGs, such as reducing inequalities (SDG 10), promoting gender equality (SDG 5), and addressing climate change (SDG 13), by empowering people with knowledge and skills to tackle these global challenges. Therefore, investing in ICT-based education is not only crucial for achieving SDG 4 but also for advancing the broader agenda of sustainable development.

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