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A STEP FORWARD TO GLORIFY SUSTAINABLE DEVELOPMENT GOALS THROUGH INDIAN KNOWLEDGE SYSTEM

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BEST PRACTICES OF RESEARCH & INNOVATION IN STEAM HIGHER EDUCATION

*A STEP FORWARD TO GLORIFY
SUSTAINABLE DEVELOPMENT GOALS
THROUGH INDIAN KNOWLEDGE SYSTEM*

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BEST PRACTICES OF RESEARCH & INNOVATION IN STEAM HIGHER EDUCATION, First Edition
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PREFACE

The National Level Two-day Conference on "BEST PRACTICES OF RESEARCH & INNOVATION IN STEAM HIGHER EDUCATION" – A STEP FORWARD TO GLORIFY SUSTAINABLE DEVELOPMENT GOALS THROUGH INDIAN KNOWLEDGE SYSTEM held on 9th and 10th March 2023 was conceived as an idea to explore research and innovation coupled with themes like Climate Finance, Green Development, Lifestyle for Environment, SDGs, Digital Transformation, Climate Action, Women Development Awareness, IKS, Indian Culture and Heritage.

The purpose of the conference was set in the inaugural session by the Chief Guest Dr. Shyamasundar, Advisor, NAAC who appreciated the topic and highlighted the importance of research and innovation in higher education. Seven Speakers - Dr. T.N. Shanmugam, Founder Director, Center for Intellectual Property Rights & Founder Dean, University College of Engineering Kanchipuram, Anna University, Prof. Annadurai, Founder, Research Centre for Asiatic Culture, Kanchipuram, Dr. S. Sridevi, Principal, CTTE College for Women, Chennai, Mr. R. Vigneswaran, Consultant, Cybersecurity and Privacy Research & Innovation Group, TCS, India, Mr. Viswanathan Radhakrishnan, Head, Social Initiatives, Landmark Group, India, Shri. Ap. Muthu, Consultant to Chairman, Indian Ports Association and Dr. D. K. Hema Hari, Founder, BharathGyan - from multifaceted domains addressed the audience and imparted insightful thoughts on research and innovation through NEP, AI, IPR, Indian Knowledge System, Heritage and Culture, Sustainability, R&D in Block Chain Technology and Design Thinking. Participants from various educational institutions presented research papers based on the conference focal themes. More than 250 participants attended the two day conference and 22 research papers were presented in hybrid mode (including participants from 9 states) and Five paper presentations were awarded the 'Best Paper Presentation Award' during the conference. The registered participants were provided with a participation certificate, conference kit, refreshments and lunch.

This conference would have supported young researchers who wanted to explore and expand their multidisciplinary approaches with societal impacts. As the world is moving towards inclusivity, creativity, adaptability, despite the fact of being a VUCA world, the conference might be contributed to our Indian young minds that can scale greater heights by harbingering our Indian Knowledge Glory.

I am grateful to NAAC for the financial support extended in organizing this two day national level conference on BEST PRACTICES OF RESEARCH & INNOVATION IN STEAM HIGHER EDUCATION.

Acknowledgements are due to many. First to Smt. Mamta. D. Bhatt, our College Chairman, Shri. Chandrakanth M. Tolia, College Secretary, and

Shri. Nimish C. Tolia, Joint Secretary for their unstinted support and encouragement. I am indebted to Dr. R. Geetha, our Principal for her enormous support. And to all the participants and paper presenters (hybrid) whose papers have made up this volume. Acknowledgments also to all the Staff members of our college for their timely assistance and support. My special appreciation and acknowledgment to the IQAC team members for making this conference a grand success. I also thank Yesdee Publishing for putting the scripts together to give the volume as complete a shape as possible. The credits that are earned go to our IQAC team and the contributors. Its lapses are all mine.

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CBCS and Holistic Education and Autonomy

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Abstract

This paper aims at studying the CBCS framework and its fluidity to tackle holistic education in the classroom. Certain subjects are allotted only 2 hours as per curriculum and teachers do not have the required time to delve into the subject deeply. If a student goes on leave during these classes, he is penalised for lack of attendance and autonomous colleges do not grant him degrees. It is time we reviewed the system of CBCS to analyse if it is really imparting holistic education to students. It has to be studied if two hours are enough to understand a subject. The system is more quantitative in nature and has failed to empower students in a complete understanding of various disciplines in an assimilated model.

Keywords: CBCS, NEP 2020, Holistic Education

The CBCS System has been implemented to empower the learner by giving him a choice from multiple disciplines. Colleges hence provide these options. The current skills development ideology has added additional nuances to the system. Teachers spend lots of hours in making students present discussions in classrooms. The reality is that subject teachers are not trained in teaching students the skills of making presentations, group discussions etc. Placement from corporates have classified colleges as first tier, second tier and third tier based on smartness and skills and not on

subject expertise. College are put under pressure to move to first tier for their placements and have begun to side-line knowledge oriented classrooms.

Thus, deftly we have moved into skills development without balancing it with in depth knowledge of the concerned subject. The point is, what will a skilled student do, if he doesn't know his subject for core areas? Also, the content has to decide the form. More skills will make students a robot that cannot think or innovate. Education systems also have to bring forth thinkers, philosophers, leaders and experts.

The most relevant question that emerges is what is - the contemporary goal of education in higher education institutions? Governments with social welfare in mind will opt for the purpose of giving employment to all students who have been part of higher education system. This is a very valid purpose. Amartya Sen's theory of capability explains how every individual is capable of living a meaningful and materialistically well provided life for himself. Our societal laws support this ideology that aims at overall human development and progression.

Hence, a job becomes the symbol of human achievement and welfare. These aims tend to create an atmosphere that equals skills with success. One wonders how the knowledge economy would function, if the skilled workers have no knowledge of their specialized fields at all. An in depth understanding of what is studied in college is required to innovate in jobs later in life.

For example, let us assume there are 70 students in a particular class. Continuous internal assessment requires students to present seminars for a certain percentage of marks. If each student takes 15 to 20 minutes to present their topic, let us calculate how many hours would be required to complete the process. Most of the colleges do not have 60 minutes for a period, they have 50 minutes only. So, per hour only 4 students can present. Roughly a teacher would require 18 days to complete the evaluation. In case of absentees, 2 more days might be needed. If 20 hours are used up for evaluation of seminars, the rest of the institutional hours have to be used for teaching. In a semester

system, totally 40 hours are given to student's presentation. The questions that emerge are:

1. Are the teachers teaching subject knowledge or skills of presentation?
2. If marks are allotted for skills, are the teachers well trained in presentation skills?

There are subjects that are given only 2 periods per week. Even these subjects have CIAs and seminars. The seminal question is:

1. How are the students' seminars evaluated and in how many hours if the number of students is above 50?

The CBCS system operates on credits, attendance and seminar or activities. Teachers, unable to accommodate these works give group seminars or activities. If there are 8 students in a group, only 4 students might contribute at an average level. The questions are:

1. How is each student evaluated?
2. Is there scope for team play?

In our hurry to win accolades and accreditation we tend to ignore these minor aspects of classroom teaching, and our clients are students who are customers who do not really have the astuteness to decide the quality of the knowledge product.

Assessing the quality of the work of a teacher in a classroom is a contemporary challenge that research has to focus on in future. NEP 2020 plans to move "towards a higher educational system consisting of large, multidisciplinary universities and colleges". The country aims at producing scientists and innovators and fresh start-ups. The classroom has to provide an intellectual space for original thinking and creativity. NEP argues that "given the 21st century requirements, quality higher education must aim to

develop good, thoughtful, well-rounded, and creative individuals" (NEP 2020). We, now have more questions in this regard:

How do we create creative individuals in the classroom? Can the CBCS provide the needed academic environment? Can CBCS create thinkers? Can the teacher encourage original thinking? How can we create teachers who have enough knowledge and original approach to encourage creativity in students?

The CBCS aims at an interdisciplinary approach. Has it disturbed the students' ability to assimilate the core courses in a slow and steady manner? Vikaspedia explains that "the credit based semester system provides flexibility in designing curriculum" and "provides a cafeteria type approach in which the students can take courses of their choice" (Vikaspedia 2022).

CBCS has broken up the coherence of subjects. The curriculum has been broken up and distributed. For example, "Income Tax" will be taught as "Income Tax I" and "Income Tax II". After the first part, there will be an examination and a gap of at least a month before the next semester begins. Sometimes, it is possible that two or more teachers would be teaching for a class of seventy students or so. We have to do research to find if students gain a wholesome idea about the subject.

It is interesting to note how Mir explains the genesis of CBCS system that was the result of a "bid to revamp higher education" and "the University Grants Commission (UGC) in 2014 came up with a scheme called Choice Based Credit System (CBCS)" and the "main intent" was "to have the flexibility of choosing a course by students, as observed in many European and American Universities". He argues that it "results in …juggling of students from one department to another … which results in more academic stress in them" (Mir 2017). This western system and its related accreditation processes have put an average Indian student slightly confused and not clear about the purpose of these fragmented courses taught across disciplines.

Biswas explains the inner structure of CBCS as "a continuous assessment system in the semester system" which "is spread through the duration of course and is done by the teacher

teaching the course" and "the assessment is done through various means including: Written tests, MCQ based quizzes, Presentations, Projects, Field visits, Seminars, Group discussions/activities etc." insisting on "continuous assessment" that "provides feedback on the teaching learning process" which is "analysed" and is passed on to the concerned for implementation and subsequent improvement" (Biswas 2018).

Cherry explains how "assimilation is the cognitive process of making new information fit in with" an "existing understanding of the world" (Cherry 2020). Assimilation is a process that cannot be treated as a universal phenomenon. Selected students can assimilate on their own. Elective papers and Non-major Elective papers stand in isolation in the minds of students in an isolated format, in a fragmented and compartmentalised manner.

Radcliffe looks at the education scenario from an economic perspective and explains that "the knowledge and skills of workers available in the labour supply are a key determinant for both business and economic growth" (Radcliffe 2022). This economic perspective is behind all ranking systems. The advanced nations have achieved a mass and diverse range of students worldwide due to their ranking systems in which they always take the top ranks when compared to any developing nations. These universities have created the system based on specific criteria that are based on their strengths. Their most important strength is that the entire world has adopted their education system, and even their job structures are extensions of a similar system.

In a country like India that is multicultural and multilinguistic, adopting a western system that is based only on one language is not practical and suitable. Huge populations of bright minds are already opting for higher education abroad. This has been widening the nation's intellectual and quality of human resource. In a few years the knowledge and wisdom of the target workforce will be less.

We have entered the academic competitive environment of ranking which is dependent primarily on quantitative data. A teacher's quality is also verified based on quantitative data.

Criterion II of NAAC decides the quality of teaching/learning processes. The processes have to be recorded by the teachers. In short, every teaching hour has to be planned ahead and the curriculum has to be delivered accordingly. Some of the questions that arise are:

- Are the teachers trained to prepare extensive lesson plans?
- Are they trained formally in ICT tools?
- Do students really appreciate educational tools?
- How can we assess a subject expert?
- Do students really assess their teachers properly? Are they equipped enough?
- What are the criteria to evaluate a teacher?
- Can the number of published papers guarantee a good teacher?
- How do we identify a kind and impartial teacher?
- Does the peer team listen to a class being taught to assess the quality of a teacher?
- Can the outcome of a job guarantee a creative individual?
- Can a teacher who records all her work processes in a minute manner be considered a superior teacher?
- Can a teacher who has records for all his work be considered as the best example of a teacher who creates a creative individual?

The ranking criteria require a database of student profile and diversity, teacher profile and quality, the processes of teaching, reforms in evaluation and outcomes. A college has to make sure it attracts students from other states, and show the proof for teacher qualification and research papers, and bring forth innovative evaluation methods.

NAAC ranking checks the processes of functioning; it uses quantitative records checking. A college in rural India will not have a cosmopolitan and diverse crowd and hence will lose the 80 points; the points for teaching/learning processes cannot check the

teacher's ability to teach with subject expertise, linking it with the contemporary world and also make class interesting and practising complete impartiality. Teacher quality is an evasive criterion that cannot be judged based on records alone, as emphasised earlier. The peer team from NAAC has to sit in classes to check teacher quality, which might be very difficult. The ranking system has to arrive at a fool proof process to check the quality of the teacher - it cannot only be verified with the number of research papers published. Again rural students cannot easily get top jobs and marginalised communities do not yet have the self-esteem and confidence to fight it up in social mobility. As CBCS has an internal marking system, student satisfaction surveys and feedback systems have become ineffective as students are not ready to give negative feedback. Teachers have already begun to lose their morale and their attention has shifted from knowledge to records production.

The colleges have to create separate courses for skills development and specially trained teachers have to be engaged in taking these classes. Skills development needs a different pedagogy and well-trained teachers have to take care of presentations, activities, group discussions etc. Continuous internal assessment has to be spaced out and actually formative assessments suit school students rather than college students. In colleges the students need more in-depth knowledge rendered by a scholar who actually should have an awareness of the world in general. So college teachers can go through a special degree that qualifies them to be college teachers. This degree can be multidisciplinary and holistic in nature.

NEP 2020 proposes that "specific sets of skills and values across domains will be identified for integration and incorporation at each stage of learning, from pre-school to higher education" and "curriculum frameworks and transaction mechanisms will be developed for ensuring that these skills and values are imbibed through engaging processes of teaching and learning" along with "pedagogical practices to help in developing skills such as

collaboration, self-initiative, self-direction, self-discipline, teamwork, responsibility, citizenship, etc." (NEP 2020).

References

Cherry, Kendra. "The Importance of Assimilation in Adaptation." Verywellmind. May 15, 2020. https://www.verywellmind.com/what-is-assimilation-2794821.
Choice Based Education System. CBCS. Vikaspedia. 2022. https://vikaspedia.in/education/policies-and-schemes/choice-based-credit-system-cbcs
Mir, Suheel Rasool. "Issues and Challenges of Choice Based Credit System: Insights from University of Kashmir." TechnoLEARN: An International Journal of Educational Technology. TechnoLEARN: 7(1&2): 57-63, June & December 2017. https://ndpublisher.in/admin/issues/TLv7n1n2f.pdf
NAAC Manual for Affiliated Colleges. Annexure: 1 Table: Distribution of Weightages across 7 Criteria and 34 KeyIndicators (KIs). 2020. http://naac.gov.in/docs/Annexure.pdf.
National Education Policy. 2020. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.
Radcliffe, Brent. "How Education and Training Affect the Economy." Investopedia. June 03,2022. https://www.investopedia.com/articles/economics/09/education-training-advantages.asp.

Designing a Fingerprint-Based Voting System with Arduino Uno and IoT Integration Ensuring Secure and Impartial Elections

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Abstract

Democratic societies uphold the principle of free elections, which serve as a means of electing representatives. It is essential to conduct these elections in a manner that is free, fair, and confidential. Traditionally, voting involved stamping a paper ballot and placing it in a ballot box to be manually counted. Despite the potential for errors, this process was utilized to determine the candidate with the most votes. This study proposes a novel system that not only minimizes electoral malpractices but also streamlines the voting process. The system is designed with an Arduino Uno microcontroller and utilizes fingerprint authentication. The Arduino Integrated Development Environment (IDE) is utilized to program the device, displaying the ballot card, and storing the results in the cloud. Only authorized voters can cast their ballots, and the system is equipped to detect any fraudulent activity. This project serves to uphold citizens' right to vote and ensures a fair and unbiased election.

Keywords: Internet of Things (IoT), Arduino, Fingerprint, Microcontroller, Voting system

I. INTRODUCTION

In the traditional method of voting, a person would stamp a vote for their preferred candidate and drop the paper into a ballot box[1]. The votes in each ballot box would then be counted and added up

to determine the winner. However, this manual method of voting is susceptible to manipulation, which can lead to unfair results[1]–[3].

In India, as a democratic country, every citizen has the right to vote and select their leaders [4]. It is the responsibility of each citizen to prevent electoral fraud and ensure that the election is conducted fairly [5]–[7]. Not only can people vote for government leaders [5], but they can also choose leaders in schools, colleges, and other organizations.

It is crucial for citizens to exercise their right to vote in upcoming elections to bring about change. Fair and transparent voting processes are necessary to ensure that the election outcomes reflect the true choices of the people. By doing so, they can make a difference and contribute to the betterment of their country.

Biometrics is a technique used to identify individuals based on their unique physical characteristics, such as fingerprints, iris, face, voice, and more. This approach is widely used for identification purposes [8]-[10]. Biometrics is used for two purposes: one-to-one matching and one-to-many matching. In one-to-many matching, the biometric sample is compared to previously stored samples, while in one-to-one matching, the biometric sample is compared to a previously stored sample [9]-[15]. The use of biometrics offers a secure and convenient means of verifying user identity [11], [13], [15].

Biometric security, such as fingerprints, is considered more reliable than password security because it provides a unique identifier for each individual, making it a more secure method of authentication [12], [13]. To ensure the proper functioning of the system, a systematic approach is crucial at every stage of the process, especially during software simulation [14].

The use of biometric technology in voting systems has the potential to significantly increase the efficiency and accuracy of the vote-counting process compared to the traditional manual counting method, which was time-consuming and labor-intensive [15], [16]. With automated vote-counting, results can be announced more quickly, and the cost of paying staff to count votes manually can be

reduced, freeing up resources to invest in a more advanced voting system, such as a biometric-based system [15], [16].

The structure of the paper is outlined as follows: In Section 2, we review previous works in the Fingerprint-Based Voting System with Arduino Uno and IoT. Section 3 introduces our proposed framework. In Section 4, we present the results of our experiments and evaluations. Finally, in Section 5, we provide a summary of our work and offer suggestions for future research.

II. BACKGROUND AND LITERATURE REVIEW

First Voting plays a significant role in democratic systems, allowing citizens to select the best candidate for a particular position [17]. By electing an honest candidate, voters can ensure the establishment of a moral and effective government, ultimately contributing to the betterment of their nation [18]. Choosing the right political party is essential, and electronic voting devices provide a streamlined and transparent election process [19]-[21].

Previously, manual voting systems required voters to place individual ballot papers in separate boxes, with election officials counting each party's votes. The party with the most ballots was declared the winner. However, traditional voting systems were prone to errors, such as double voting, fraudulent voting, and incorrect ballot counting. Electronic voting systems solve these issues by automatically counting ballots [19].

To address the limitations of manual and conventional electronic voting, a smart voting system is proposed [21]. This smart voting system is built on an Internet of Things (IoT) platform and utilizes fingerprint authentication to enhance its security [22], [23]. This means that only authorized voters can cast their votes, and they are only allowed to vote for one party. Once the user is verified, they can cast their vote, and the information is automatically sent to a web server. Since this voting system is built on an IoT platform, all statistics and information are transmitted to the server in real-time, ensuring that the election process is transparent and efficient.

According to a study by [1], the article discusses the process of logging in using the Aadhar number and password, and verifying if

the person is eligible to vote. The article also examines the policies surrounding electronic technologies and advancements in data transmission and storage. To cast a vote, the user needs to present their fingerprint and verify their eligibility.

The information about the voter is retrieved from the tag through a fingerprint reader, and the controller compares it with the data that has been previously stored. If the information matches the data that has been stored, the person can proceed to cast their ballot. However, if the information obtained from the fingerprint reader does not match the information previously recorded, a notification would appear on the LCD display. The study cites sources [1], [19], [24], and [25] to support its findings.

According to [2], a proposed system for Bangladesh would utilize electronic voting machines and a database of voters' fingerprints. The system would check for matches in the database and ensure that voters are not able to vote more than once or if they are not registered. After voting has ended, the system would tally the votes and display the results.

Meanwhile, [3] discusses the limitations of current electronic voting machines and proposes a biometric voting system that is fast, secure, reliable, and scalable. This study also aims to reduce the time required to announce the election results. The proposed system would allow voters to receive an acknowledgement after casting their ballot on a computerized voting system, with manual tallying of the votes. Maintaining the Integrity of the Specifications

III. MODELING AND ANALYSIS

Before The project described in Fig. 1 is a fingerprint-based biometric voting machine that utilizes the Internet of Things. The goal of this project is to develop a system that can prevent election malpractices and speed up the vote counting process when compared to the traditional voting process.

The system includes a matrix keypad and push buttons as inputs, and light emitting diodes (LEDs), liquid crystal displays (LCDs), and buzzers as outputs. When a voter enters their identity card (IC) number through the matrix keypad, the data is sent to the

microcontroller, which is an Arduino Uno, and is compared with the stored database.

If the IC number is authenticated, the voter can proceed to the voting stage. However, if the IC number is not matched with the database, the voter will be disqualified as their IC number is unauthorized by the system. When the election's winner is announced, all three outputs will be triggered, with the LED turning on when the winning candidate is declared, followed by the sound of the buzzer.

The LCD will also display the winner of the election. The design aims to improve flexibility, security, reliability, scalability, and reduce the time required to announce the election outcome.
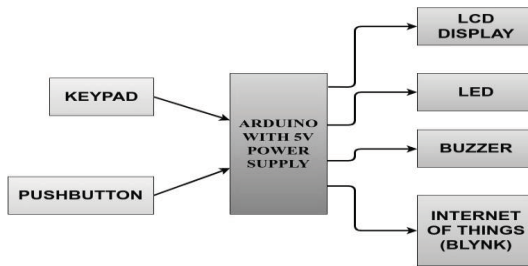
Fig. 1 Block diagram of system

This voting system has provisions for scenarios such as tie results and no votes being cast. In such cases, the LCD screen will display "TIE NO RESULTS" and "NO VOTES CASTED", and the admin will be notified through the IoT platform for appropriate actions to be taken. The IoT platform will be utilized to transmit all the data to the monitoring system unit.

An Arduino Uno will be linked to an ESP8266 Wi-Fi module to transmit the data to the internet, so that the authorized admin can remotely monitor the data. The TINKERCAD platform was employed in this project for real-time simulation and to offer a clear view of the simulation process. The functions of each component are given in Table 1.

The function of each component used in the voting system is summarized in Table 1. The system is controlled by the Arduino Uno, which manages the entire voting process, including reading pushbuttons, increasing the vote value, producing results, and delivering the vote and results to an LCD display. Pushbuttons are used to choose the candidate for casting a vote, while the buzzer alerts the winner when the winner is announced. The LCD is utilized to display the system's basic processes and election results. Different colored LEDs are employed to indicate which candidate has won the election at the end of the voting process during the result announcement. A matrix keypad replaces the fingerprint sensor, but its function is identical to that of the fingerprint sensor. The voter inserts their IC number, and if it matches the stored data in the system, the voter is authorized to vote, or disqualified if the IC number is not verified. The TINKERCAD simulation tool is used for testing and validation of the system during the development process.

A. Flowchart of the project
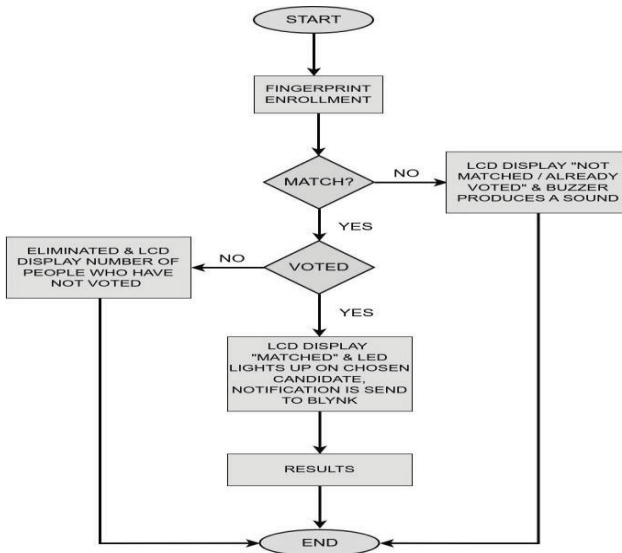
Fig. 2 Flowchart of the work

The project flowchart, as depicted in Fig. 2, starts with voter verification through a keypad (fingerprint enrolment) by entering their IC number. Once the IC number is verified, the voter can proceed to the next stage, i.e., casting their vote. However, if the entered IC number does not match with the stored data, the voter will be disqualified from voting. In the voting stage, the voter can choose their preferred candidate by pressing the corresponding pushbutton, and the LED associated with that candidate will light up. After the voter casts their vote, the vote count is sent to the system (Blynk) for tallying. Finally, the system announces the winner of the election on the LCD display and produces a sound via the buzzer.

B. System diagram

Use Fig. 3 displays the system diagram of the proposed voting system that is aimed at accelerating the voting process and vote counting during the election. The microcontroller is an essential component that manages the device's functionality by receiving data from the input/output peripherals and processing it with the core processor. To this end, the microcontroller of choice is the Arduino Uno. Instead of using the fingerprint sensor, a matrix keypad is utilized in the simulation to authenticate the voter before casting their vote. After the vote is cast, the LED corresponding to the chosen candidate will light up, and a sound will be produced, while the election result will be displayed on the LCD screen.
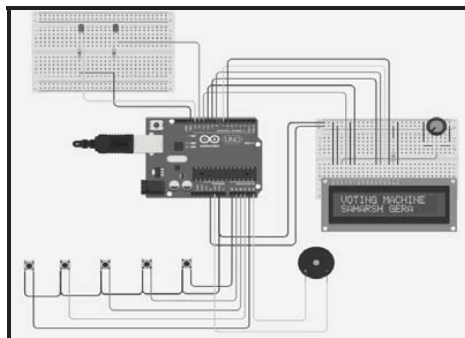
Fig. 3 System diagram

The system diagram displays the connection of components in the project. Pushbuttons one to five are linked to pins A0, A1, A2, A3 and A4 the Arduino Uno, with their negative legs connected directly to the ground pin of the Arduino Uno. The potentiometer regulates the brightness level of the LCD and is linked to VO, VCC, and ground of the LCD. The 330 Ω resistor limits the current flow. The anode of the green and yellow LEDs is connected to the analog pins of the Arduino Uno, D12 and D13 respectively, while the cathode is connected directly to the ground pin of the Arduino Uno. Each LED lights up when the candidate is chosen. The buzzer produces a sound to indicate the winner. The LCD pins of RS, E, DB4 to DB7 are connected to the descending order of pins 11 to 6 of the Arduino Uno, with VCC connected to 5V and ground to the GND pin of the Arduino Uno.

IV. RESULTS AND DISCUSSION

A. Voter Verification

The access to the voting process is controlled by the verification of the voter's IC number, as illustrated in Fig. 4(a) and Fig. 4(b). In Fig. 4(a), it can be observed that access to the voting process is denied because the IC number inserted by the voter did not match with the data stored in the system. Therefore, the voter is not qualified to vote in the election. However, in Fig. 4(b), it can be seen that access to vote is granted as the LED corresponding to the chosen candidate is lighted up, indicating that the voter's IC number has been matched with the stored data, and the voter can proceed with the voting process. The use of the IC number verification system ensures that only authorized voters can cast their votes in the election.
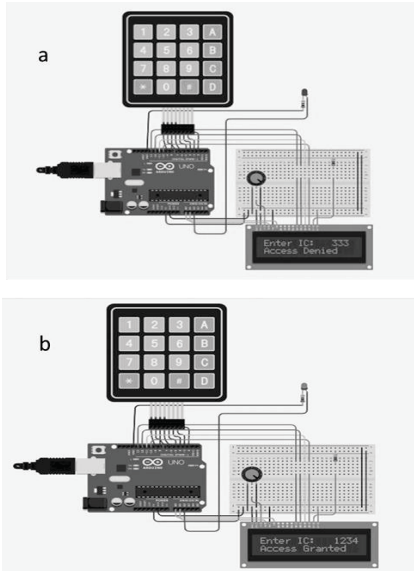
Fig. 4 (a) Access denied, (b) Access granted

The election results in Fig. 5 reveal that candidate A has won the election, based on the number of votes they received, while the buzzer produced a sound to signal the announcement of the winner.
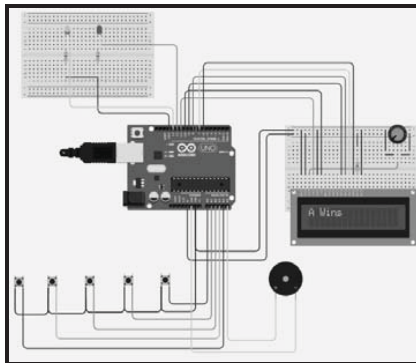
Fig. 5 Candidate A won

Similarly, in Fig. 6, indicate that candidate B has won the entire election due to the majority of votes received, and the buzzer has sounded to declare the winner.
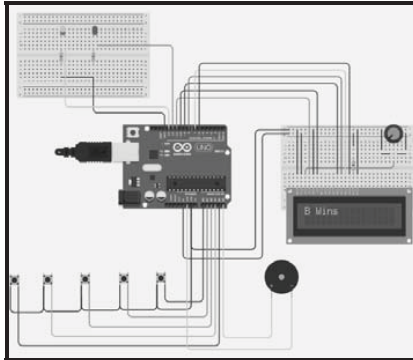
Fig. 6 Candidate B won

The winner of the election in Fig. 7 is candidate C and the buzzer produced a sound.
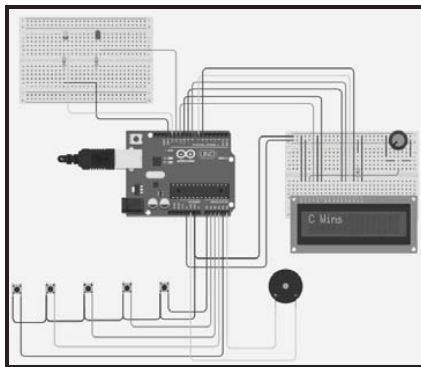
Fig. 7 Candidate C won

In Fig. 8, candidate D won the election and the buzzer produced a sound.
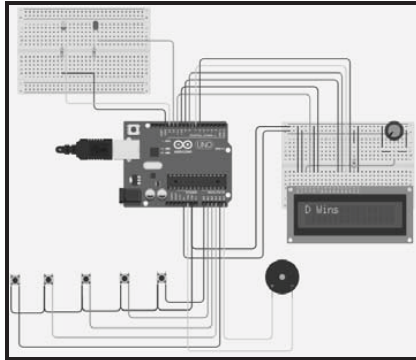
Fig. 8 Candidate D won

The votes between candidates are tied in Fig. 9 as all or some of the candidates received the same number of votes, resulting in no winner announcement LCD display "TIE UP OR NO RESULT".
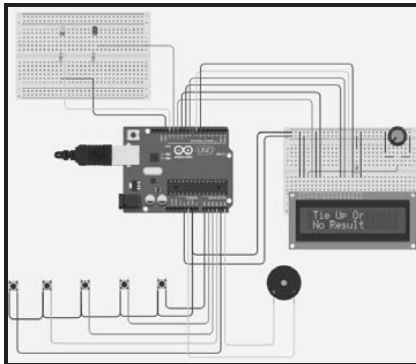
Fig. 9 Tie up or no result

Fig. 10 shows that no vote has been cast for any candidate, leading to the LCD display "NO VOTING" and no winner announcement. Thus, the election results vary based on the received votes of the candidates.
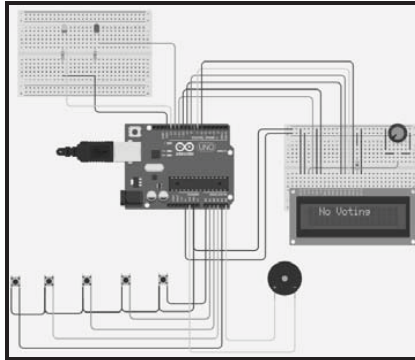
Fig.10. No Voting

V. CONCLUSION

To sum up, the developed voting system provides a solution to most of the current issues in the voting process. The proposed system is expected to offer a more secure and efficient way of voting, which is essential for the overall development of a developing country. This technique based on fingerprint verification is considered faster and more effective compared to the existing methods described in previous studies. The developed voting system is designed to automate the voting process and also speed up the vote counting process. Moreover, it reduces the cost of manual vote counting since the votes are counted digitally. It is recommended that the proposed electronic voting system be implemented at the national level to fully benefit from its ability to create a foolproof voting process.

Based on the conclusion, there are several future works that can be suggested for further improvements in the proposed electronic voting system.

Firstly, the system can be further enhanced by implementing additional security features, such as biometric authentication using iris recognition or facial recognition. This would increase the accuracy of the system and prevent any possibility of fraudulent activities during the voting process.

Secondly, the system can be integrated with a blockchain technology to provide a more secure and transparent voting process. The use of blockchain technology can provide a decentralized, tamper-proof system, ensuring that the results are secure and cannot be altered.

Thirdly, the system can be tested and evaluated in a real-world scenario, such as in a local government or university election, to assess its performance and identify any areas of improvement.

Lastly, the system can be expanded to accommodate a larger number of voters and candidates, with the addition of more input/output devices and data storage capacity.

Overall, further research and development can be carried out to ensure that the proposed electronic voting system is reliable, efficient, and secure for use in various voting scenarios.

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References

[1] R. Murali, P. Bojja, and M. Nakirekanti, "AADHAR based electronic voting machine using Arduino," *International Journal of Computer Applications*, vol. 145, no. 12, pp. 39–42, Jul. 2016, doi: 10.5120/ijca2016910786.

[2] R. Rezwan, H. Ahmed, M. R. N. Biplob, S. M. Shuvo, and M. A. Rahman, "Biometrically secured electronic voting machine," in *2017 IEEE Region 10 Humanitarian Technology Conference (R10-HTC)*, Dec. 2017, pp. 510–512, doi: 10.1109/R10-HTC.2017.8289010.

[3] S. Anandaraj, R. Anish, and P.V. Devakumar, "Secured electronic voting machine using biometric," in *2015 International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS)*, Mar. 2015, pp. 1–5, doi: 10.1109/ICIIECS.2015.7192976.

[4] B. U. Umar, O. M. Olaniyi, A. B. Olatunde, A. A. Isah, A. K. Haq, and I. T. Ajayi, "A bi-factor biometric authentication system for secure electronic voting system," in *2022 IEEE Nigeria 4th International Conference on Disruptive Technologies for Sustainable Development (NIGERCON)*, Apr. 2022, pp. 1–5, doi: 10.1109/NIGERCON54645.2022.9803174.

[5] N. B. Kintu and I. Z. Mohamed, "A secure e-voting system using biometric fingerprint and crypt-watermark methodology," in

[6] ASCENT International Conference Proceedings – Information Systems and Engineering, 2018, pp. 1–18.

[7] M. K. Alhasnawi and A. S. Alkhalid, "Secure online voting using steganography and biometrics," *International Journal of Current Engineering and Technology*, vol. 7, no. 3, pp. 1097–1104, 2017.

[8] N. P. Narayanan, C. S. Pradeep, P. Gulati, G. R. Bharath, and S. Nivash, "Design of highly secured biometric voting system," *International Journal of Engineering and Advanced Technology*, vol. 8, no. 5 Special Issue 3, pp. 111–114, Sep. 2019, doi: 10.35940/ijeat.E1028.0785S319.

[9] B. U. Umar, O. M. Olaniyi, L. A. Ajao, D. Maliki, and I. C. Okeke, "Development of a fingerprint biometric authentication system for secure electronic voting machines," *Kinetik: Game Technology, Information System, Computer Network, Computing, Electronics,*

and Control, pp. 115–126, Mar. 2019, doi: 10.22219/kinetik.v4i2.734.

[10] D. G. Nair, V. P. Binu, and G. S. Kumar, "An improved e-voting scheme using secret sharing based secure multi-party computation," Feb. 2015, [Online]. Available: http://arxiv.org/abs/1502.07469.

[11] N. R. Paulraj, G. Rajagopalan, M. Rajesh, S. V. Kiruthika, and I. Jasmine, "Smart voting machine based on fingerprints and face recognition," International Journal of Engineering Research & Technology (IJERT), vol. 5, no. 9, pp. 1–4, 2018, doi: 10.17577/IJERTCONV5IS09009.

[12] M. A. Zamir, D. A. Khan, and M. S. Umar, "Secure electronic voting machine using biometric authentication," in 2022 9th International Conference on Computing for Sustainable Global Development (INDIACom), Mar. 2022, pp. 511–516, doi: 10.23919/INDIACom54597.2022.9763202.

[13] J. P. Thomas, K. R. S. N. Kumar, V. Addanki, A. Gupta, and N. Chaturvedi, "Hardware implementation of a biometric fingerprint identification system with embedded MATLAB," in 2010 International Conference on Advances in Recent Technologies in Communication and Computing, Oct. 2010, pp. 155–157, doi: 10.1109/ARTCom.2010.79.

[14] M. R. M. Isa, Y. H. Yahaya, M. H. M. Halip, M. A. Khairuddin, and K. Maskat, "The design of fingerprint biometric authentication on smart card for PULAPOT main entrance system," in 2010 International Symposium on Information Technology, Jun. 2010, pp. 1–4, doi: 10.1109/ITSIM.2010.5561969.

[15] A. M. Jagtap, V. Kesarkar, and A. Supekar, "Electronic voting system using biometrics, raspberry pi and TFT module," in 2019 3rd International Conference on Trends in Electronics and Informatics (ICOEI), Apr. 2019, pp. 977–982, doi: 10.1109/ICOEI.2019.8862671.

[16] G. Deepa et al., "Biometric based voting system using aadhar database," in 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS), Feb. 2022, pp. 1071–1075, doi: 10.1109/ICAIS53314.2022.9743138.

[17] N. Kate and J. V. Katti, "Security of remote voting system based on visual cryptography and SHA," in 2016 International Conference on Computing Communication Control and automation (ICCUBEA), Aug. 2016, pp. 1–6, doi: 10.1109/ICCUBEA.2016.7860071.

[18] S. Ajish and K. S. AnilKumar, "Secure I-voting system using QR code and biometric authentication," *Information Security Journal: A Global Perspective*, vol. 31, no. 1, pp. 83–104, Jan. 2022, doi: 10.1080/19393555.2020.1867261.

[19] J. I. Pegorini, A. C. C. Souza, A. R. Ortoncelli, R. T. Pagno, and N. C. Will, "Security and threats in the Brazilian e-voting system: a documentary case study based on public security tests," in *14th International Conference on Theory and Practice of Electronic Governance*, Oct. 2021, pp. 157–164, doi: 10.1145/3494193.3494301.

[20] V. R. Ch, M. V. P. A, and B. S. S. A, "Arduino based electronic voting system with biometric and GSM features," in *2022 4th International Conference on Smart Systems and Inventive Technology (ICSSIT)*, Jan. 2022, pp. 685–688, doi: 10.1109/ICSSIT53264.2022.9716452.

[21] F. Hazzaa and S. Kadry, "New system of e-voting using fingerprint," *International Journal of Emerging Technology and Advanced Engineering*, vol. 2, no. 10, p. 9, 2012.

[22] N. Ashok, B. B. Teja, and A. Balakrishna, "RFID and fingerprint recognition based electronic voting system for real time application," *International Journal of Engineering Development and Research (IJEDR)*, vol. 2, no. 4, pp. 3850–3854, 2014.

[23] S. K. Shaw, S. Poddar, V. Singh, and S. Dogra, "Design and implementation of Arduino based voting machine," in *2018 IEEE Electron Devices Kolkata Conference (EDKCON)*, Nov. 2018, pp. 450–454, doi: 10.1109/EDKCON.2018.8770474.

[24] J. S. Manoharan, "A novel user layer cloud security model based on chaotic arnold transformation using fingerprint biometric traits,"

[25] *Journal of Innovative Image Processing*, vol. 3, no. 1, pp. 36–51, Apr. 2021, doi: 10.36548/jiip.2021.1.004.

[26] R. Patel, V. Ghorpade, V. Jain, and M. Kambli, "Fingerprint based e voting system using aadhar database," *International Journal for Research in Emerging Science and Technology (IJREST)*, vol. 2, no. 3, pp. 87–90, 2015.

S. Agarwal, A. Haider, A. Jamwal, P. Dev, and R. Chandel, "Biometric based secured remote electronic voting system," in *2020 7th International Conference on Smart Structures and Systems (ICSSS)*, Jul. 2020, pp. 1–5, doi: 10.1109/ICSSS49621.2020.9202212

Digital Transformation – Embracing Digital Change

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Abstract

Digital transformation is the rapid adoption and integration of digital technologies into all aspects of business and society. It is a process of change that is transforming how organizations, governments, and individuals interact, communicate, and conduct business. Digital transformation is enabling companies to better serve their customers, create new products and services, and increase their competitive edge. It also provides opportunities for economic growth and sustainability. This paper will discuss how organizations can embrace digital change and benefit from digital transformation. The use of innovative technologies such as artificial intelligence, machine learning, and the Internet of Things (IoT) can help companies become more agile, adaptable, and responsive to changing customer needs. Digital transformation is an ongoing process of change that is transforming how businesses and individuals interact. Organizations need to be digitally ready to make the most of the opportunities afforded by digital transformation. Leaders and managers must create an organizational structure and culture that supports the transformation, and develop the right skills and competencies to support the transformation. Organizations must take an agile approach to the transformation and focus on building trust and relationships with customers and developing the right strategies, processes, and technologies to support digital transformation.

Keyword: Digital transformation, technology, innovation, agility, customer-centricity, automation, data-driven and competitive advantage

INTRODUCTION

Digital transformation is the process of using digital technologies to fundamentally change the way businesses or organizations operate, deliver value to customers, or interact with their stakeholders.

In simple terms, it means using technology to make things better, faster, and more efficient. This can involve using digital tools to automate processes, improve communication, collect and analyze data, and provide better experiences for customers or users. Overall, digital transformation is about leveraging the power of technology to drive innovation, improve efficiency, and create new opportunities. It is an ongoing process that requires continuous learning, adaptation, and experimentation.

IMPORTANCE OF DIGITAL TRANSFORMATION

Digital transformation is essential for organizations to remain competitive and successful in the digital age. It enables companies to better serve their customers, create new products and services, and increase their competitive edge. It also provides opportunities for economic growth and sustainability. Digital transformation is enabling organizations to improve their operational efficiency, reduce costs, and improve customer experience. Digital transformation is becoming increasingly important for businesses across all industries. Here are some reasons why digital transformation is important:

- *Improved Operational Efficiency:* Digital transformation enables businesses to automate processes, reduce manual labour, and improve operational efficiency, resulting in cost savings and increased productivity.
- *Better Customer Experience:* Digital transformation enables businesses to personalize their interactions with customers, providing more relevant and engaging experiences that can enhance customer loyalty and drive revenue growth.

- **_Increased Agility:_** Digital transformation enables businesses to respond quickly to changing market conditions, customer demands, and emerging technologies, enabling them to stay ahead of the competition.
- **_Data-Driven Decision Making:_** Digital transformation enables businesses to collect and analyze vast amounts of data, providing valuable insights that can inform decision making and drive business growth.
- **_New Business Models:_** Digital transformation enables businesses to create new products, services, and business models that can drive revenue growth and open up new opportunities for innovation.
- **_Improved Employee Engagement:_** Digital transformation can improve employee engagement by providing employees with new tools and technologies that can enhance their productivity, collaboration, and work-life balance.

ADAPTING TO DIGITAL TRANSFORMATION

The world is embracing digital transformation, with governments and organizations implementing digital policies and strategies to make the most of the opportunities afforded by digital transformation. Governments are investing in digital infrastructure and developing digital skills to ensure their citizens and businesses have the necessary resources to succeed in the digital age. Organizations are investing in digital technologies and developing strategies to drive digital transformation.Adapting to digital transformation requires a change in mindset and a willingness to embrace new technologies and ways of working. It requires a holistic approach that involves people, processes, and technology. By embracing digital transformation and implementing new technologies and processes, businesses can unlock new opportunities for growth, innovation, and success.

INTERNET OF THINGS

The Internet of Things (IoT) is a network of physical objects embedded with sensors, software, and other technologies that allow them to collect and exchange data with other devices and systems over the internet. The IoT is transforming the way we live and work, and it is playing a critical role in digital transformation by enabling businesses to collect, analyze, and use vast amounts of data to make better decisions and improve their operations.

- *Smart Homes:* IoT-enabled devices such as smart thermostats, lighting systems, and security cameras are transforming homes into connected spaces, providing homeowners with greater control over their living environments.
- *Smart Cities:* IoT is transforming cities into connected ecosystems, enabling better management of resources such as energy, water, and waste, and providing citizens with access to real-time information about traffic, weather, and other city services.
- *Industrial IoT:* IoT is transforming industries such as manufacturing, logistics, and transportation by enabling real-time tracking of assets and inventory, predictive maintenance of equipment, and optimization of supply chains.
- *Healthcare:* IoT is transforming the healthcare industry by enabling remote patient monitoring, real-time tracking of medical equipment and supplies, and personalized treatments based on patient data.
- *Agriculture:* IoT is transforming the agriculture industry by enabling precision farming, where sensors and drones are used to monitor crop growth, soil moisture levels, and weather patterns, allowing farmers to optimize their crop yields and reduce waste.

ARTIFICIAL INTELLIGENCE

Artificial Intelligence (AI) is revolutionizing the way we live and work, and it is playing a critical role in digital transformation by

enabling businesses to analyze vast amounts of data and automate complex processes.

- ***Personalized Marketing:*** AI-powered tools such as recommendation engines, chatbots, and personalized advertising platforms are transforming the way businesses engage with customers, providing personalized experiences and increasing customer satisfaction.
- ***Fraud Detection:*** AI-powered fraud detection tools are transforming the banking and financial services industry, providing real-time monitoring of transactions and detecting fraudulent activities.
- ***Predictive Maintenance:*** AI-powered predictive maintenance is transforming the manufacturing industry, reducing downtime and maintenance costs by predicting equipment failures before they occur.
- ***Supply Chain Optimization:*** AI-powered supply chain optimization tools are transforming the logistics industry, optimizing routes, and reducing shipping costs.
- ***Healthcare:*** AI-powered healthcare solutions are transforming the healthcare industry, enabling the analysis of vast amounts of patient data to improve patient outcomes and reduce costs.
- ***Autonomous Vehicles:*** AI is transforming the automotive industry, enabling the development of autonomous vehicles that can operate safely and efficiently on the road.

MOBILE APPLICATIONS

Mobile applications are playing a critical role in digital transformation by enabling businesses to connect with customers, automate processes, and improve operational efficiency.

- ***Mobile Payments:*** Mobile payment applications are transforming the way we pay for goods and services, enabling secure and convenient transactions from anywhere, at any time.

- **On-Demand Services:** On-demand service applications are transforming the way we access services such as transportation, food delivery, and home cleaning, enabling us to order services instantly and track them in real-time.
- **Remote Work:** Mobile applications are transforming the way we work, enabling remote work and collaboration with colleagues from anywhere, at any time.
- **Customer Engagement:** Mobile applications are transforming the way businesses engage with customers, enabling personalized experiences, providing real-time support, and enhancing customer loyalty.
- **Augmented Reality:** Mobile applications are transforming the way we interact with the world around us, enabling augmented reality experiences that enhance our perceptions and provide new opportunities for learning and entertainment.

Mobile applications are a critical enabler of digital transformation, providing businesses and individuals with new ways to connect, automate processes, and improve operational efficiency. By leveraging mobile technology, businesses can transform their operations, improve customer engagement, and create new opportunities for growth and innovation.

DIGITAL TRANSFORMATION IN DIFFERENT SECTORS

Digital transformation is an ongoing process that is happening across many different sectors. It involves the use of digital technologies such as artificial intelligence (AI), the Internet of Things (IoT), cloud computing, big data analytics, and robotics to improve processes, products, and services.

- **Healthcare:** Digital transformation in healthcare is improving patient care, streamlining administrative processes, and helping clinicians make better decisions. Technologies such as AI, cloud computing, and big data analytics are being used to better understand patient data and make decisions on treatment options.

- **Retail:** Digital transformation in retail is transforming the way customers shop and interact with businesses. Technologies such as AI-powered chatbots, mobile apps, and voice-based shopping are changing the way customers shop, allowing them to make faster and more informed decisions.
- **Transportation:** Digital transformation in transportation is improving safety, reducing costs, and improving efficiency. Technologies such as IoT, autonomous vehicles, and drones are being used to monitor and control traffic, reduce carbon emissions, and improve logistics.
- **Education:** Digital transformation in education is helping to create more personalized learning experiences. Technologies such as AI, virtual reality, and augmented reality are being used to create more engaging and interactive learning experiences.
- **Manufacturing:** Digital transformation in manufacturing is improving productivity and quality, while reducing costs and risks. Technologies such as robotics, 3D printing, and AI are being used to automate processes and improve efficiency.

DIGITAL TRANSFORMATION FACED BY THE WORLD

Digital transformation has been a long process, with the world starting to embrace digital technologies in the early 1990s. It was in the late 1990s when the world started to embrace the internet, and the first digital transformation initiatives began. In the early 2000s, digital transformation started to take shape, with organizations investing in digital technologies and developing digital strategies. In the mid-2000s, digital transformation started to become more widespread, with organizations investing in cloud computing, analytics, and artificial intelligence. Today, digital transformation is the norm, with organizations embracing digital technologies and developing strategies to drive digital transformation.

In 2000: The early 2000s saw the rise of the internet and the emergence of digital technologies that enabled businesses to

become more efficient and connected with customers. Businesses began to adopt e-commerce, digital marketing, and other digital strategies to better serve customers and streamline operations.

In 2001: Organizations started to recognize the value of digital transformation and began developing strategies to stay ahead of the competition. Companies began to adopt cloud computing, artificial intelligence (AI) and machine learning technologies to improve customer service and enhance operational efficiency.

In 2002: Companies continued to invest in digital transformation initiatives, utilizing technologies such as big data and analytics to gain a better understanding of customer behaviours and trends.

In 2003: Organizations invested significantly in digital transformation initiatives, focusing on the development of digital strategies and customer-facing solutions.

In 2004: Companies began to explore the potential of emerging technologies such as 3D printing, augmented reality (AR), and virtual reality (VR) to improve customer experience and create innovative products and services.

In 2005: Digital transformation efforts began to focus on the development of mobile applications, allowing businesses to reach customers on-the-go.

In 2006: Companies continued to invest in digital transformation initiatives, developing strategies to capitalize on the power of the internet and new emerging technologies.

In 2007: Organizations continued to invest in digital transformation initiatives, focusing on the development of customer-focused solutions to improve customer experience.

In 2008: Companies began to adopt cloud computing and other digital technologies to improve operational efficiency and streamline processes.

In 2009: Digital transformation initiatives began to focus on the development of customer relationship management (CRM) solutions to better understand customer preferences and behaviours.

In 2010: Companies continued to invest in digital transformation initiatives, developing strategies to capitalize on the potential of social media and other digital technologies.

In 2011: Investment in digital transformation initiatives continued to grow, focusing on the development of innovative products and services to improve customer experience.

In 2012: Organizations began to explore the potential of big data and analytics to improve customer insights and gain a better understanding of customer behaviours.

In 2013: Companies continued to invest in digital transformation initiatives, focusing on the development of customer engagement solutions to drive customer loyalty and increase sales.

In 2014: Companies began to explore the potential of the Internet of Things (IoT) and other emerging technologies to improve operational efficiency and enhance customer experience.

In 2015: Investment in digital transformation initiatives grew significantly, focusing on the development of customer-centric solutions to improve customer satisfaction and engagement.

In 2016: Companies continued to invest in digital transformation initiatives, focusing on the development of solutions to capitalize on the potential of artificial intelligence (AI) and machine learning.

In 2017: Organizations began to explore the potential of blockchain technology to improve customer experience and create innovative solutions.

In 2018: Companies continued to invest in digital transformation initiatives, focusing on the development of solutions to better serve customers and enhance operational efficiency.

In 2019: Investment in digital transformation initiatives continued to grow, focusing on the development of solutions to capitalize on the potential of cloud computing and other emerging technologies.

In 2020: Companies began to explore the potential of augmented reality (AR) and virtual reality (VR) to improve customer experience and create innovative products and services.

In 2021: Organizations continued to invest in digital transformation initiatives, focusing on the development of solutions to capitalize on the potential of the Internet of Things (IoT) and other emerging technologies.

In 2022: Companies will continue to invest in digital transformation initiatives, focusing on the development of customer-centric solutions to improve customer satisfaction and engagement.

CONCLUSION

In conclusion, digital transformation is transforming the way we work, live, and play. It is an ongoing process of change that is enabling organizations to better serve their customers, create new products and services, and increase their competitive edge. Organizations need to be digitally ready to make the most of the opportunities afforded by digital transformation. Leaders and managers must create an organizational structure and culture that supports the transformation, and develop the right skills and competencies to support the transformation. Finally, organizations must take an agile approach to the transformation and focus on building trust and relationships with customers and developing the right strategies, processes, and technologies to support digital transformation.

References

[1]Vial, G. (2019). Understanding digital transformation: A review and a research agenda.
[2]Matt, C., Hess, T., &Benlian, A. (2015). Digital transformation strategies.
[3]Ebert, C., & Duarte, C. H. C. (2018). Digital transformation.
[4]Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., &Roig-Tierno, N. (2021). Digital transformation: An overview of the current state of the art of research.
[5] Schwertner, K. (2017). Digital transformation of business.

Digital Transformation in the Education Sector: Hierarchy Model for Online Learning
(Things Standing Shall Fall, Things Moving Shall Stay)

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Abstract

The world turned towards technology over some time. It is a very well-known fact that every sector has adopted technology over the last decade. It has substantially impacted the educational sector in the way of teaching and learning pedagogy, it gives a new way and opportunities for virtual learning facilitating students to access various education platforms across the globe. This got boosted in the wake of the COVID-19 pandemic which made digital education mandatory at schools, colleges and universities to ensure there is continuity in education. Smarter artificial intelligence tools have helped educators to access online modes of teaching throughout the world. Well-known researchers have given their opinion about digital transformation in a positive way which depicts the advantages of digitalization in the field of education. This research is purely based on secondary data and in descriptive

form. We have adopted Maslow's theory of the Need Hierarchy to make sure that how every level of needs of people has been transformed in the field of education with concerning to digital conversion. As a result, it continues to evolve more in future years with innovation in educational technology. It also consists of many drawbacks which will be published in the paper going forward.

Keywords: Digital Formation, Maslow's Model, Teaching-Learning Pedagogy

INTRODUCTION

Digital transformation is the process of using digital technologies to create new or modify existing processes, cultures, and customer experiences to meet changing requirements in all sectors. It is seen that changing information and communication technologies affect and even transform things in almost every area of the digital age that we have in conjunction with globalization. These rapid changes and transformations in the world affect education as a structure and learning environment.

Digital transformation in the educational sector is one of the most required changes in this world which will help to improve the learning experience for students as well as teachers.

Students who cannot afford to go to school for education can now be benefitted from the help of digitalization in the education sector and so many like-minded people who want to serve the poor but do not have enough infrastructure to accommodate students and teach have started taking classes through digital platforms because of which so many poor students got the gift of education. The major shift in the education sector happened after the outbreak of covid-19 over 1.5 billion have switched to online education. To help students keep learning, many schools turned to technology to help them bridge the gap. Digital transformation in the education sector, however, is not limited to post-Covid-19 online learning and education. Some educational institutes and schools have been using technology for

past years; the advent of the coronavirus pandemic has boosted the process of digital transformation in the education sector, leaving administrators, teachers, and students to adopt more digital methods to cope with lockdowns.

Now, most educational institutions are realising the significance of digital transformation in the education industry with the increased use of online classes and video conferencing solutions. It is the right time to implement and build technology solutions that will transform the way learning is offered to students.

REVIEW OF LITERATURE

Academicians' views on Digital Transformation in Education (2018)

The study clearly stated the evolution of digital formation in the field of education from an academician perspective on different areas; Results reveal that in the digital transformation process, managers must first create a vision to generate and managed accordingly for an effective learning environment. According to another result, school shareholders may be involved in this transformation process by letting them access the place and time by supporting content and infrastructure which is technologically appropriate. It is recommended that educational administrators and program specialists are ready for this transformation and have the qualities to manage this transformation. The teacher is an important point in the process of digital transformation in the production of appropriate content for the student and it is necessary to be supported in this direction.

Digital Transformation in Higher Education Institutions: A Systematic Literature Review (2020)

The objective of this paper is to summarize the distinctive characteristics of the digital transformation (DT) implementation process that has taken place in HEIs. The Kitchenham protocol was conducted by authors to answer the research questions and

selection criteria to retrieve the eligible papers. Nineteen papers (1980–2019) were identified in the literature as relevant and consequently analysed in detail. The main findings show that it is indeed an emerging field; none of the found DT in HEI proposals has been developed in a holistic dimension. This situation calls for further research e orts on how HEIs can understand DT and face the current requirements that the fourth industrial revolution forced.

Sustainable Management of Digital Transformation in Higher Education: Global Research Trends (2020)

Thus, the interest generated by the knowledge economy has implications in education as conclusive of economic growth. The ability of countries to both compete and cooperate in the global economy and respond to existing and potential challenges depends on the ability of their educational systems to develop basic skills, which enable greater learning and this is reflected in the research collaboration.

Digital Transformation towards Education 4.0 (2021)

This study clearly states that the TADEO method was applied in the context of classes' basic subjects of elementary and higher educators to increase students understanding level. The design and application of teaching and learning experiences from groups of drivers of the digital transformation to education aiming higher education.

Digital Transformation in Education Sector: The Way Forward for India (2021)

This paper measures the transformation in education after COVID-19. The study found that in India, a variety of virtual tools was unleashed from primary education to higher education where educational activities switched to online learning. Korableva (2019) highlighted the benefit of online courses over traditional classroom-based teaching. In extend of the study, more insight was

into the latest two online platforms, MOOC and Course era, to understand which is more user convenient as well as give the best solution in terms of knowledge.

THE CHALLENGES AND OPPORTUNITIES IN DIGITAL TRANSFORMATION FOR EDUCATION DURING THE COVID-19 PANDEMIC

This paper speaks about the opportunities and challenges in digital transformation in education during the COVID-19 pandemic. This paper says that significant changes in the education sector after COVID-19and challenges in digital transformation are infrastructures and skills aspects from students and teachers. Opportunities are wide research scopes, modifications, and creativities that can be explored during digital transformation. Therefore, teachers and students need to adapt to digital change in education

OBJECTIVES OF STUDY

a) To understand the level of transformation of digitalization.
b) To understand the impact of digitalization in the education sector.
c) To highlight the emerging changes in the education sector due to digital transformation.

STATEMENT OF THE PROBLEM

The digital transformation in the field of education concerning the hybrid mode of teaching-learning pedagogy lags behind improper guidelines, training, protocols etc. as the years evolved education industry has been impacted a lot by the variance of technology and its prospects. The research gap that we have identified is that it speaks about there is a tremendous gap between educators and other stakeholders of it in terms of resources required, planning premises, lack of strategies for making use of digitalization, skills in utilizing tech etc.

RESEARCH METHODOLOGY

The paper is framed by the study of Secondary Data, Review Papers, Maslow's Model of Need Hierarchy and our Educational model.
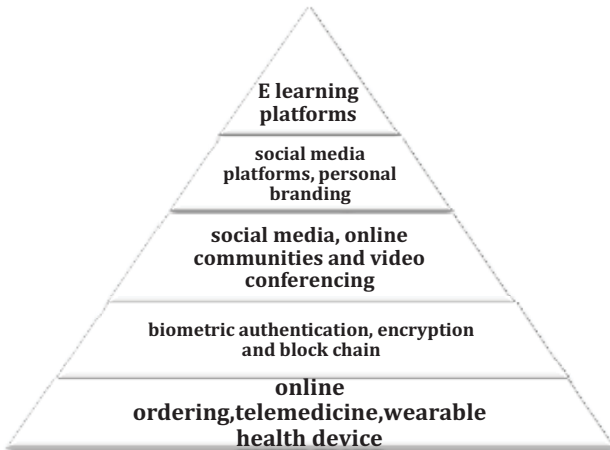
Digital transformation can also be viewed through the lens of Maslow's pyramid, as it can help individuals and organizations meet their needs and move up the pyramid. Here are some examples of how digital transformation can help meet the needs at each level of the pyramid:

1. **Physiological needs** - Digital transformation can help improve access to food, water, and healthcare through technologies such as online ordering, telemedicine, and wearable health devices.
2. **Safety needs** - Digital transformation can help improve personal and financial security through technologies such as biometric authentication, encryption, and block chain.
3. **Love and belonging needs** - Digital transformation can help improve social connections and relationships through technologies such as social media, online communities, and video conferencing.
4. **Esteem needs** - Digital transformation can help improve self-esteem and recognition through technologies such as social media platforms, personal branding, and online reputation management.
5. **Self-actualization needs** - Digital transformation can help improve personal growth and self-fulfilment through technologies such as e-learning platforms, online mentoring, and virtual reality experiences.

One of the most obvious advantages of e-learning is that you can save time and money. You can manage your schedule and take online courses at your most convenient time, whether early in the morning, late afternoon, or evening. You save money, too, because you don't have to pay for transportation or worry about eating on the go.

E-learning makes use of different platforms like Pedagogue, which provides interactive content. Also, you can share your thoughts and opinions with others. The more engaging the lessons, the more students can remember the information.

You can choose your learning path and study at your own pace. You become more motivated and invested in the course.

Students aren't the only ones that can save money in e-learning. Many educational institutions save money through this setup because there's no need to use a physical classroom, which translates to reduced monetary spending.

ADVANTAGES OF OUR E-LEARNING MODEL

1. **Saves time and money:** One of the most obvious advantages of e-learning is that you can save time and money. You can manage your schedule and take online courses at your most convenient time, whether early in the morning, late afternoon, or evening. You save money, too, because you don't have to pay for transportation or worry about eating on the go.
2. **Better retention:** E-learning makes use of different platforms like Pedagogue, which provides interactive content. Also, you can share your thoughts and opinions with others. The more engaging the lessons, the more students can remember the information.
3. **Personalized learning:** You can choose your learning path and study at your own pace. You become more motivated and invested in the course.
4. **Cost-effective:** Students aren't the only ones that can save money in e-learning. Many educational institutions save money through this set-up because there's no need to use a physical classroom, which translates to reduced monetary spending.
5. **Environment-friendly:** E-learning is also more environmentally friendly because it doesn't contribute to the pollution brought about by paper production.

INTERPRETATION

Basically the chart says the percentage of online learning students. Out of 100 students, 40% of students prefer to study on the main campus, 37% students prefer to study offline as well as online,

16% students prefer only online classes, 4% of students prefer a regional or branch campus and 6% of students prefer a secondary campus. This predicts the changes in digital education. According to this chart, After Covid-19 Pandemic, most of them prefer both virtual learning and offline mode of teaching and learning pedagogy.
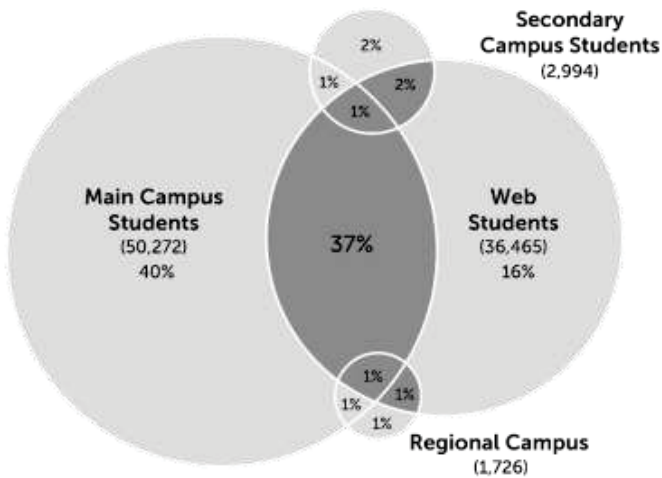
DISADVANTAGES OF E-LEARNING

1. **Lacks social interaction:** E-learning is one of the causes of social isolation because you don't see your teachers and classmates face-to-face anymore. Interaction is very limited to none.

2. **Inaccessible to others:**Consider yourself lucky if you're located in an area where the internet connection is fast and stable. Unfortunately, some have very limited access to the internet. They have to go to internet cafes or use public Wi-Fi which is very inconvenient.

3. **Cheating is unavoidable:** E-learning includes assessment, just like in a regular classroom setting. However, there are no

teachers or proctors to watch over you during exams. It's easy for online students to share answers knowing nobody is watching.

4. **Requires self-motivation and proper time management skills:** You're basically on your own in e-learning. You have to motivate yourself to study hard, take down notes, and gather more information. You should also manage your time well by learning how to juggle studying while doing other things like household chores or earning money part-time.

5. **Focuses more on theory:** You'll spend most of your time listening to podcasts, watching videos, and looking at slide presentations. There's no hands-on experience like conducting experiments.

FINDINGS FROM THE LITERATURE REVIEW

- It talks about the transformation in education after COVID-19.
- TADEO method was applied in the context of classes to increase students understanding level.
- A variety of virtual tools was unleashed from primary education to higher education for online learning.
- It is mandated for teachers and students to adapt to digital education.
- The teacher is an important point in the process of digital transformation and students are necessary to be supported in this direction.
- It is recommended that educational administrators should be ready for digital transformation and have the qualities to manage this transformation.
- To know the distinctive characteristics of the digital transformation implementation process that has taken place in HEIs.
- Digital transformation in the education industry helps improve the learning experience for students, teachers, and other people involved in the process.

- Such changes focus on improving engagement and accessibility through interactive and customizable learning.

CONCLUSIONS/ RECOMMENDATIONS

Digital transformation is one of the biggest catalysts of the business environment today, and education is not excluded from digital transformation. In the education sector, major changes happened after COVID 19 as people say all happens for good, so due to COVID-19, most people went for digital education which will be the need for hours. Finally, digital transformation in the education sector is the major change in the country. So the major changes in the education sector happened after COVID-19. Maslow's theory of need hierarchy methodology depicts the gradual changes in the digital transformation according to the needs of the people and the graph presented above shows the percentage of students preferring the suitable mode of teaching and learning pedagogy. But it has both advantages and disadvantages. The major advantage is the world is moving towards digitalization and the economy is improving. And the disadvantage is still in some of the rural places of our country don't have proper network proper technology usage and so on so we need to put efforts to make education accessible to all the people in the country by improving digitalization.

References

- *Academicians' Views on Digital Transformation in Education* *https://eric.ed.gov/?id=EJ1250526*
- *Digital transformation in education* *https://link.springer.com/chapter/10.1007/978-3-030-22493-6_24*
- *Digital Transformation in Higher Education Institutions: A Systematic Literature Review* *https://www.mdpi.com/1424-8220/20/11/3291*
- *Sustainable management of digital transformation in higher education: global research trends*

- *https://www.researchgate.net/publication/339839345*
- *Digital transformation towards education 4.0*
  https://www.ceeol.com/search/article-detail?id=1045455
- *Digital transformation towards education (4.0)*
  https://files.eric.ed.gov/fulltext/EJ1347756.pdf
- *The challenges and opportunities on digital transformation*
  for education during COVID 19 pandemic
  https://e-journal.staima-alhikam.ac.id/icete/article/view/784
- *Facilitating digital*
  transformation through education: A case
  study in the public administration
  https://scholarspace.manoa.hawaii.edu/handle/10125/64003
- *The blockchain technology as a catalyst*
  for digital transformation of education
  https://www.academia.edu/download/58412517/IJMET_10_0
  1_092.pdf
- *Digital transformation in German*
  higher education: student and teacher
  perceptions and usage of digital media
  https://educationaltechnologyjournal.springeropen.com/articl
  es/%2010.1186/s41239-018-0130-1
- *Digital transformation in education sector – A way forward*
  for India
  https://www.jetir.org/papers/JETIR2109507.pdf

Eclectic Approach in English Language Teaching in Higher Education

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Abstract

The paradigm shift in English language pedagogy and teaching in general brought in by the Corona pandemic is a blessing in disguise. To incorporate and introduce virtual classrooms in all educational institutions across India would have taken at least half a century to implement. When used effectively, ICT tools can greatly help the best learning outcome. Needless to say, the possibilities of virtual classrooms in helping students attend classes anywhere, anytime, and taking examinations stress-free. This paper advocates the use of the Eclectic method of Teaching. 'Eclectic approach is a method of language education that combines different approaches, methodologies to teach a language depending on the purpose of the lesson and the abilities of the learners'. Earlier research on the eclectic method is not very uncommon. However, in the present context, its relevance has to be emphasized. In this connection, some methods like Lecture & Discussion, Peer Instruction & Flipped Learning, Speaking & Reading activity, task-based learning among others were analysed in detail. It would show the need for this approach to achieve better learning outcomes.

Keywords: Eclectic Method, Language skills, ELT, Teaching methods and strategies

INTRODUCTION

In education, one of the queries every instructor has perhaps is the method or strategy to teach content for achieving learning

outcomes. The method itself is a variety of ways implemented in a class for academic success. One such method the present researcher used in English Language Teaching known as the Eclectic Method has been shared here. Having said that, an Eclectic Approach is used in language teaching or, more technically, English as a Second Language (ESL), or English as a Foreign Language EFL class which combines more than one method for the best learning outcome depending on the outcome of the lesson as well as the abilities of the learners. One of its proponents, Kumar (2013), defined "the eclectic method as a combination of different methods of teaching and learning approaches." More precisely, an eclectic method is a combination of different methods, techniques, or even strategies of teaching, which create a suitable environment for achieving the objectives with respect to the student's needs, and it provides liberty to teachers to choose different teaching methods and strategies for achieving the learning goals. The paper advocates using the Eclectic method at the higher education level in India applied to English Language Teaching. However, most of the methods are general and thus can be used in general teaching to a greater extent. The primary data collected from 333 students in and around Puducherry on the practice of Eclectic method were analyzed and interpreted. The author has penned a conceptual paper on the same, for it's high time that we discuss what is actually being done in class.

A brief literature review on the implementation of the Eclectic method since 2000 is quoted here. 'Principled Eclecticism' has been used from the turn of the 20th century, notably by Larsen-Freeman (2000) and Mellow (2000), to denote a desirable, coherent, pluralistic approach to language teaching provided it matches the learner's needs. Wali (2009) proposed that principled eclecticism should not serve methods but learners. In 2011, Goa stated that eclecticism makes use of all the essential language skills, i.e., Listening, Speaking, Reading & Writing (LSRW Skills), or in other words, a combination of skills that are being utilised in classrooms. David Sani Mwanza quotes the

advantages of the Eclectic method as being learner-centered, context-sensitive, live, motivating, participatory, and various classroom activities and tasks, among several others (2017).

In English language teaching, Rao Parupalli (2018) put forth the following outcomes in teaching grammar, vocabulary & language skills.

(i) Eclectic Approach can be used in teaching grammar, particularly in combining sentences, separating sentences, identifying pronouns and their antecedents, words and synonyms, and prepositional phrases, focusing on specific language features pertinent to learners' contextual needs.

(ii) An English teacher follows three important guidelines in teaching vocabulary. Firstly, they try to make the students understand the vocabulary in context. Secondly, they try to manage the translating technique, and thirdly, he develops a strategy among the students to guess or extract the meaning of words.

(iii) Using the Eclectic Approach, the teachers of the English language follow these guidelines in teaching vocabulary effectively. In the listening and speaking activities, the teachers focus on the speaking abilities of students by teaching critical grammatical aspects such as parts of speech, voice, sequencing of words, concord, comprehension of sentences, and sequential order of thought in speech as well as the ability to interpret and make a critical evaluation in the course of Listening.

RESULTS AND DISCUSSION

This section presents an analysis of each question with a 5- Point Likert scale where 1 star = Strongly Disagree to 5 star = Strongly Agree.

Responses to the first question revealed that 42.5% of the respondents have agreed that the *Lecture & discussion* method is effective for better learning, followed by 36.7% of respondents

have given 3 stars which means they stay neutral .may be because of different levels of learners & learning motivation.

Teaching through eclectic method is a rich combination of multiple activities. For examples, following two methods will be combined in a single ...e best combination.   Lecture and Discussion
332 responses
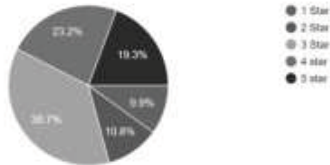
Again, more or less the responses for ***Demonstration and Question & Answer Sessions*** seem to be similar. This table shows that 18.7% & 23.2% responded in favour of the Demonstration method followed by sound Q & A session. Here again,30.4% have given 3 stars which the present researcher views as highly receptive & moderate learners enjoying the methods involved. It can also be implied that 30 % of students were experiencing the first kinds of such methods.

Demonstration and Question & Answer Sessions
332 responses

The same goes for Sharing Information followed by debates.

In the figure shown here, more than 50% of learners support when knowledge dissemination and debates are made use of in a single class. This overwhelming feedback is perhaps due to debates, particularly sound debates being employed in class.

Debates enrich any academic classroom that caters to all kinds of learning.

PEER INSTRUCTION & FLIPPED LEARNING

Both Peer & Flipped method of learning is different from traditional pedagogy where students learn at home watching audio & video lesson uploaded by the tutor. In class, they discuss with their peers and ask doubts from peers and instructor as well. Thus, it's a student-centred approach. A teacher is not underestimated. He/she is a active facilitator. Recent research world over during the Corona pandemic shows that flipped learning and peer instruction can be valuable strategies to be considered for actively and deeply engaging students in the learning process across all levels in higher education. Both approaches can be fully adapted and tailored to a range of subject contexts and programmes by practitioners, and work well in the blended and the online classroom supported by networked technology when taking into consideration the four key characteristics of what works in the technology enabled classroom: activities, choice, facilitator support and community (Nerantzi, 2017).

Peer & flip teaching
332 responses
1 Star
2 Star
3 Star
4 star
5 star
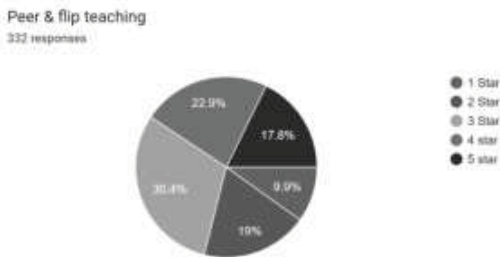
As mentioned earlier, the eclectic method used in the English Language Teaching (ELT) and some of the results may be of some use as it's pointed in the table here.

ELT Tasks	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Task Based Activities And Assignments	8.4	10.6	28.9	25.3	26.8
Speaking And Reading Activity	10.8	13.9	21.1	22.6	31.6
LSRW Tasks	13	13	22.9	28.3	22.9
Reading And Writing	10.5	14.5	19	25.3	30.7
Reciting And Poem Interpretation	13	13	26.2	25.3	22.6

The English language is spoken all over the world while teaching of English becomes something like a unique selling point. Since the second half of 20th century a new paradigm shift approaches came to exist thanks to Linguistics. The move away from following single specific method to teach English to various range of techniques, strategies paved way for the Eclectic method in ELT. Traditionally, Grammar Translation Method was used to teach English in which a foreign language (Target Language) is contrasted with that of a native language. To overcome GTM, Direct Method and from it Audio-lingual method became into effect. It was thought as a natural way of language teaching besides ignoring bilingual technique completely. The weakness again in Audio Lingual or Aural Oral or in other words in change to a single method seems to be best way out. In such a context, Eclectic method was applied where two different methods are clubbed. For example, Audio-lingual & communicative are used in teaching English also, as seen in the table above, LSRW skills like Reading & Writing are taught in a single class. Similarly, Speaking & Reading can go together meaning the four skills (LSRW) are of paramount importance. It can be seen here that 50% and above students have given 5 & 4 stars for eclectic method tasks in class respectively.

The final table for the effectiveness of the eclectic method is given below.

The overall feedback on the Eclectic Method for questions such as

(i)   Learning through the Eclectic method is interesting.
(ii)   The Eclectic method helps learners pay attention.

Eclectic Method	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
(i)	1.24	38.3	26.8	10.8	9
(ii)	15.7	31.9	25.9	15.4	11.1

Most students agreed (39% + 46%) that the Eclectic method was helpful i.e., to pay attention in addition to eclectic method classes being interesting.

CONCLUSION

The result shows that the eclectic method of teaching is effective in learning and teaching as it is evident through the responses from the students. Interestingly the result of this study goes in line with the some of the previous researches. Rekha (2014) found that eclectic methods developed students' reading, listening comprehension and pronunciation skills. The eclectic method used to teach Turkish Language found that the teacher has given freedom to use methods and positive advantages as well for the acquisition of skills (Ademİşcan, 2017). The eclectic method studied in China has found that the attention and motivation of students have increased (Yun et.al. (2007) Not only in ELT, across domains of teaching in general and even in disability studies,

eclectic methods were found profitable. In this context, Kaur, Kohli and Devi (2008) established that cognitive strategies and the eclectic way lead to the development of Mathematical skills of students with disabilities.

The results of this study is to share the importance of Eclectic method in ELT without ignoring it's weakness such as it may confuse teacher to bring two styles or methods together.

References

Al-Khasawneh, Fady. (2022). *A systematic review of the eclectic approach application in language teaching. Saudi Journal of Language Studies. 2. 1-11. 10.1108/SJLS-11-2021-0022.*

Ademİşcan 92017). *The Use of Eclectic Method in Teaching Turkish to Foreign Students. Journal of Education and Practice www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online) Vol.8, No.7, 2017.*

Gao, L. (2011). *Eclecticism or Principled Eclecticism. Creative Education. 2(4): 363-369.*

Kaur, T., Kohli, T. and Devi, B. (2008). *Impact of various Instructional Strategies for Enhancing Mathematical Skills of Learning Disabled Children. J. Indian Assoc. Child Adolesc. Ment. Health, 4 (1), 16-19*

Kumar, C.P. (2013). ***The Eclectic Method: Theory and Its Application to the Learning of English****. International Journal of Scientific and Research Publications, 3(6). ISSN 2250-3553.*

Larsen-Freeman, D. (2000). *IB (2nd ed.). Oxford: Oxford University Press*

Nerantzi, Chrissi. (2020). ***The Use of Peer Instruction and Flipped Learning to Support Flexible Blended Learning During and After the COVID-19 Pandemic****. International Journal of Management and Applied Research. 7. 184-195. 10.18646/2056.72.20-013.*

Rekha (2014). ***Effect of Eclectic Method on Reading Ability among Primary School Dyslexic Children.*** *GHG Journal of Sixth Though, 1 (1), 13-16*

Richards, J.C. and Rodgers, T.S. (2001). **Approaches and Methods in Language Teaching** (2nd Ed.). Cambridge: Cambridge University Press.

Rao, Parupalli. (2018). **Eclectic approach in English language teaching: A comprehensive study**. 8. 40. 10.5958/2249-7137.2018.00055.1.

Suleman Q., Hussain I., (2016). **Effects of Eclectic Learning Approach on Students' Academic Achievement and Retention in English at Elementary Level**, Journal of Education and Practice, Vol. 7, No:16.

Xiao-yun, Y., Zhi-yang, Z., &Peixing, D. (2007). Principled eclecticism in college Asian EFL Journal, 17, 1-38.

Education for Attaining Sustainability

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Abstract

Undoubtedly, it can be said that timely development should occur in human life. But it should be in such a way that the development should aim at the overall improvement of our planet. It is with this view UNESCO has given priorities for attaining the goals of sustainable development. The United Nations has put forth 17 Sustainable Development Goals which provides a blueprint for prosperity and for the people and the planet. The UN has included Education as one of their goals for sustainable development. This paper discusses the reciprocal relationship of Education and Sustainable Development Goals (SDG). SDG Goal 4 deals with Quality and Inclusive education for all and targets to provide quality, equitable and free education without any disparities and at the same time enhance the skills of the youth which will help them find better employment opportunities and develop entrepreneurial skills. This will improve the economic stability and thereby their standard of living. It also emphasizes on Ensuring Inclusive and Equitable quality education at the same time promotes lifelong learning opportunities for all. Education will make them aware of the umpteen problems our earth is facing and will encourage them to collectively strive for a sustainable world irrespective of Race, Religion and Economic status. Therefore, Education plays a crucial role in creating a sustainable and equal world which is even more relevant in today's pandemic affected world. Education is the most effective means that can confront the challenges of the future.

INTRODUCTION

Education for Sustainable development: SDG 4 – Ensuring inclusive and equitable quality education to promote lifelong learning opportunities for all

Education for Sustainable Development (EDS) is one of the goals of Sustainable development. It aims to empower the learners with knowledge, skills, values and attitudes so that they will be able to face the global challenges like climate change, biodiversity issues, poverty, inequality, degradation of environment, etc. by 2030 (UNESCO, n. d.). The notion of "Education for Sustainable Development" was first put forth at the 'International Conference on Environment and Society: Education and Public Awareness for Sustainability' by UNESCO and the Government of Greece in 1997. It was a noble initiative by the UN to declare 2004-2015 as the decade of Education for Sustainable Development. Education is multidisciplinary; improvement in this field will indirectly improve all the other sectors too. It aims at giving good quality education to people in all sectors of society and providing life-long learning opportunities to them. Keeping this in view, the New Education Policy of India, 2020 has given prominence to give good quality education to all, irrespective of caste, creed, gender, community, geographical area, etc. NEP 2020 aims at giving education to meet the needs of the digital era. SDG aims at ensuring primary and secondary education irrespective of any bias. It aims at developing quality technical and vocational courses.

It is necessary to reconsider the notion of education quality that includes both global and local traditional knowledge that supports emotional and practical abilities, potential and capabilities including improving the cognitive abilities of students and their endowment with value, ecological integrity and equitable

well-being. Involvement of children is the most important component of Education for Sustainable Development. The following should be considered

1. Planetary awareness
2. Caring for future generations
3. Nurturing bioregional cultures and local knowledge
4. Expanding our ethical horizon
5. Celebrating life

Education helps making developments in the following factors:

1. Decision making
2. Quality of Life
3. Implementation

Critical thinking helps in making better decisions and implementing better ideas. SDG 4 also has linkages with all the other SDGs across the 2030 Agenda. Access to quality education will help create mobility and reduce inequalities in the society. Education is essential in tackling critical challenges like climate change and will help youth prepare for employment in the high-skill jobs and is a foundation for peaceful and prosperous societies. Investments in education that are not accompanied by concurrent progress in other aspects of human wellbeing will fall short of enabling all people a good standard of living. Good child health and nutrition are essential to not only increase attendance but also improve educational achievements. Similarly, ending poverty and thereby reducing the pressure on the children to work which affects their physician and mental health. Hence it is essential to increase the universal school enrolment. There should be steps taken towards the objective of 'leaving no one behind'.

Achieving Sustainable Development through Education

Sustainable Education encompasses the broader concepts of Socio-cultural and Socio-political issues such as Poverty, Equality, Democracy and Quality of life in relation to the environment.

It helps in making necessary developments to improve the quality of life both locally and globally and thereby creating a secure and suitable environment for the future generations as well.

Rosman, Omar and Zahari (2019) in their study reports that teachers are of the opinion of integrating sustainable development into the daily teaching, even in the technology subject. Proper guidelines should be made to inculcate the aspect of Sustainable Education. The area of science and technology for sustainability has increased substantially and these interventions have been very successful by far. The participation of the students, local residents as well as local government is vital in developing a sustainable world.

The other aim of education is ensuring a healthy life and well-being. One who gets proper education will know how to keep themselves and those who are around them healthier in all aspects. They will take actions for good hygiene including proper sanitation, good water supply etc. They will be aware of the need to consider all as humans, irrespective of gender. Male dominant society will be slowly changed to no gender disparity society, where all gender will be treated similarly.

The aim of promoting peaceful and inclusive societies for sustainable development can be definitely achieved by providing quality education. It will enable the future generation to think critically on every subject and to take the correct decision to keep this planet where we are living, happy and peaceful. The competitive mind among nations resulting in war should have to be changed. Education for sustainable development should aim at developing a competitive mind in the people for making their surrounding stress free, tension free and peaceful.

The four main levels of learning depending on the age are

a. Basic/Elementary education
b. University
c. Organizations
d. Lifelong Learning

Proper awareness must be spread from the grassroots level on the SDG's and the role of each individual in developing a sustainable world. Fostering sustainable and long- term behaviour changes in the youth can be included through the integration of SDG's in the educational curricula.

Efforts to improve access to schooling and the quality of education are to be made to make progress towards universal completion of primary and secondary schooling. The slowing down of progress could reflect difficulties reaching those populations that are being left behind. It could even be associated with other deprivations like Poverty and poor nutrition that must be addressed to enable children to attend school.

Accordingly, greater support and resources are needed for making relevant initial and continuous professional developments, appropriate recruitment and deployment processes, decent working conditions, and opportunities for sharing promising practices, professional autonomy and career pathways for teachers. Teachers and educational institutions should be involved in the monitoring and development of education policy.

1. Re-orientation of curriculum, teaching and learning
2. Capacity Building
3. Resources and Materials
4. International and Regional Co-operation

CONCLUSION

SDG Target 2030 has been taken into granted by almost all nations of the world. It is true that almost all citizens of the world long for a peaceful living. If properly implemented and succeeded in achieving the SDG target our earth will be transformed into a heaven. One of the aims of SDG is ensuring quality education to all thereby making the future generation to face the future challenges from the society and nature and finding a sustaining solution for that. If given proper education to all as early as possible, it will be easier to attain the other 16 goals of sustainable development, for an educated generation will act more effectively

than others. Nations would concentrate more on giving quality education. Then, it will make it halfway to the other goals. It helps develop competence to think in a forward-looking manner and to deal with the uncertainty and therefore make plans for the future. The 3 P's of Sustainability (People, Planet and Profit) and the 3 E's (Efficiency, Environment and Equity) is correlated with Education being the catalyst between the two. Sustainable development requires changes in peoples' attitudes and values, and education allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future.

References

United Nations (n.d). Sustainable Development. Department of Economic and Social Affairs
UNESCO (n.d.). Education for Sustainable Development. United Nations Educational Scientific and Cultural Organization.https://en.unesco.org/themes/education-sustainable-development#:~:text=Education%20for%20Sustainable%20Development%20(ESD,of%20biodiversity%2C%20poverty%20and%20inequality.
Rosman, R.N., Omar, M.K., Zahari, Z. (2019). The Integration of Education for Sustainable Development (ESD) in Design and Technology Subject: Through Teacher's Prospective. Asian Journal of Assessment in Teaching and Learning. 9 (2)
Anastasia Nasibulina, (2015). Education for Sustainable Development and Environmental Ethics: Journal on Science direct
MikikoCars Emma E. West :Education for sustainable society: attainments and good practices during the United Nations Decade for Education for Sustainable Development (UNDESD)
Jane Wright. Education and Sustainability - Responding to the global challenge: Academia

Effective Grammar Teaching through Task Based Activities

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Abstract

This research chiefly conducts to understand the struggles faced by the high school students of learning English language grammar. The study also was attempted to understand the level of student, and through the Effective English language teaching by the task based activities will enhance the skills of the students. Based on the observation and also the interaction with the learners, syllabus will be designed. This research aims to conduct task based activities and assessments, through which can be able to analyse and rectify the errors for them to enhance their knowledge in English language. A pre-test will be conducted to determine the present proficiency level of children. According to the students level and feedback syllabus will be modified. The methodology that will be conducted for this research project mainly focuses on observing the students and designing the syllabus. Ultimate goal of this research project is to be strong in English language without any grammatical errors and that will help them for their upcoming higher studies.

Keywords: Task Based Languge Teaching, Communicative Languge Teaching, Presentation, Pratice and Performance

INTRODUCTION

The task-based view of language teaching, based on the constructivist theory of learning and communication language teaching methodology, has evolved in response to some limitations of the traditional P-P-P approach, represented by the procedure of presentation, practice, and performance, as was indicated by Ellis in his book *Task Based Language Learning and Teaching* and by Long and Crookes in their article "Three Approaches to Task-Based Syllables Design". TBLT can be seen as both a refinement of communicative language teaching [CLT] as well as a reaction to the use of form- focused models such as PPP, critics of PPP claim that it fails to meet an essential requirement of CLT, which is to treat language 'primarily as a tool for communicating rather than as an object for study or manipulation [Ellis, TBLT & L ix]. Task-Based language teaching refers to 'contexts where tasks are the central unit of instruction: they drive classroom activity, they define curriculum and syllabuses and they determine modes of assessment' [Samuda & Bygate 58]. The world is changing on full swings. Everyday a new development is coming almost in every field. Our education system is changing too. But sadly many parts of the countries, especially the rural areas are still struggling to get the good infrastructure for the education of the children. "We may think that our classrooms are far more modern, but what exactly has changes? The answer, sadly, is "not much". Aside from some minor differences in furniture, many classrooms look and operate much in the way they did 200 years ago. They are overwhelmingly teacher-centred and learning materials are often limited to books and workbooks. Teachers may write on whiteboards with erasable pens instead of on classic approach of remembering through repetition. Contemporary adult learners require new approaches and materials that address new needs in their social, professional, and academic English. New teachers approaches include being able to adjust lessons and tasks to work with more able and less able learners. New materials with more engaging approach to

contemporary topics and blended learning opportunities extend classroom instruction.

Tache [2018] also stated that "For years, language teachers found ways to make a naturally exciting topic into a deathly dull one. Language teaching for most of the 20th Century was heavily influenced by the 'grammar- translation' of the 19th Century, which involved learning anew word or grammatical structure, translating it into your native language and memorizing it. Teaching was based on a strict syllabus of what educators considered to be important, whether it was relevant to students' needs or not. This led many people to think they were bad at languages. Techniques gradually adapted to be more situational, so grammar and vocabulary would be taught in contexts in which you might realistically use it. But the emphasis was still very much on reading, repeating and memorizing."

So we can say that there is dire need to change the methods and techniques of English language teaching.

This study deals with the comparison between two different types of school. The goal of the study is to test, analyse and discuss about the results of two different types of school. To sum up, the aim of this study is to teach the grammar through the task -based activities for both the schools. Hence, my research questions are formulated as follows:

How effective is a Task Based Language Teaching method for teaching grammar in Matriculation school?

How effective is a Task Based Language Teaching method for teaching grammar in Government school?

THE STUDY

This study deals with how to teach grammar through Task-based activity for two different types of school. In this study the sample was drawn from Matriculation and Government school.

The study was initiated on 10 students of class VII studying in Matriculation school. At first observation has held and then pretest was conducted. From that pretest the researcher came

to know that , most of the students are not aware of basic grammar. Few students are able to identify the types in parts of speech where as others are not able to do that.

The study in government school was initiated on 10 students of class IV and V. Here too at first pretest was conducted . From the pretest test, the researcher came to know that, the students are not able to write their names in English language itself. Many students were struggling to read or write a word in English language.

INTERVENSION

Intervension process starts by conducting some Task-Based Activites. For Matriculation school before the intervension process, conducted some warmup activities such as "word building", "names with adjective word" which helps to enhance their vocabulary skills.

For Government schools since they were lagging in basics English language, the researcher at first taught the phonetic sounds of the letters which helps them to read or write a word in a English language.

For the intervention process the researcher conducted the task based activities to teach the basic grammar such as "Parts of speech".

Parts of speech	Task-Based Activities
Noun	Name, Place, Thing games
Verb	Enacting the action
Adverb	Describing about someone or something's action
Adjective	Describing about someone or something
Pronoun	Balloon game [have to say the pronoun word according their classroom situation]
Preposition	Balloon game [have to say the preposition word according to their classroom situation]

Conjuction	Balloon game [have to say the conjuction word according to their classroom situation]
Interjection	Express their feelings

CONCLUSION

After the intervention process the post-test was conducted. From that post-test, the researcher came to know that the Matriculation school students are able to frame a sentence by using parts of speech. And the Government school students are just able to identify the suitable parts of speech in a particular sentence. So, both the school students, needs the correct guidance and proper education. More than theoretical class , the practical class will enhance their skills and knowledge in English Language.

References

Michael H.Long, G.Crookes (1992). Three Approach to Task-Based syllables Design.
Samuda, V., & Bygate, M. (2008). Tasks in Second Language Learning. Basingstoke: Palgrave Macmillan.
Tache, O. (2018, December 19). How has language teaching changed? ESL language studies abroad. https://blog.esl-languages.com/blog/learn-languages/language-teaching-has-changed/

Holistic Education – The Need of the Hour

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Abstract

The world is evolving astonishingly quickly and there are more tools at each student's disposal than ever before. In the olden days when there were only a handful of professions to choose from, now-a-days, there are hundreds of new professions emerging, which require a different set of specialized skills. These skills can be attained and sharpened by Educating the young generation in all aspects of behaviour or by all round development. But the harsh reality of the present education system in India is the need of a massive overhaul. It is realized that success in the contemporary world relies not just on cognisance, but also on creativity, entrepreneurship and the ability to explore. While academic excellence is emphasized at every level, the focus is placed on universal values, ethics, discipline, creativity and personality development in the initial years, before shifting to academic achievement, leadership and entrepreneurial skills, and key competencies for vocational and career progression during the secondary and high school years. National Education Policy (NEP) also underlines the need for holistic education to lead the country into the 21st century and as per NEP, holistic education has to be imparted in all educational programmes ranging from traditional disciplines of humanities, social science, and science to various professional, technical, and vocational disciplines. So the best way to look forward is to create a holistic education system that combines education and technology, tradition and innovation together complementing each other.

INTRODUCTION

Over the course of time, we have gone through a number of changes in the systems of education. Each system has its own unique set of advantages. These systems have evolved over time giving way to the modern education system as we know it. The modern education system is the widely accepted standard throughout the industry and is known by many names. Some call it traditional education, back-to-basics, customary or the conventional education system. In short, this is the system followed by the large majority of institutes in India.

The world is evolving astonishingly quickly and there are more tools at each student's disposal than ever before. In addition, gone are the days when there were only a handful of professions to choose from – nowadays, there are hundreds of new professions emerging, which require a different set of specialized skills. These skills can be attained and sharpened by Educating the young generation in all aspects of behaviour or by all round development. But the harsh reality of the education system in India is the need of a massive overhaul. It is realized that success in the contemporary world relies not just on cognisance, but also on creativity, entrepreneurship and the ability to explore. While academic excellence is emphasized at every level, the focus is placed on universal values, ethics, discipline, creativity and personality development in the initial years, before shifting to academic achievement, leadership and entrepreneurial skills, and key competencies for vocational and career progression during the secondary and high school years. National Education Policy (NEP) underlines the need for holistic education to lead the country into the 21st century and as per NEP holistic education has to be imparted in all educational programmes ranging from traditional disciplines of humanities, social science, and science to various professional, technical, and vocational disciplines. So the best way

to look forward is to create a holistic education system that combines education and technology, tradition and innovation together complementing each other.

Holistic education focuses immensely on each student discovering their unique pathway. In simple terms, this form of education can be called 'whole child education'. The development of emotional, intellectual, physical, spiritual and social aspects of the student is the main focus areas of holistic education.

PURPOSE OF HOLISTIC EDUCATION

Holistic education nurtures a child's physical, mental, ethical, and cognitive qualities. Holistic education offers learning tailored to a child's abilities and emotions. Lessons are taught in a secure, friendly setting that encourages students to use their unique skills. Teachers must be prepared to work with diverse academic achievements and learning capacities of students. While a single underlying principle governs holistic education, instructors can use various techniques and approaches to foster a holistic learning environment.

INDIAN EDUCATION SYSTEM AND HOLISTIC EDUCATION

The Indian Education system, generally known for its snail pace towards necessary transformations, has started a tectonic shift in recent years. The pandemic forced us to undergo a dramatic transformation wherein the concept of learning has been completely altered. The pandemic brought some unprecedented social and economic disruptions including to the Education System. There is also a need for a more holistic and vibrant citizenry approach, which can one way be addressed through a significant stride in the present education system.

India has a long and rich tradition of multidisciplinary approach towards learning and teaching. Even Rig-Veda recognizes and illustrates the scope for limitless learning, focusing

on different facets of education. Ancient institutions such as Nalanda and Takshashila exemplified this very system, where almost every branch of knowledge like singing, painting, chemistry, mathematics, vocational courses such as carpentry, clothes making, professional fields like medicine, engineering and soft skills like debate, discussion, communication, were taught. However, the broader learning system kept on narrowing over the centuries. And in recent years the focus moved to specialization in particular subjects or fields, which has resulted in the growth of single stream institutions.

The Indian vision of education has always relied on imparting education to the individuals that lead to the holistic development of the personality, meaning the integrated development of body, mind, intellect and soul. Only by educating the whole individual and addressing his physical, emotional, ethical, moral, cultural, social, and academic needs can a compassionate, knowledgeable personality be developed.

Our teaching-learning system from pre-primary school to higher education level must focus on imparting education in an integrated learning format that creates individuals who have intrinsic reverence for life, who are physically, mentally and morally sound, possessing exemplary knowledge and skills in the chosen disciplines, but serving as the treasure of humanitarian values such as compassion and peace, realizing the purpose of life and purposeful connections between the local community and natural world.

Over the years we have been witnessing a change in the world of education. Some say that this change is happening due to our realization that the current education system is too mechanized and lacks the power to positively influence the overall development of a child. Many schools are changing their teaching methodology by making room for some level of holistic learning. This is a good sign according to many experts and is bound to have a meaningful impact on education in the long run.

Our education system has a learning and evaluation process to test the learning levels of students. Competitive exams were

designed for these levels, and provided feedback. However, over time, the toll of writing these competitive exams led our students to fear them. Prime Minister (PM) Narendra Modi, having understood this fear, launched Pariksha Pe Charcha where he interacted with a group of students and taught them how to become exam warriors, not "exam warriors".

DIFFERENCE BETWEEN TRADITIONAL AND HOLISTIC EDUCATION

The distinction between the two types of education is that conventional education focuses on different, independent topics. Holistic education focuses on the learning experience and covers several subjects as a single interconnected unit.

A DYNAMIC LEARNING ENVIRONMENT

Lines of desks and chairs are common in traditional classrooms. Students sit in them and quietly listen to the content delivered to them by the teacher. They may speak only when the teacher permits it. Students organize the class in many ways in a holistic classroom, depending on what they study. For group talks, they may sit in groups of three or four. They might be working at tables with scientific experiments or projects. As learners share their thoughts and findings, there is a lot of noise. They are captivated by the activities.

DEVELOPING SELF-BELIEF

Holistic educators feel it is their responsibility to assist learners in surviving in real-life situations. The first step is to create self-confidence. In conventional classrooms, failure is a common idea. When the goal of a session is to pass an exam, itit may deter the student from learning. Endurance and persistence are taught in holistic schools to assist students overcome problems. They understand that each kid learns uniquely and at a unique pace. It is

critical to appreciate their diversity. Students get an appreciation for themselves and their skills. They learn productive methods to form family and community relationships and encounter life's challenges. Consequently, the student gains confidence, allowing them to continue learning and improving intellectually and emotionally.

TRUE LEARNING, NOT MEMORIZATION OF FACTS

The standard classroom of today promotes exams and rote learning. Teachers in typical settings stick to the fact that kids will repeat an exam. Holistic schools teach kids qualities that they will need in reality, such as participation and teamwork. Lessons are designed to stimulate critical thinking by focusing on themes in interesting ways. Students participate in cross-disciplinary learning, which motivates them to study more. They might learn about science by creating a documentary series on a famous scientist. They might use their knowledge of geometry, history, and art by creating a scaled replica of a renowned structure or building. Due to this process, they may be motivated to become surgeons, engineers, or even historians.

EDUCATOR'S INVOLVEMENT IN HOLISTIC EDUCATION

The teacher is viewed as a figure of immense influence in the conventional school system, controlling every class teaching element. In holistic education, the educator is considered a mentor, friend, mediator, or associate with extensive expertise.

Holistic education strives to foster direct and truthful communication among individuals while respecting and appreciating individual diversity. Competition is being replaced by collaboration, and hence, many schools in this model do not award marks or grades. Teachers attempt to teach the sense of reward by encouraging students to help one another instead of competing for a rank in the class.

THE ROLE OF THE TEACHER IN HOLISTIC EDUCATION

In the traditional education system, the teacher is seen as a person of tremendous authority who controls every aspect of education in the classroom. Whereas in the case of holistic education the teacher is perceived as a mentor, a friend, a facilitator or as a companion with considerable experience. This helps students get rid of fear and creates a lot of openness when dealing with teachers.

Holistic education tries to promote open and honest communication between people and teaches to respect and appreciate individual differences. Competition is replaced by cooperation which is the reason why most schools under the system do not choose to give grades or rewards. Students start developing a cooperative mind set from a young age that they carry on to their professional lives as an adult. Teachers try to promote the concept of reward by helping one another rather than being at the top of the class. This helps in fostering a much more positive atmosphere at school.

BENEFITS OF HOLISTIC EDUCATION

Holistic education is based on a learning philosophy that brings a number of benefits to students, teachers, schools, and communities. Students are empowered to improve their educational outcomes and gain the life skills necessary to take on a successful professional career.

Holistic education is built on an instructional concept that helps students, educators, schools, and society in various ways. Students are given the tools to better their academic performance and develop the life skills required for a fruitful career path.

Improved Academic Achievement: Holistic education can improve the academic achievements of all children, regardless of background and circumstances, by catering to individual learning

styles and providing a supportive learning environment. Children's brain capacities are increased when they feel physically and emotionally safe and connected to others, according to the Learning Policy Institute.

Enhanced Mental and Emotional Well-Being: In a supportive environment, where social and emotional learning is emphasized along with academics, students have a better chance of emerging with self-awareness, confidence, and a sense of social responsibility.

Increased Problem-Solving Ability: Students who are tasked with solving real-world problems that exist in their communities emerge with strong critical-thinking skills. These hands-on projects give students skills that will apply to their adult careers, such as how to gather, analyze, and report data and how to collaborate with others.

Reduced Impact of Inequities: By emphasizing integrated learning concepts, the whole-child approach to education has been shown to reduce the psychological impact of issues such as violence, abuse, or poverty on academic achievement, according to the Learning Policy Institute.

NEP AND HOLISTIC EDUCATION

The dynamic and inclusive NEP outlines a refreshing approach to education in which knowledge and holistic development are given primary importance. In his book, Exam Warrior, PM Modi writes about innovative methods for knowledge and all-around development that are emphasised through his mantras. This is a must-read for India's young. Instead of stressing about the results of the exam, focus instead on working hard and the results will automatically be in your favour.

The NEP focuses on developing multidisciplinary education as it is known to build vibrant communities of scholars,

thinkers, inventors and scientists, by enabling students to become well-rounded individuals, who are able to think holistically for their life and the world. NEP lays much emphasis on transformation of higher education institutions into large multidisciplinary colleges, universities and higher education institution (HEI) clusters, as India generally has domain specific stand-alone colleges and universities. The quintessence of university system in NEP 2020 is aimed to remove damaging silos among disciplines.

CONCLUSION

We have seen a shift in the field of education throughout the years. Some argue that this shift occurs due to our recognition that the existing educational system is overly robotic and cannot meaningfully affect a child's entire development. Many schools are altering their teaching methods to accommodate some holistic learning. This is a positive indicator that can have a long-term influence on education.

References

Holistic Education: The Future Of Learning. Retrieved from https://varthana.com/school/holistic-education-the-future-of-learning/
What is Holistic Learning & How Can it Benefit Your Child? |Lancers Army School. Retrieved
From https://lancersarmyschools.com/what-is-holistic-learning-and-how-can-it-benefit-your-child/
What Is Meant By Holistic Education?-Education Portal for Students in India. Retrieved from https://www.saradaschool.in/for-students/what-is-meant-by-holistic-education.html

Holistic Education: An Enduring Change for a Better Tomorrow towards Sustainable Development

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Abstract

"Education is the most powerful weapon we can use to change the world"- Nelson Mandela.

The harsh reality is that the traditional education that is prevalent in India is in great demand and in great need of massive change or overhaul. In today's education the importance of STEAM has gained popularity as there is a huge gap between the academic and industry demands. Thus, to fill in the gap students should be prepared to meet the most challenging and an ever changing world through their learning. Early exposure to this education will help and support students overall academic growth and to develop critical thinking and reasoning skill with innovative ideas, solutions and for career opportunities. An integrated and transdisciplinary focus on inquiry-based STEAM education, could serve to enhance sustainable development and build capacity for future generations. Thus, it is the holistic approach which is an interlink between all parts of life and need for equal consideration and development. The need of the hour is to create a holistic education system that can combine education and technology with tradition and innovation for which Restructuring System is necessary. This paper aims to explore the roles of a Holistic Approach and Multidisciplinary education for STEAM Education.

Keywords: Holistic Approach, Restructuring System, Multidisciplinary Learning, Sustainable Development, Career Opportunity, Value-added Education System

INTRODUCTION

Men of genius are admired, men of wealth are envied, men of power are feared; but only men of character are trusted. – Alfred Adler

To mould a student's destiny, it is crucial to impart knowledge about values. It not only has a long-lasting impact on the student's conduct and attitude, but it also alters the student's general view of how he or she will act in a particular circumstance. Because of value education, the student gains cooperation, accountability, and leadership abilities. He or she becomes more focused and attentive in class with the aid of value education. Such students exhibit a high level of maturity and comprehension. They take their responsibilities, obligations, and common sense far more seriously. They become more optimistic and constantly see the good side of things.

The various need towards the enhancement of education system needs a pragmatic integration in our curriculum that could accentuates not only technological capable but an ethical usage of latest technologies in our day to day life. In order to develop such a step towards innovation we need to identify the challenges of the educational system of India. STEAM education is the medium through which students are empowered to be curious learners who seek creative solutions to questions they can't just search for online, leading students to the development of the soft and hard skills necessary to succeed in college and in their careers. It's become so predominant that there is even now a yearly National STEAM Day which is celebrated on 8th November to encourage students to get curious about science, math, and art activities.

Nowadays this type of learning has gained the popularity among the institutions and students.

STEAM Education is not only an approach to teaching and learning that which combines science, technology, engineering, the arts, and math but to guide student inquiry, discussion, and problem-solving. Education experts say STEAM education is about more than developing practical skills alone. The STEAM

framework brings the five disciplines together to create an inclusive learning environment that encourages all students to participate and contribute. This holistic approach encourages students to exercise both the left and right sides of their brains simultaneously.

STEAM AND ITS BENEFITS

STEAM education helps students develop the capacity to towards understanding and gaining

- Take thoughtful risks
- Engage in meaningful learning activities
- Become resilient problem solvers
- Embrace and appreciate collaboration
- Work through the creative process

STEAM AND STEM

Although similar, STEAM and STEM education are not interchangeable terms. While STEAM uses the same concepts as STEM, STEAM also incorporates the arts and sometimes the humanities. The study of arts must be integrated into the lesson so students can see how each relevant discipline connects and works together. This allows students to develop and use skills naturally embedded in the arts and humanities, including empathy, creativity, and communication.

In fact, research shows that student who participate in creative programs display

- Advanced thinking
- The know-how to cope with stress
- Enhanced self-awareness
- Social skills like teamwork, communication, confidence, autonomy, and motivation
- The ability to build connections with their community

This education is essentially just a progression towards students to know and understand the importance of art instruction, what led to this new movement in education and how educators can embrace this framework to benefit their students. With people changing jobs and even jumping careers more frequently than in past generations, a truly well-rounded educational background is essential. Whether students pursue college or enter the workforce right away upon graduation, they will need the baseline skills to adapt to whatever their academic or professional careers require of them. "Incorporating the A in STEM education to make it STEAM—art—brings in personal expression, empathy, meaning-making and the purpose of what you're learning," explains Dr Kristin Cook, associate dean of Bellarmine's Ansley Frazier Thornton School of Education and long-time science educator. "It's the humanizing piece of transdisciplinary and interdisciplinary instruction."

The acronym STEAM refers to a growing educational approach that shows how the traditional academic fields of science, technology, engineering, arts, and mathematics (or "silos") may be organised into a framework for constructing interdisciplinary curriculum. Reviews of general and discipline-specific epistemologies are included, along with each discipline's standards as they apply to integrated or holistic education. In order to discover the commonalities of education in regard to pedagogy and language, it is currently being researched to investigate these educational linkages to one another. The requirement for the disciplines to collaborate with one another in a structure that can be flexible to the many variants of discipline combinations that make up the various directions that people in need of the creation of commons.

NEED OF TRANSFORMATION

It is essential that we need to incorporate Indian knowledge and tradition in the field of education and not just thriving to achieve the literacy target and intellectual enlightenment. Institutions with multidisciplinary approach offer learning for today's education

system, as it is the kind of education that required is for the 21st century. Education alone will not lead to a sustainable future, therefore, learning about sustainable development (SD) is necessary. Target 4.7 in the 2030 Agenda for SD, emphasizes the importance of transformative education- that promotes global citizenship, sustainable development, human rights, gender equality, peace, and cultural diversity.

To enable a more sustainable and just society for all, education for sustainable development (ESD) promotes changes in knowledge, skills, values, and attitudes. It aspires to use a balanced and integrated approach to sustainable development to empower and equip present and future generations to meet their requirements. The information, skills, and attitudes necessary to build a more just and sustainable world are fostered by high-quality education. Quality education is defined as "one that focuses on the child's overall development—social, emotional, mental, physical, and cognitive, regardless of gender, race, ethnicity, socioeconomic status, or geographic location," by Education International and the Association for Supervision and Curriculum Development.

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Education for Sustainable Development is defined as an "interdisciplinary learning methodology covering the integrated social, economic, and environmental aspects of formal and informal curriculum". The literature tends to agree on both the relevance of ESD in early childhood and the need to promote student-cantered approaches to start the development of abilities, attitudes, and values for sustainable development from an earlier age, which goes against the idea that young minds are not ready to be taught about important societal issues. Motivation, understanding and knowledge, reflection and evaluation, values and moral choices, and action are among the objectives of education for sustainable development (ESD) for children as well as pedagogical staff and management in early education.

It is a holistic approach and is sometimes represented as three overlapping circles: ecological, social, and economic to show how all aspects of life interact and how each must be taken into account equally in order to achieve enduring prosperity. But due to our inclinations, we typically take a unidirectional approach to sustainability. One must think holistically about relationships, connectedness, and context in order to understand the fundamental principles of ecology and to recognise the complex interconnection and frequently unpredictable dynamics of ecological, social, and economic systems. Building a more resilient world requires a shift in emphasis from analytical thinking (parts) to contextual thinking (total). It is viewed as a crucial skill in education since it enables students to sort through and deal with the complexity of Earthly life.

CONCLUSION

We are currently witnessing a fall and elimination of morality and moral principles from our youth in this age of materialistic longings. Success has risen to the top of the priority list. Individuals will do anything to succeed. How doesn't matter; what counts is your position in the social scale. Our materialistic, self-centred way of life forces us to behave in questionable and unscrupulous ways. With time, we also have a tendency to forget the fundamental principles required for a good character. Living a happy and fulfilling life requires having a powerful and charismatic persona.

The first education policy of the twenty-first century, National Education Policy 2020, intends to make education comprehensive, inclusive, multidisciplinary, learner-centric, inquiry-driven, and experiential while also aligning the educational system with the SDGs. Hopefully, it will put humanity back on the proper course for progress and ensure the future of the next generation. Yet, if this programme is successfully implemented, it will not only broaden India's international image but also raise the quality of the country's educational system to a level with the best in the world.

References

1 Pahnke, J., O'Donnell, C. & Bascopé, M. (2019). *Using Science to Do Social Good: STEM Education for Sustainable Development. Position paper developed in preparation for the second "International Dialogue on STEM Education" (IDoS) in Berlin, December 5–6, 2019.*

2 Dillon, J., Stevenson, R. B., Wals, A. E. J. (2016). *Moving from citizen to civic science. Conservation Biology, 30(3), 450-455.*

3 *https://en.unesco.org/themes/education-sustainable-development*

4 Bascopé, M., Perasso, P., Reiss, K. (2019) *Systematic Review of Education for Sustainable Development at an Early Stage: Cornerstones and Pedagogical Approaches for Teacher Professional Development, Sustainability, 11 (3), 719 Available: https://www.mdpi.com/2071-1050/11/3/719/htm#*

5 Kauertz, A., Molitor, H., Saffran, A., Schubert, S., Singer-Brodowski, M., Ulber, D. & Verch, J. (2019). *Zieldimensionen einer Bildung für Nachhaltige Entwicklung (BNE) für Kinder, pädagogische Fachkräfte und Leitungskräfte. In Stiftung Haus der kleinen Forscher (Ed.), F*

Impact of Social Media in Today's World

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Abstract

Social media is a vital part of human life. It is a habit of all of us to use social media during leisure. But, we must understand that too much of its usage can lead to many problems. It is important to know that whatever is good for us can cause a negative input on the society. Any information on social media has to be verified. We can use the full potential of social media if we it is employed gaining with completed knowledge about it.

Keywords: Social Media, Apps, Cyber security, Cyber crimes

INTRODUCTION

The medium plays a very important role in providing everyday news. It discusses about the events taking place in the country and the world. On average an individual spends around two and a half hours on social media per day. There is one word that is often used to collectively refer the radio, TV, newspaper, internet, face book, instagram, and several form of communication; this word is "Media", the social media that the population of around 489 billion had started using since 2023.

WHAT IS SOCIAL MEDIA

Social media is a web-based platform that allows people to communicate and share their ideas. Earlier days people use to listen to radio and gather information about the day-to-day activities which of our country. Later the focus turned towards

television of late people get information through social media like Youtube, Facebook, Twitter etc.

MEDIA AND TECHNOLOGY

There are many more technologies arising through social media. It would probably be difficult for anyone to imagine once life without media. People take Photograph and Videos themselves, and post them their pages. Many bloggers have also earn well. People tend to look into it and share their ideas and thoughts in the form of text images and videos.

ADVANTAGES OF SOCIAL MEDIA

Social media platform can be useful in many ways. People get popular in no time, their business. Many people love social media as they provide information quickly and also entertains them.

Informative: Social media has a lot of information and resources. It is social media through which many people in rural areas get information.

Publicity: People because famous over night through social media. It only takes a blink to make anything go viral and create a storm in social media.

Business promotion: Social media is generally recommended by many experts for business promotions. It is fast and easy to use which leads to connect people very quickly to any business.

Entertainment: people across the globe use social media to watch videos and share photos. Instagram has recently added a feature, connectivity that connects people all over the world.

DISADVANTAGES OF SOCIAL MEDIA

These cons are sometimes bad leading to a disaster with a result of **banning** some of the media.

Social media is also used as a weapon to spread **fake news** and lead to many adverse impacts.

Cybercrimes in internet is frequent that leads to the frustration of many in social media assuming security of their deposits.

Cyber security People share their personal information However, it leads to damage of their property and data. Cyber security also deals with penetration of harmful software without the consent of user.

Health - people who spend their maximum time on social media can have adverse effects on their health.

NINE BEST SOCIAL MEDIA APPS IN INDIA (2023)

Here are the apps best social media apps available in India right now. Social media had sort of explosion since the advent of Facebook in 2004. Then came Facebook, followed by Instagram, LinkedIn, Twitter, Snapchat, and more. Each platform has its advantages and disadvantages. Brands jumped on the social media bandwagon quite quickly. While some brands use Face book for a lot of inspirational content, for some, Instagram became their primary social network to communicate with their audience. Since every individual or brand has a preferred social media channel to communicate, it is good to know each of them in detail.

Best social media apps in India

APP NAME	ACTIVE USERS PER DAY
Facebook	**2.934 billion**
Instagram	**230.25 million**
Snapchat	**332 million**
LinkedIn	**830 million**
Twitter	**237.8 million**
WhatsApp	**487 million**
Telegram	**214 million**
Moj	**160 million**
ShareChat	**1.17 billion**

ACTIVE USERS PER DAY (Million)

- Face book
- Instagram
- Snapchat
- LinkedIn
- Twitter
- WhatsApp
- Telegram
- Moj
- Sharechat
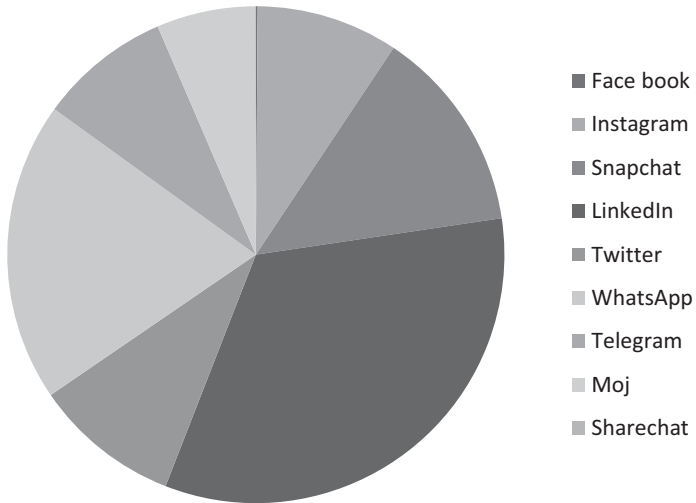
INTERESTING FACTS ABOUT SOCIAL MEDIA

PROS

Using social media, people can have friends with similar interests in multiple cities, states, and countries. Closer to home, social media can help people find each other in a busy world, from mom groups and soccer leagues to book clubs and historical reenactment groups.

This was critical during the [COVID-19] pandemic when schools and sports were off limits. Social media can also be a way for young people to connect with others with shared interests and identities, which can be a lifeline for youth with marginalized or stigmatized identities such as LBGTQ+ youth or racial and religious minority youth. Social media users tend to report that they have access to more social support and have lower psychological distress.

Social media can also promote school and work communities. The platforms allow students and parents to connect to each other as well as teachers and other school staff outside of school hours to establish relationships as well as connect with outside community members and experts for internships, interviews, and other opportunities. For work, employees can connect with remote coworkers and other companies for what used to be "water cooler chats," as well as for global project collaboration, advice, and career networking.

Social media encourages civic and political responsibility

 "Many of today's youth take to digital spaces to develop their civic identities and express political stances in creative ways, claiming agency that may not be afforded to them in traditional civic spaces. The key difference between civic engagement by youth today and older, more traditional forms of action is the availability of digital technology, which provides a low-barrier-to-

entry canvas for young people to create content that is potentially vastly scalable," according to a 2020 UNICEF report.

Social media creates a more equitable point of entry and space for continued civic and political activity than traditional spaces. This easy access "contributes to a sense of socio-political empowerment, which, in turn, makes young people more likely to participate in offline political activities, including voting. Social media allows for political activists to fundraise, partner with influencers to boost the message, promote events including marches, share stories, and spread awareness of their chosen issues

CONS

Kids as young as ten face cyber bullying, specifically racist attacks, globally. And 41% of American adults reported being harassed online, ranging from offensive name-calling (31%) to stalking (11%). Adults were most likely to be targeted for political views (50%), their gender (33%), race or ethnicity (29%), religion (19%), and sexual orientation (16%). 75% of adults who have been cyber bullied indicated the harassment happened on social media.

Cyber bullying victims of any age are subject to mental, emotional, and physical harms, including upset, embarrassment, anxiety, and shame, and depression, loss of sleep, headaches, and stomachaches. Victims may be less productive or skip school and work. Some may turn to drugs and alcohol to cope with the distress.

Social media platforms exploit and manipulate the impulse for like-minded people to gather by programming algorithms to show more information of the same vein and by not controlling the bots and trolls that spread misinformation.

According to a 2022 study, "disaster, health, and politics emerged as the three domains where misinformation on social media can cause severe harm, often leading to casualties or even irreversible effects. For example, misinformation in these areas has higher potential to exacerbate the existing crisis in society.

Director-General, Tedros Adhanom Ghebreyesus, noted about the COVID-19 pandemic: "We are not just fighting an epidemic; we are fighting an infodemic," referring to the misinformation populating social media feeds about the virus. The same might be said about any number of topics populating social media feed.

Number of social network users in India from 2015 to 2018 with a forecast until 2023 (in millions)

Years	No. of Users in Millions
2015	142.23
2016	168.1
2017	296.3
2018	326.1
2019	351.4
2020	376.1
2021	400.3
2022	422.7
2023	447.9

(Courtesy: www.statistia.com)

CONCLUSION

Social media sites can be a valuable, powerful tool for professional development, sharing of resources, and social interaction.

Reference

1. https://www.statista.com/statistics/278407/number-of-social-network-users-in-india/
2. https://socialnetworking.procon.org/
3. 9 Best apps -Snigdha Biswas - Published On September 2, 2022 | Last Updated: February 24, 2023.

Language, Culture and Values in Higher Education in India

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Abstract

Education in modern India includes primary education, secondary education, senior secondary education and higher education. Higher education in India starts after passing the higher secondary education, and post-graduation courses are generally of two to three years of duration. In the past, language was often given importance to Indigenous and immigrant peoples as a way to eradicate perceived "undesirable" cultural practices and weakens the bonds of cultural or ethnic identity and later this language differences connected to form so called "re-education". There is no single, nationwide language of instruction in the Indian school system; because of the country's linguistic diversity .Values are virtues, ideals and qualities on which actions and beliefs are based. Values are guiding principles that shape our world outlook, attitudes and conduct. Value based education is important to help everyone in improving the value system that he/she holds and put them to use. The values make the personality of the person and decide the growth of the individual, family, society, nation and the humanity. Education brings cultural changes which may result in many transitions and alterations in society in many forms. This may be observed in every aspects of human culture like variations in norms of values and thinking modes, changes in material

culture, ideas, family relations, political culture, patterns of administration at the local, state, regional and national level, involvement in social activities, change in abilities andbehavioural traits of personnel; in short in every aspects of human activity. Culture enables a person to appreciate good ideas and abilities. The aim of this paper is to focuses on how language which makes a cultural transmission through education values in India.

INTRODUCTION

Higher Education is a very important sector for the growth and development of human resource which can take a responsibility for social, economic and scientific development of the country. While, higher education gives India an edge in the world economy as evident from the availability of the skilled manpower, and research scholars working abroad, unemployment, illiteracy and relative poverty continue to be the major deterrents to realize her potential in human resources.

LANGUAGE

Using the language the child is most comfortable with in the early school years improves attendance and learning outcomes, and the ability to learn new languages. Studies from around the world also show that it increases classroom participation, reduces the number of drop-outs and grade repetition. It also offers them an opportunity to get introduced to social and cultural identities. Still, half of all children in low and middle-income countries are not taught in a language they speak. Parents prefer to send their children to 'English-medium' schools regardless of the quality of education they offer because of the perception that mastery of the English language ensures success in later life. In India, teaching and learning have largely been in foreign languages whereas

Indian languages have never got the much deserving importance in the field. But experts argue that an English education is not always the best. One can learn to read and write best in the language that you know. The National Education Policy, 2020 has emphasized the use of regional languages for instruction at the primary and higher education levels. The language study promotes linguistic diversity through the strength, usage and vibrancy of all Indian languages. The language study in their own language make students to understand the subject and make less stress and became more sensitive towards the problem faced by the common people in society. While education has always bridged the gap between the haves and haves-not's, the lack of programs in regional languages, especially in higher education, which has made it difficult for many to continue with their education. Hence including these regional languages in Higher education can be a move forward in filling gaps. Thus language in Higher Education helps to prevent language-based discrimination and improves the quality of students, and as a result increases in Gross Enrolment Ration in higher education.

VALUES

Curriculum Framework (2005) Reflects "Education for peace seeks to nurture ethical development, inculcating values, attitudes and skills required for living in harmony with oneself, with others including nature. In today's multi-cultural and multi-racial society, with its changing social norms and expectations, it can be difficult for a young person to know what is right. So, it is necessary to give importance to human values in the present era of globalization .Value based education emphasized from school to university level of education and to be a moral standard of human behaviour. Value based education is essentially `Man Making' and `Character Building'. It is the process by which people transmit values to others. A value-based educational system is an integral part of human intellectual development. Values add quality to life. Human values are closely integrated with human life. They are

intertwined with our day to day chores. Value- based education is essential to bring about the desired transformation – individual transformation towards the development of human consciousness and societal transformation towards an un-fragmented, humane society. The home is the first place to learn and be inculcated with values. The school is the second setting in which you can nurture and celebrate values. The value-based education is designed on the basis of universal human values, i.e. education for the well-being of all and it would result into value -based living in the family, and ultimately in the human society.

CULTURE

Education has a major role to play in an individual's life; it helps an individual to understand the world and the environment to live his life adequately, it makes the individual aware of different values, norms, customs and traditions which are essential for his existence and development and it provides to the individual all kinds of knowledge, information and materials, which he needs to learn in order to progress. By culture we mean the system of norms and standards that a society develops over the course of many generations and which profoundly affects the conduct of people living in that society. Indian culture believes in harmony, allowing students to gain a better understanding of the people around them. A cultured person is neither too self-confident nor too inflexible and aggressive. He does not manifest extremes of passions or violence of feelings or extravagance of language; in other words, he is a cultured person and education plays a crucial role in the creation of such kind of individuals. Culture shapes individual's world views and the way communities address the changes and challenges of their societies whereas education serves a critical vehicle for transmitting these value systems as well as for learning from the humanity's diversity of world views and for inspiring future creativity and innovation. Education changes the perception of individual towards different forms of community. Every culture can be considered as a language and this language is

a structure of words ad symbols used to communicate with each other community. In education the culture can be influenced through the way that teachers interact with students. Culture helps learners to develop a great sense of identity that allows them to make use of the acquired skills effectively. Education which influences culture by providing people with copious amount of knowledge, which ultimately alters the way that they perceive the world and their place in it.

CONCLUSION

For the sustainable human development as well as for the social growth, there is a need of value based education. Language being the most important medium of communication and education. Values should be the top priority in a child's education. Recognizing that values are key to character building. Strong values and socio-emotional competencies will help a child succeed in any field. Education brings cultural changes which may result in many transitions and alterations in the society in many forms. This may be observed in every aspects human culture like variations in norms of values and thinking modes, changes in material culture, ideas, family relations, political culture, patterns of administration at the local, state, regional and national level, involvement in social activities, change in abilities and behavioural traits of personnel; in short in every aspects of human activity. Culture enables a person to appreciate good ideas and abilities.

References

1. *Radhika Gorur & Fazal Rizvi, Research and Innovation in Indian Higher Education,2015, 978-94-017-9570-8*
2. *Venkataiah(1998). Value Education. New Delhi: APH Publishing Corporation*
3. *http://www.encyclopedia.com/*
4. *http://www.wikipedia.org/*

Performance of Khadi and Village Industries in North-East India

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Abstract

The Khadi and Village industries form an integral part of India's rural economy even from the pre-independence period. Through these industries, it is possible to achieve sustainable development and growth of rural economic activities. Through proper planning, promotion and organisation, these village and traditional industries can act as a substantial source of income and employment for the rural people. The North-East India comprise of eight states including the States of Assam and Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. In North East Indian states, the total production of Khadi industries and Village industries in the year 2020-21 was 706.82 lakhs and 34535.96 lakhs respectively. Therefore, the present paper is an attempt to explore the performance of Village and Khadi industries in North-Eastern states of India.

Keywords: Khadi and Village industries, North-East India, Performance, Employment

INTRODUCTION

Over the years, the Micro, Small, and Medium Enterprises (MSME) have become a very dynamic area of the Indian economy. It encourages entrepreneurship and creates employment opportunities at a relatively cheap capital cost. It is also the second largest contributor to the Socio-economic development of India after agriculture. The Khadi and Village industries form an integral part in development of rural economic base. Khadi refers to "any

cloth woven on handlooms in India from cotton, silk or woollen yarn hand spun in India or from a mixture of any two or all of such yarns" (Patil, 2021). Khadi, in India, gained recognition as a symbol of independence and freedom. On the other hand, the differentiation between small-scale industry and village industry was made during the first Five Year Plan. However, there are some challenges in the village industries regarding strategy, facilities, insufficient preparation, incomplete credit service, higher sickness incidence etc. (Tak, 2020). Village Industries comprise different sectors such as bamboo, Cane and Reed Industry, Organic Dyeing Industry, medicinal Plant Collection and Processing Industry, Brass Metal and other Metal Crafts Industry, Hand Made Paper and Paper Products Industry etc. The All India production and sales of Khadi industry in 2021-22 was 1809.86 Crores and 3030 Crores respectively. It provided employment to around 4.97 lakhs artisans in 2021-22. The All India production and sales of Village industry in 2021-22 was 60694.43 Crores and 81375.16 Crores respectively. It provided employment to around 159.1 lakhs artisans in 2021-22.

OBJECTIVES

The basic objectives of the present paper are:

1. To study about the performance of Khadi and Village industries in terms of production and sales in North-East India.
2. To analyse the generation of employment opportunities by Khadi and Village industries in North-Eastern states of India.

DATA AND METHODOLOGY

Primarily the study is using secondary data and information. The data have been collected from various issues of Annual Report of Ministry of Micro, Small and Medium Enterprises along with a number of journal articles.

The method of data collection is purely descriptive and analytical. The present paper is using the absolute number of

productions, sales and employment of Khadi and village industries (KVIC) along with diagrams and growth rates to analyse its performance.

ANALYSIS

The Khadi and Village Industries Commission (KVIC), which was established in accordance with the Khadi and Village Industries Commission Act, 1956 (61 of 1956), is a Statutory Organization operating under the Ministry of MSME.

Its main objective is fostering the growth of Khadi and Village Industries in order to create jobs in rural areas. It publishes data on production, sales and employment opportunities created by the Khadi and Village industry.

In the present paper, the entire analysis is divided into two sections. The first section deals with the Performance of Khadi and village industries in terms of production and sales in North-East India. The second section is related to the potential of these industries in generation of employment opportunities in North-Eastern states of India.

a. **The Performance of Khadi and Village Industries in terms of production and sales in North-East India**

In entire North-Eastern region, the growth of production of KVIC has seen some remarkable changes over the years. In 2012-13, the production of KVIC was 149277.49 lakh rupees while it rose to 162373.93 lakh in 2013-14.

Table 1: Trend of production and sales of KVIC
North-Eastern region (Up to 31st December) in Rs. (Lakh)

Year	Production	Sales
2012-13	149277.49	190289.07
2013-14	162373.93	213303.79

2014-15	171299.03	227225.5
2015-16(up to 31st January, 2016)	137039.19	181780.37
2018-19	348149.17	495479,81
2019-20	224860.29	28000.25
2020-21	35242.78	52194.12
2021-22	358107.13	526075.86

the data for 2016-17 and 2017-18 are not available in numerical value.
Source: Various issues, Annual Report of MSME

It depicts a growth of around 8.77% between 2012-13 and 2013-14. Again, in 2014-15, the production of KVIC has seen a growth of around 5.5%. In 2020-21, the growth of KVIC production was negative and stood at –84.32% which was mainly due to lockdown and associated reasons.

From the Figures related to sales of KVIC products, it is visible that in entire North-Eastern region, during 2012-13, the sale of KVIC was 190289.07 lakh rupees. It rose to 213303.79 lakh rupees in 2013-14, showing a growth of around 12%. Again, in 2014-15 sales of KVIC has seen a growth of around 6.52%. However, it was seen that during 2020-21, the growth of KVIC sales showed prospect despite less production. The growth of KVIC sales in 2020-21 was 86% over previous year.

Table 2: State wise production of KVIC industry
in North-Eastern region in Rs. (Lakh)

State	2012-13	2021-22
Arunachal Pradesh	5188.60	10211.58
Assam	64350.74	126193.59
Manipur	11152.66	53006.74
Meghalaya	13194.08	24069.06

Mizoram	25187.43	41911.41
Nagaland	13761.33	56058.88
Sikkim	4534.83	6502.54
Tripura	11907.82	41153.33

Source: Various issues, Annual Report of MSME

The state wise production of KVIC industry North-Eastern region in Rs. (Lakh) (up to 31st March, 2022) is depicted in Table 2. It can be seen from the table that all the states have showed positive rate of growth in production of KVIC over the years. The growth of production is highest in Manipur while it is lowest in Sikkim among these states.

Table 3: State wise Sales of KVIC industry
in North-Eastern region in Rs. (Lakh)

State	2012-13	2021-22
Arunachal Pradesh	6833.51	15769.44
Assam	81234.51	184928.11
Manipur	14742.53	76696. 85
Meghalaya	16161.12	34109.61
Mizoram	34557.37	66250.04
Nagaland	16656.67	77801.53
Sikkim	5600.29	9723.95
Tripura	14503.07	60796.33

Source: Various issues, Annual Report of Ministry of MSME

The state wise sales of KVIC industry in North-Eastern region is shown in Table-3. It is visible from the table that also in terms of sales, all the states have showed positive rate of growth over the years. The growth of sales is highest in Manipur while it is lowest in Sikkim among these states.

b. **The generation of employment opportunities by Khadi and Village industries in North-Eastern states of India**

The Khadi and Village Industries (KVI) provide employment to a large number of artisans in rural areas of India. Likewise, in North-Eastern region, the KVI is generating employment opportunities for rural artisans.
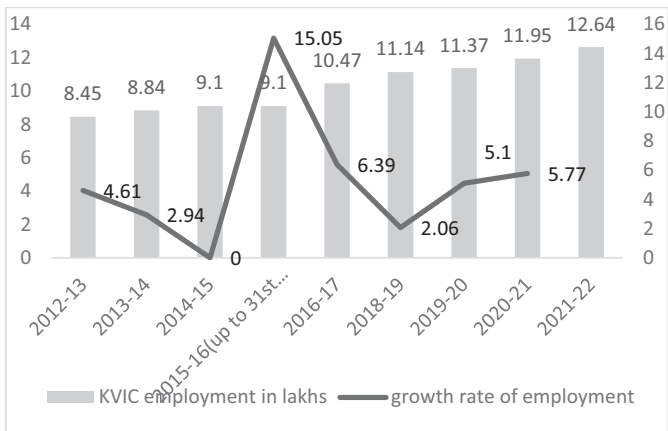

Figure 1 – Cumulative employment provided by KVIC in North-East India (up to 31st December) in Lakhs
(Source: Various issues, Annual Report of Ministry of MSME)

Figure 1 depicts the Cumulative employment provided by KVIC in North-East India and growth of these employments. It can be seen from the figure that the KVIC provided employment to 8.45 lakh artisans in the year 2012-13 which rose to 12.64 in 2021-22. The growth of employment has been fluctuating over the years.

From Figure 2, it can be seen that all the states have seen progress in growth of employment opportunities between 2012-13 and 2021-22. However, the growth cannot be seen as remarkable or significant.
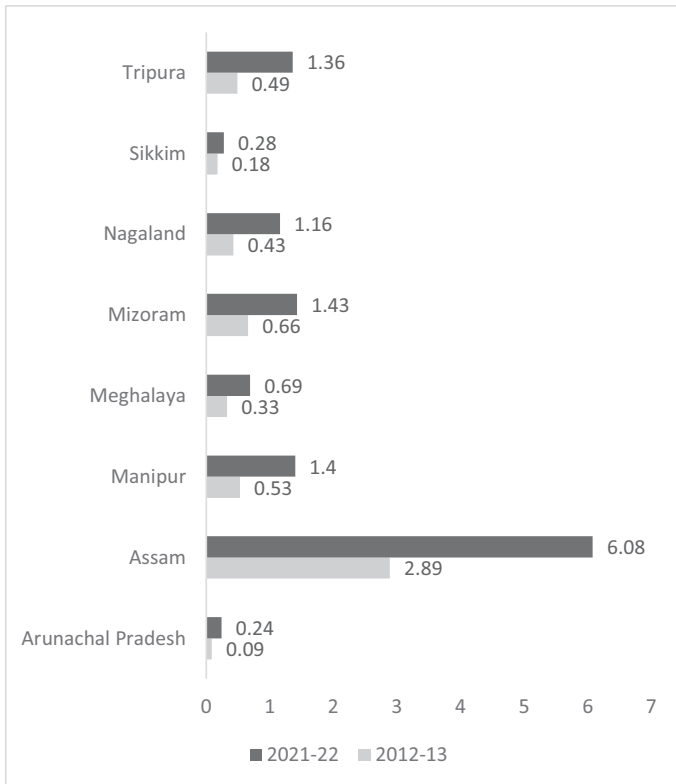
Figure 2 – State wise employment in KVIC (Lakhs)
(Source: Various issues, Annual Report of MSME)

The KVIC has made progress in terms of production and sales while in terms of generating employment opportunities; it is not providing satisfactory results. There is more room for the Khadi and Village industries (KVIC) to work for the rural labour force by provision of timely and adequate work opportunities.

According to Mandal (2007), in North-East India, the Khadi and village industries are not commercially viable due to some challenges such as lack of working capital, lack of power, lack of technical know-how, shortage of organisational strength

etc. Because of these reasons, the KVI sector is unable to utilise its full potential in North-East India.

CONCLUSION

The present paper is an attempt to analyse the performance of Khadi and Village Industries in North-East India utilising secondary sources of data and information. However, it has some limitations as it is only using secondary data but primary data can provide better view in this regard. From the study, it is observed that the KVIC production and sales has shown some remarkable progress as well as fluctuations while the employment generation by this industry is far from what can be achieved. Therefore, in future, actions should be aimed at employment generation as well as overall growth of Khadi and Village industries to raise income and living standard of rural people.

References

1. *Mandal, Ram Krishna. (2007). Khadi and Village Industries in North East India with Special Reference to Arunachal Pradesh: Retrospect and Prospect. Journal of Global Economy. 3. 88-99. 10.1956/jge.v3i2.165.*
2. *Ministry of Micro, Small and Medium Enterprises(n.d.)Annual Report 2012-13,2015-16,2016-17,2018-19,2019-20,2020-21,2021-22 available at https://msme.gov.in/relatedlinks/annual-report-ministry-micro-small-and-medium-enterprises*
3. *Patil,S.G.(2021) A Study of Khadi and Village Industries Commission as a Mean of Rural Development, International Journal of Creative Research Thoughts (IJCRT) Volume 9, Issue 6.*
4. *Tak,B.(2020) KEY STRATEGY FOR THE DEVELOPMENT OF KHADI AND VILLAGE INDUSTRY IN INDIA, Inspira - Journal of Modern Management & Entrepreneurship (JMME), Volume 10, No. 04.*

STEM in Higher Education:
Applications, Objectives and Challenges

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Abstract

Interdisciplinary education is becoming increasingly necessary to address social issues through the comprehensive application of knowledge across the diverse fields of science, technology, and engineering, the arts, and mathematics, given the high degree of change in society brought about by developments in areas like AI and IoT. (STEAM). STEAM is an interdisciplinary teaching strategy that involves students in activities related to maths, science, technology, engineering, and the arts. It strives to foster students' potential for higher-order thinking, productive abilities, and innovation. Innovative methods that enhance STEAM education include problem-based learning, which focuses on addressing real-world issues; project-based learning via collaborative inquiry; and place-based learning, where students learn by doing. The whole educational process, from early childhood through higher education, is covered by STEAM education. A contemporary strategy intended to start a revolution in education is STEM education. It is very important in today's society since it helps students' study methodically and logically to prepare them for the future. Some of the most sought-after degrees for higher education include STEM disciplines. STEM, which stands for science, technology, engineering, and mathematics, is a major that is vital to the development, study, and advancement of not just individual professions but also the most important global

enterprises. The uses, difficulties, possibilities, and restrictions of STEM in higher education are covered in this article.

INTRODUCTION

Students are prepared for professions in these sectors via higher education's STEM (science, technology, engineering, and maths) curriculum. For creativity, economic development, and national security, STEM areas are crucial. Higher education schools provide several bachelors, masters, and doctorate degrees in science, technology, engineering, and maths. In addition to receiving extensive classroom instruction in the theory, practises, and procedures of their chosen area, students in these programmes also get practical experience via lab and research work [1]. Teaching students how to think critically, solve issues, and think analytically are the main goals of STEM education in higher education [2]. Students get the ability to tackle issues in the actual world and come up with innovative solutions by using scientific and mathematical concepts. Also, they gain the ability to communicate their results coherently, which is crucial for success in STEM fields [3]. Several organisations provide scholarships, research opportunities, and other funding options to assist STEM education in higher education. In order to provide students with professional prospects and first-hand experience, several schools have partnered with corporations, governmental organisations, and non-profits [4]. In recent years, diversity and inclusion have received increased attention in higher education's STEM programmes [5]. As underrepresented groups, women, and persons from low-income backgrounds are underrepresented in STEM professions, several organisations have launched initiatives and programmes to encourage them to participate. In general, STEM

education in higher education is crucial for educating the next generation of technicians, engineers, scientists, and mathematicians [6]. It equips students with the abilities, information, and practical experience necessary to excel in various disciplines and make significant contributions to society.

APPLICATIONS OF STEM IN HIGHER EDUCATION

STEM (Science, Technology, Engineering, and Mathematics) plays a crucial role in India's higher education sector [7]. Here are some applications of STEM in higher education in India depicted in Figure 1:
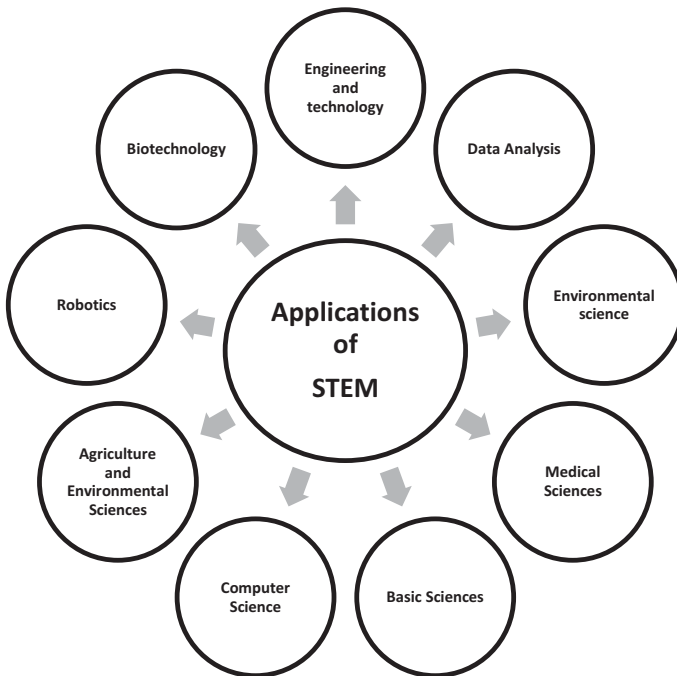
Figure 1: Applications of STEM

1. Engineering and technology: STEM is essential for developing the trained workforce required for these industries. India has a sizable engineering and technology industry. The Indian Institutes of Technology (IITs) are among the most esteemed technical institutions in the nation, providing degree programmes in a range of engineering and technology-related subjects.
2. Medical Sciences: STEM is also extensively used in medical education and research in India. Top medical institutes in India, such as the All India Institute of Medical Sciences (AIIMS), Armed Forces Medical College (AFMC), and Christian Medical College (CMC) rely on STEM to train the next generation of medical professionals.
3. Basic Sciences: Some of the world's top research institutes are situated in India, which has a long history of doing fundamental scientific research. STEM serves as the cornerstone for fundamental scientific investigations in biology, physics, chemistry, and mathematics.
4. Computer Science: India is also known for its thriving software and IT industry, and computer science is a popular field of study in higher education institutions nationwide. Top institutes such as the Indian Institutes of Technology (IITs), Indian Institutes of Information Technology (IIITs), and National Institute of Technology (NITs) offer degree programs in computer science and related fields.
5. Agriculture and Environmental Sciences: STEM is also used extensively in agriculture and environmental sciences. Higher education institutions such as the Indian Agricultural Research Institute (IARI) and the Indian Council of Agricultural Research (ICAR) use STEM to train students in various aspects of agricultural science, including crop, soil, and animal science. Similarly, the Indian Institute of Technology (IIT) Delhi and the Indian Institute of Science Education and Research (IISER) Bhopal use STEM to train students in environmental science.

6. Robotics: Robotics is a rapidly growing field that combines multiple STEM disciplines. In higher education, students can learn about robot design, construction, and programming through hands-on projects and competitions.
7. Data analysis: A key competency in many STEM disciplines is data analysis. Students may study statistical techniques, data visualisation, and machine learning in higher education, which are used to analyse and understand data in a variety of scenarios.
8. Environmental science: An interdisciplinary subject that examines both natural systems and how human activity affects the environment, environmental science is concerned with both. Via fieldwork, laboratory experiments, and data analysis, STEM students may learn about environmental science in higher education.
9. Biotechnology: The multidisciplinary study of biotechnology incorporates biology, chemistry, and engineering. Students in higher education may explore the creation of novel drugs, therapies, and technologies via laboratory work and research projects while learning about biotechnology.

STRATEGIES FOR IMPLEMENTING STEM

1. Research: The cornerstone of STEM areas is research [6]. In higher education, STEM students can work on individual or group research projects that advance their field's knowledge.
2. Laboratory work: STEM classes frequently require laboratory work, giving learners the chance to practise [6] conducting scientific experiments, analysing data, and coming up with solutions.
3. Computer simulations: To model and analyse complex systems, computer simulations are widely used in STEM fields. STEM students in higher education can use simulation software to investigate and comprehend challenging concepts.

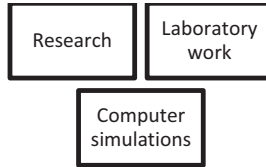The info graphic displays of these strategies are depicted in Figure 2.

Figure 2: Strategies for Implementing STEM in Higher Education

CHALLENGES AND OPPORTUNITIES OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS IN HIGHER EDUCATION

Although STEM (Science, Technology, Engineering, and Mathematics) programmes in higher education provide several benefits, they also pose a number of problems that must be overcome [7]. Instances of this are as follows:

CHALLENGES

1. Gender and diversity disparities: Women and minority groups are often underrepresented in STEM disciplines, and this disparity is especially seen in higher education [8]. Many reasons contribute to this, including a lack of role models, cultural prejudices, and structural hurdles.
2. Cost and access: For many students, the expense of higher education, especially in STEM subjects, may be a considerable obstacle [2]. Moreover, some kids may lack access to technology and other resources essential for STEM instruction.
3. Curriculum development: STEM subjects are continually expanding, and institutions may find it difficult to stay up with the newest innovations. As a consequence, developing curricula may be a difficult and time-consuming task.

4. Faculty recruitment and retention: Due to the strong demand for these specialists and competition from other sectors, recruiting and maintaining talented STEM faculty members may be difficult.

OPPORTUNITIES

1. Innovation and entrepreneurship: STEM fields are at the forefront of innovation, and higher education institutions can foster entrepreneurship and innovation by providing opportunities for students to develop new products and services [9].
2. Collaboration and partnership: STEM fields often require interdisciplinary collaboration and partnerships between academia, industry, and government [10]. Higher education institutions can facilitate these collaborations by establishing partnerships and networks with external organizations.
3. Diversity and inclusion: Addressing the gender and diversity gap in STEM fields is an opportunity for higher education institutions to promote diversity and inclusion [11]. This can be achieved through programs and initiatives encouraging underrepresented groups to pursue STEM education and careers.
4. Career readiness: STEM education in higher education can provide students with the skills and knowledge required to succeed in a wide range of careers, including those outside traditional STEM fields [12]. This can help to address the skills gap in the job market and support economic growth.

Addressing the challenges associated with STEM education in higher education can lead to significant opportunities for students, faculty, and institutions [13]. Higher education institutions can prepare students to succeed in a rapidly evolving world by embracing innovation, collaboration, and diversity [14].

SUMMARY AND CONCLUSION

STEM education (Science, Technology, Engineering, and Mathematics) is critical in higher education. STEM subjects provide students with multiple opportunity to acquire critical thinking, problem-solving, and technical abilities that are highly appreciated in the employment market. STEM education, on the other hand, has a number of obstacles, including a gender and diversity gap, cost and access concerns, curriculum creation, and faculty recruitment and retention.

To solve these difficulties, higher education institutions may stimulate creativity, cooperation, and diversity. Institutions may assist students in developing practical skills and experience by encouraging entrepreneurship and relationships with industry and government. Moreover, actions to promote diversity and inclusion may aid in closing the gender and diversity gaps in STEM disciplines.

Overall, STEM education in higher education may help students flourish in a fast-changing environment while also promoting economic development. Institutions can build a highly qualified workforce and encourage innovation and advancement in society by tackling the obstacles and exploiting the possibilities connected with STEM education.

References

[1] *P. S. Aguirre, V. C. Vaca, R. S. Poveda and E. J. Moyano, "STEAM methodology, as a resource for learning in higher education," in INTED2020 Proceedings, 2020.*

[2] *M. Clarke, "STEM to STEAM: Policy and Practice," The STEAM revolution: Transdisciplinary approaches to science, technology, engineering, arts, humanities and mathematics, p. 223–236, 2019.*

[3] *X. Ge, D. Ifenthaler and J. M. Spector, Emerging technologies for STEAM education: Full STEAM ahead, Springer, 2015.*

[4] *V. Hlukhaniuk, V. Solovei, S. Tsvilyk and I. Shymkova, "STEAM education as a benchmark for innovative training of future teachers of labour training and technology," in SOCIETY. INTEGRATION. EDUCATION. Proceedings of the International Scientific Conference, 2020.*

[5] *P. Boytchev and S. Boytcheva, "Gamified evaluation in STEAM for higher education: A case study," Information, vol. 11, p. 316, 2020.*

[6] *R. Kwan and B. T.-M. Wong, "Latest advances in STEAM education research and practice: a review of the literature," International Journal of Innovation and Learning, vol. 29, p. 323–339, 2021.*

[7] *C. Carter, H. Barnett, K. Burns, N. Cohen, E. Durall, D. Lordick, F. Nack, A. Newman and S. Ussher, "Defining steam approaches for higher education," European Journal of STEM Education, vol. 6, 2021.*

[8] *L. V. Shukshina, L. A. Gegel, M. A. Erofeeva, I. D. Levina, U. Y. Chugaeva and O. D. Nikitin, "STEM and STEAM education in Russian Education: Conceptual framework.," Eurasia Journal of Mathematics, Science and Technology Education, vol. 17, 2021.*

[9] *J. Kim, D. Sa and J.-Y. Kim, "Towards higher educational M-learning platform for conceptual STEAM environment," International Journal of Multimedia and Ubiquitous Engineering, vol. 11, p. 93–98, 2016.*

[10] *C. P. Sarmiento, M. P. E. Morales, L. E. Elipane and B. C. Palomar, "Assessment practices in Philippine higher STEAM education," Journal of University Teaching & Learning Practice, vol. 17, p. 18, 2020.*

[11] *C. W. Thurley, "Infusing the arts into science and the sciences into the arts: An argument for interdisciplinary STEAM in higher education pathways," The STEAM Journal, vol. 2, p. 18, 2016.*

[12] *A. Zb, D. Novalian, R. Ananda, M. Habibi and F. Sulman, "Distance Learning With STEAM Approaches: is the Effect on the Cognitive Domain?," Jurnal Educative: Journal of Educational Studies, vol. 6, p. 128–139, 2021.*

[13] *M. P. E. Morales, C. P. Palisoc, R. A. Avilla, C. P. Sarmiento, B. C. Palomar and T. O. D. Ayuste, "Self-professed proficiency of Philippine higher education (PHE) teachers of STEAM disciplines," Philippine Journal of Science, vol. 149, p. 415–426, 2020.*

[14] *M. Puspaningtyas and S. Sulastri, "Application of Project Based Learning and STEAM in Higher Education," 2023.*

Sustainable Development Goals
Journey towards Quality and Holistic Education

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Abstract

India has taken great efforts towards putting the Education for All plan into action. To ensure that all children in the country have access to free and compulsory education, several important initiatives have been taken by stakeholders in the country. The Indian educational system has received the necessary boost. Thanks to flagship programmes like the Samagra Shiksha Abhiyan (SSA), National Literacy Mission (NLM), and regulations like the Right to Education (RTE). Even though enrollment rates in elementary schools have greatly increased nationwide, problems still need to be solved. The paper's main focus is on the present strategies used in the state of Goa to integrate Goal 4 of the Sustainable Development Goals (SDGs) on education into the Indian context by aligning the New Education Policy and its impact on achieving the targets of SDG 4. The main objective is to align the policies of Govt. of Goa with Sustainable Development Goals. The study majorly focuses on the targets of Sustainable Development Goals precisely Quality Education and also Liberating a pupil from conditioned learning and promoting education that is free from the defined curriculum, through holistic and quality education.

Keywords: Quality, Holistic, Education and Sustainable Development

INTRODUCTION

What are Sustainable Development Goals?

Sustainable Development Goals (SDGs) are a set of 17 Goals adopted by 193 member countries of the United Nations at the historic Summit held in New York on 25 September 2015. Came into force on 01 January 2016, the SDGs are expected to stimulate developmental actions in areas of critical importance such as ending poverty and hunger and providing healthy lives and quality education. The deadline for achieving them was set by the UN Member States. Compared to the Millennium Development Goals, in which they succeed, the SDG covers more ground, with ambitions to address inequalities, climate change, economic growth, decent jobs, cities, industrialization, oceans, ecosystems, energy, sustainable consumption, and production, peace, and justice. The MDGs were only intended for action in developing countries, whereas the SDGs are universal and apply to all countries.

Introduction by UN Multidimensional Approach
- 17 goals and 169 sub-goals

The 17 SDGs are distributed evenly across 169 sub-goals and balanced across the three dimensions of sustainable development - with 6 predominantly social goals (goals - 1 to 6), 5 economic goals (goals - 7 to 11), and 4 environmental targets (targets - 12 to 15). A separate goal (Goal - 16) on peaceful societies and effective institutions addresses the enablers of development. A standalone goal (Goal - 17) on global partnership was included to provide financial, technological, and systemic support to developing countries. The broad focus of the paper is on the current approaches that India and Goa are specifically pursuing to contextualize SDG 4 to quality education by integrating it into the formulation of new education policy and its positive impact on the achievement of quality education, such as SDG 4 emphasized.

SDG4's 3 underlying principles

- **Education is a basic human right and a fundamental right.** To fulfill this right, countries must ensure universal, equitable access to inclusive and equitable quality education and learning, which should be free and compulsory, leaving no one behind regardless of gender, disability, social and economic situation. Education should aim at the full development of human personality and promote mutual understanding, tolerance, friendship and peace. Education should go beyond basic literacy and numeracy skills and equip individuals with creative, critical thinking, and collaborative skills while building curiosity, courage and resilience.
- **Education is a public good** for which the state is responsible. Education is a shared societal endeavor, implying an inclusive process of public policy formulation and implementation, in which civil society, teachers and educators, the private sector, communities, families, youth and children play important roles. The role of the state is essential in setting and regulating standards and norms.
- **Gender equality** is linked to the right to education for all. Achieving gender equality requires a rights-based approach that ensures boys and girls, women and men not only access and complete educational cycles, but is equally empowered in and through education.

Sub-goals of SDG 4: Quality Education

- Ensuring effective learning outcomes at primary and secondary level through equitable and quality education. Ensuring that all girls and boys are ready for primary education through equal access to early childhood development, care and pre-primary education.
- Ensuring an affordable and quality education for all women and men through quality technical, vocational, and tertiary education.

- Promoting technical and vocational skills among youths and adults for employment, decent jobs and entrepreneurship.
- To eliminate social disparities at all levels of education and ensure equal access to all vulnerable sections of society.
- To ensure that literacy and numeracy skills are imparted to a substantial population of the society.
- Promoting a culture of peace, non-violence, cultural diversity and global citizenship among all the learners for sustainable development in society.

What is Quality Education?

The development of each student's physical, social, mental, emotional, and cognitive skills is the main focus of quality education, regardless of the student's race, ethnicity, gender, status, socioeconomic standing, or geographic location. A child who receives a high-quality education in school will be prepared for life, not just for testing.

A healthy learning environment, appropriate infrastructure, an updated curriculum, equipment, teaching aids, and resources are all essential components of quality education.

What is Holistic Education?

In an integrated learning environment, educators who practice holistic education work to meet students' emotional, social, ethical, and academic needs. Positive school environments and offering students whole-child support services that address both their academic and non-academic needs are emphasized.

Students are taught to think critically about their actions, how they influence the local and global community, and how to take advice from the community. Teachers frequently assign students projects that require them to use their critical thinking abilities to address problems in the real world.

Holistic education is a learning philosophy that benefits students, teachers, schools, and communities in various ways. Students are given the power to enhance their academic

performance and acquire the life skills required to embark on a prosperous professional career.

OBJECTIVE OF THE STUDY

To study initiatives through which Sustainable Development Goals have been implemented in providing Quality & Holistic Education.

Implementation based on Targets under SDG 4: Quality Education

Target 1: Learning Outcomes through Free and Equitable Education

- Right to Education Act was implemented in 2009 which made education a fundamental right and offers free education up to the age of 14 years in the state of Goa.
- Government of Goa in recent years has focused on strengthening the infrastructure of government institutes and also government-aided institutes through various programs like Goa Samagra Shiksha Abhiyan, Rashtriya Uchchattar Shiksha Abhiyan, etc.
- Focus on the training of teachers regarding outcome-based learning through the State Council of Educational Research and Training, District Institute of Education & Training, Goa Education Development Corporation, etc.

Target 2: Quality Pre-Primary Education

- Government of Goa is one of the top runners to implement of NEP 2020. The NEP Implementation plan is ready for both school & higher education. Phase 1 of NEP 2020 which includes structural changes will be implemented from the academic year 2023-24.
- Directorate of Women and Child Development has implemented the Supplementary Nutrition Programme (SNP)

under Integrated Child Development Services (ICDS) to curb malnutrition among pre-primary students.

- Recruitment of Anganwadi Workers by Directorate of Child & Women Development with training to ensure early childhood development without discrimination.

Target 3: Education for all

- The recent developments in the education sector especially in higher education like setting up institutes of national importance like the National Forensic Sciences University (NFSU) & India International University of Legal Education & Research (IIULER) Indian Institute of Technology (IIT), National Institute of Technology (NIT), All India Institute of Ayurveda (AIIA) have ensured maximum choices are made available to students and no field is left untouched in the education sector.
- To promote skill development in higher education Goa University and its affiliated colleges have started Bachelor of Vocational Education in various fields which offer vertical mobility to students.
- During the COVID-19 pandemic situation authorities stressed on providing online education to students for which network infrastructure was strengthened, Educational channel and digital learning platform named Digital Integrated System for Holistic Teaching and Virtual Orientations (DISHTAVO) was launched.

Target 4: Vocational Skill & Entrepreneurship

- Under Goa Samagra Shiksha, National Skills Qualification Framework (NSQF) courses have extensively promoted vocational education in all government schools in the state.
- Directorate of Skill Development & Entrepreneurship under its schemes like the Skill Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) programme conducts short-term demand-oriented training courses for marginalized communities in society.

Target 5: Special Education

- There are 28 special schools across Goa which make the state one of the best-performing state in the country as far as population is concerned. These schools ensure that all special students are enrolled in schools.
- Besides special schools, various Non-governmental organizations are actively engaged in upbringing the status of Persons with Disability (PwD) through Directorate of Social Welfare.
- Government of Goa issues guidelines to all its departments and other public infrastructures to make Person with Disability (PwD) friendly infrastructure.

Target 6: Basic Education (Literacy & Numeracy)

- Under, National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat) programme various awareness campaigns for parents and community members have been conducted in the state to ensure that every child in the state necessarily attains foundational literacy and numeracy.
- Taking cognizance of the National Achievement Survey (NAS) report 2021 Directorate of Education has issued directives to improve students' performance in mathematics subject.

Target 7: Promotion of Cultural Diversity

- Goa University and the Directorate of Art and Culture organized various activities under Ek Bharat Shrestha Bharat to promote cultural diversity in the state. Goa was paired with Jharkhand state for the cultural exchange programme.
- Compared with other states in India, Goa has taken maximum efforts when it comes to Gender Equality. Goa is the only state to have Uniform Civil Code for all religions. Government of Goa started various schemes for women beneficiaries like Ladli Laxmi Scheme, Griha Aadhar Scheme, Prabhat Scheme, Mamta

Scheme, Swawlambhan Scheme, and various other initiatives to maintain gender equality in the state.

CONCLUSION

The study majorly focuses on the targets of Sustainable Development Goals and efforts made in achievement of the said goals by the respective government. The achievement of sustainable goals is inclusive of all the policies and procedures framed by the Government. The achievement of the journey till date has led to quality changes in education and the effect is visible in the educational institutions of the State of Goa. The state is leading in many of the sub-goals as compared to other states in India. The task force to achieve the sustainable goals and the roadmap has immensely helped the state to achieve Quality and Holistic Education.

References

1. *Boeren, Ellen. (2019). Understanding Sustainable Development Goal (SDG) 4 on "quality education" from micro, meso and macro perspectives. International Review of Education. 65. 10.1007/s11159-019-09772-7.*
2. *https://www.globalgoals.org/goals/4-quality-education*
3. *https://www.campaignforeducation.org*
4. *http://www.goadpse.gov.in/*

Technology Embedded Education: The Future of Learning

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Abstract

The 21st century is called as the technological era because of the availability of technological and resource access. Technology acts as a major and vital part in our day to day life. The technological evaluation has been groomed a lot and laid the foundation for Doorstep Education. The Doorstep education means accessing all the content and material 24X7 at student's doorstep. The doorstep education changed the overall idea by overcoming distance barrier and proved that by means technology education can be accessed at any time in all places. Technology has laid a very strong foundation in every field it is now time for its penetration to education field. The research teaching and training enormous amount of habits, skills and knowledge can be transmitted from the current generations to the upcoming generations through education. In current trend ICT (Information and Communication Technologies) plays an important role for enhancing the teaching technologies to higher level. Incorporation of the Information, Communication and Technology will help the teachers for the global requirement level which can change the regular teaching and learning method with the help of teaching based on technologies and provides facilities for learning tools. The overall incorporation of regular and physical resources of technology

embedded education provides enormous access to needs of education. To produce maximum production in education through higher value the teacher student teaching, assessments, evaluations, curricular activities and co-curricular activities can be incorporated together. To upgrade and improve the education quality educational technology can be used it is an organized process via which education can be moved to next level of teaching. The execution and evaluation pattern can be conceptualized in a systematic way to produce better educational technologies. It improves teaching and learning and helps in the improvement of upcoming applications on teaching techniques used in current modern education. This paper is a speculative attempt to view and determine the new trends in technology in field of education and displays ICT integrations for upcoming technology based teaching and learning methodologies.

Keywords: Education, Blended learning, ICT, Technology Enabled Learning

INTRODUCTION

According to current trends technology has been accessed by youth at fingerprint. This generation youths have enormous interest towards Mobile phones, computers, Wi-Fi, PlayStation and the applications of social media. According to the latest survey it is stated that students are spending innumerous hours on Instagram, Twitter, Youtube etc. Technology acts as a key catalyst in today's classroom and it is considered as the conspicuous form of learning. Current state of technology is in transitional world where to improve and for the betterment of student's passion towards learning lot of efforts has been taken by the teachers to incorporate technology in everyday activities of students. According to current standards to provide adequate quality knowledge and education to students the teachers are facing huge pressure. The main goal and objectives of these standards is to provide informative sills, adequate knowledge and technological

driven approach for students according to current industry needs. To enhance the learning ability of the student's technological tools and equipment's can be used by the educators. The usage of new information technology will create a vital growth in students learning methodology. To support and produce adequate knowledge to student's technologies can be generalized and implemented in day to day classroom. With the help of technology willingness and development of students can be enhanced towards learning. It has been proven that cognitive skills and psychomotor changes have been detected while using modern technologies like navigation systems, computers etc. The main aim of this study is to verify perceptiveness of technological usage and learning impact on students in usage of technologies. The computer related tools and internet which has been used in educational technologies have been only used for this study. To empower or impact the learner it is mandatory to know technological impact on student learning. The main intent of this research is to assist educators to follow best practices which can be done in classroom. Based on the information given from educator the success can be obtained by the students. The results obtained from this study will technological knowledge which has been combined together in the classroom fixture.

LITERATURE REVIEW

Ruey S. Shieh (2012) on his study stated that based on the result conducted great exposure was created among participants when they are exposed to various characteristics of creative instructions. Student showed more interested in classes and physics and they also showed interest in extracurricular activities teacher also said that these technologies helped to improve strengths of students. His dedication and confidence has been increased after seeing student's positive response and achievements. It is also established that the educators teaching trust and aspirations to transform highly reflected their classroom outlet and technological exposure. The proposition are provided to appliance innovated methodologies in school. The teaching learning occurs on four

dimensions of work systems have been taken for review i.e. human factor, courses, technology and environment. Performance outcomes and functional design has been influenced by both system interactions demand and combinational of physical and cognitive demand. In 2013 Raghunathan Rajesh conducted an information study on the teaching learning occurs on four dimensions of work systems have been taken for review i.e. human factor, courses, technology and environment. Performance outcomes and functional design has been influenced by both system interactions demand and combinational of physical and cognitive demand. The review outlined that it is mandatory for the stockholders to understand the successful learning; upcoming learning methodology of students should be done for betterment of education system. In 2013 Matt Bower et.al had established a study of ICT technologies (Information and Communication Technology) accomplishment so that it will be easy to combine education program of students and technology and create an approach for students. The funds were given for teaching teachers from Australia; staff involved in academic to work together with pedagogy officers of ICT for future upcoming projects. The outcomes contain assist that is needed for the improvement and the objective of   correlation development in successful ICT building. In 2013 case study on TEAL was done by Morrison & Long new learning format was established which contains three major components such as hands-on, lecture skills and simulations by the students. The process   used for execution of real format aimed at developing powerful system for learning for the growth of student's consideration increasing their creativity and informative skills from context of innovative technologies to produce active learning. In 2015 study was conducted by Nurfarhassan, high practical learning was conducted by the application of TEAL. In the TEAL application   helps improving the perception to improve creativity and high innovations, the availability of laboratory facility is high in environment of TEAL learning. The innovativeness and creativeness in student's hypothesis study proved that there is relationship between understanding capacity of

students and TEAL level of applications. It is stated that students understanding can be improved using TEAL. To strengthen the innovation and creativity skills of students, the study stated that both the Educator and student should apply TEAL in teaching and learning methodology. The helps of technology allow teachers to embrace the approach of flipped classroom. So based on flipped classroom the students can go through the content on previous day itself on home and while coming to school on the next day the student can participate in discussion, exercises and activity conducted by the teachers. In 2017 Song and Kapur stated that studies have been done based upon the problem-solving skills of students and for mathematical query flipped classroom can be used to improve understanding skills of the students. While in this method most of the students are studying on their own so it is stated that some of the problem solving conversation on lecture skills have been missed by the students.

RESEARCH METHODOLOGY

The research contains a combined method of approach to the technological combination of learning process of the students. A survey has been done and data has been collected. 14 questionnaires were asked in the survey like open-ended response multiple choice tec. In 2010 Plano, et al found that there is flexibility in research design process. The data set containing data's has been used by the researchers. Percentage, mean and standard deviation has been used in descriptive statistics to analyze research data. On upcoming themes qualitative data has been analyzed and organized. The qualitative and quantitative data has been measured to assist the research questionnaires.

Research Questionnaires

1. What are the educators view towards the technologies used in teaching and learning?
2. What are the approaches of educators concerning the influence of technology used on students learning?

3. What is the opinion of educators regarding the result produce by integration of technology in classroom?

ANALYSIS AND DISCUSSION

The main idea of this study is to find out the usage of technology in classroom for betterment of students education. Generally the data states that from contributor perspective to engage students and strengthen learning technology can be used as an appliance. It is sated that for various purposes technology can be used as an appliance. The usage of technologies by educators in classroom has been differentiated and shown in below Graph 1.

Graph 1
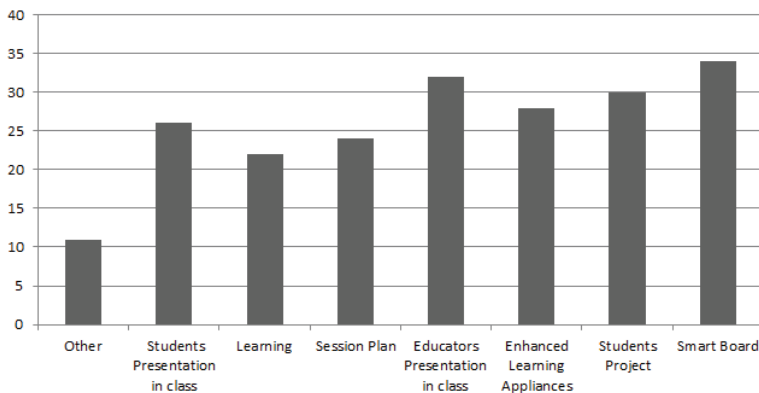
The above graph states that usage of technology by educators has been increased by comparing the time spent on educators presenting in class and usage of smart board for teaching and learning and other appliances to help in improvement of student's growth in learning. On session plan and communication a fewer amount of technological time was spend by the teachers. Educators also stated that enormous amount of interest was shown by the students in learning while combining technology into

education. To enhance and improve the standard of learning the student have used technologies like project creation, collaboration in teams for activities and other applications under the guidance of educators.

Based upon the educators perceptiveness the researcher wanted clear idea and outline of technology used in teaching and learning process. Graph 2 explains the daily time consumption of technology used by the students in day to day life. We educators analysed that students of a class spends mainly thirty minutes a day on using technology for reading and learning process. The graph displays the usage of technology by 100 students. 36 students used technology for 0-30minutes per day (47%). 25 students used technology for 30-60 minutes per day (13%). 9 students used technology for 60 – 90 minutes per day (24%). 19 students used technology for 90 – 120 minutes per day (9%). 11 students used technology more than 120 minutes per day (7%).

Graph2
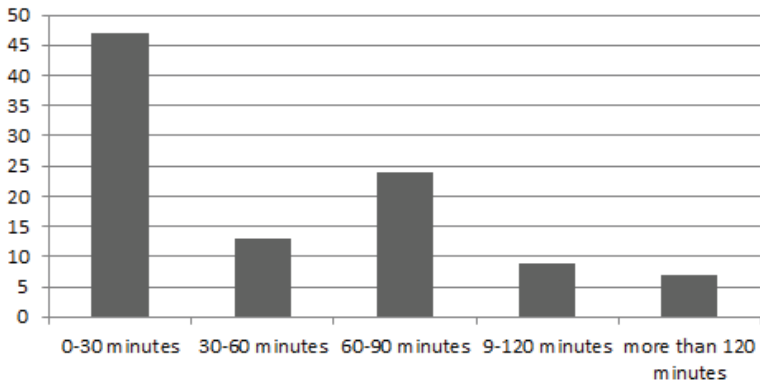
During the interactions with educators it is stated that access to devices should be increased devices like Laptops, Chrome books shall be used in classroom in order obtain implementation of technology in a successful way. To provide

more beneficial arrangements for student's time is required for educators in order to understand and make research on technology related platforms. Times also plays an important role in education as an educator needs time to convey the usage of technology to students in an efficient way. Students should be given technological problems so that there problem-solving ability can be tested. When question is asked to researcher , Are students familiar with other learning method if there is a failure in technology are technology is unavailable? Nearly 72 % of educators stated that students are aware of other methods and they are capable to find answer. It is also noted that many classes share technology transformation between them. So we have implemented Smart COE method where students are asked to bring their own devices so that classes can be taught in a practical way to students and simultaneously the students can work and implement program at the same time. While consolidating the data's there were many positive outcomes from the students. In current trends technology provide high impact and interest on students to engage themselves in activity and they are very focused on completing the activity. Educator's states while using technologies students innovative and creative skills have been gradually increased.

Important aspects of COE CLASS

The resources provided by COE model contains:

1. **Flipped Classroom**
2. **Practical Class**
3. **Presentation Session**
4. **Project Session**

1. Flipped Classroom

It is a method or technique where students were given prior contents and they study the content on previous day and while coming to class discussion will be created on that topic and finally conclusion will be given by the Educator. This method makes

students to think out of box and create anxiety and excitement on the topic. This creates a major impact towards learning of students.
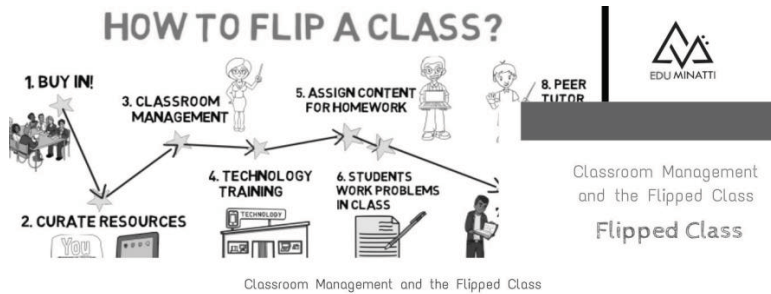
Figure1 – Flipped Classroom

2. Practical Class

Practical class session is a session where students work on the concept at the same time with the help of educator using laptop.

Figure2 – Practical Class

In this concept the learning method is done using analogy concept. Analogy concept is a method where real time examples have been co-related to subject concepts (i.e.) in below image (Figure2) analogy about stack has been mentioned. Stack represents LIFO (Last in First Out) Concept.

3. Presentation Session

Presentation session is techniques were students are divided into groups and a topic is assigned to each team. The presentation is done in a way that each member of the team should present the topic and it happens in a rotational basic.

4. Project Session

Project session is process were during the end of a course the student should submit a project assigned to him. The project title will be given to him at the beginning of the course so that he can implement his own innovation and creativeness to that project.

CONCLUSION

The discovery of this study states that there are enormous advantages in using technologies. It is founded that participation and involvement of students is high while using technologies. There is no doubt that with the help of technology our education system in teaching and learning has been transformed to new era. As a part of student's day to day life it is our duty to incorporate technology into education so that they can attain maximum knowledge. To obtain personal success technology incorporated with education is mandatory, so it gives a lifelong success path to students. With help of these technologies students can open up their mind, acquire new ideas, creativity and innovative skills can be produced. Today competition has been increased from local to global scale so it is mandatory for the students to adopt and work dynamical according to the situation. It is time for us to challenge ourselves and adapt to technologies so that the usage and incorporation of technology can make **"Today's Students to Become tomorrow's Leaders"**.

References

[1]. ACTE & P21, (2010). Education preparation – a vision for the 21st century (draft). Retrieved from http://www.aacte.org/pdf/News/featured_artic les/Educator%20Preparation%20and%2021st%2 0Century%20Skills%20DRAFT%20021510.pdf [Google Scholar]

[2]. Abbitt, J. T. 2011. Measuring technological pedagogical content knowledge in pre service teacher education: A review of current methods and instruments. Journal of Research Teacher Education, 43: 281–300. [Taylor & Francis Online], [Google Scholar]

[3]. Anderson, L. and Krathwohl, D. 2001. A taxonomy for learning teaching and assessing: A vision of blooms taxonomy of educational objectives, New York, NY: Longman. [Google Scholar]

[4]. Bower, M., Hedberg, J. and Kuswara, A. 2010. A framework for Web 2.0 learning design. Educational Media International, 47: 177– 198. [Taylor & Francis Online], [Google Scholar]

[5]. Darling-Hammond, L. 2010. Teacher education and the American future. Journal of Teacher Education, 61: 35–47. [Crossref], [Web of Science ®], [Google Scholar]

[6]. Duncan, A. 2010. Teacher preparation: Reforming the uncertain profession. Education Digest, 75: 13–22. [Google Scholar]

[7]. Hughes, J., Gonzales-Dholakia, G., Wen, Y., & Yoon, H. (2012). The iron grip of productivity software within teacher education. In D. Polly, C. Mims & K. Persichitte (Eds.), Developing technology-rich teacher education programs: Key issues (pp. 170–191). Hershey, PA: ICI Global. [Google Scholar]

[8]. Jackson, T. (2012). Ways to mentor methods faculty integration of technologies in their courses. In D. Polly, C. Mims & K. Persichitte (Eds.), Developing technology-rich teacher education programs: Key issues (pp. 519–534). Hershey, PA: ICI Global. [Google Scholar]

[9]. Jaipal, K. and Figg, C. 2010. Unpacking the ―Total PACKage‖: Emergent TPACK characteristics from a study of preservice teachers teaching with technology. Journal of Technology and Teacher Education, 18: 415–441. [Google Scholar]

[10]. Brooks, D. C. (2012). Space and consequences: The impact ofdifferent formal learning spaces on instructor and student behavior. Journal of Learning Spaces, 1(2), 1-10.

[11]. Hensen, J. L. M. (1990). Literature review on thermal comfort intransient conditions. Building and Environment, 25(4), 309-316.

Technology Enhanced English Language Learning

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Abstract

Technology is having a growing impact on language learning worldwide. Technology is the application of knowledge for achieving practical goals in a reproducible way. Technology can be knowledge of how to do things. The landscape of language teaching and language learning has transformed so rapidly that the formal classroom does not serve as the primary learning site anymore. Technology-based learning (TBL) constitutes learning via electronic technology, including the Internet, intranets, satellite broadcasts, audio and video conferencing, bulletin boards, chat rooms, webcasts, and CD-ROM. Modern language learning technology includes but is not limited to language labs, digitalization, multimedia devices, mobile phones, audio/visual multimedia content, EdTech solutions, and social media which can facilitate faster and more comprehensive language progression. This study analyses the benefits of technologies and their connections with the four LSRW skills to enhance English language learning.

Keywords: Technology, language learning, multimedia tools, language labs, comprehensive language progression

INTRODUCTION

Technology Enhanced Learning means any technology that enhances the learning experience. The term can be used to describe both analogue and digital technologies, but more lately, the digital TEL is taking over education in the form of different types of

educational software. TEL is transubstantiating and enhancing education and educational institutions beyond recognition. This is especially true in the growing frequencies of education apps, software for facilitators, and e-learning services. Information and Communication Technologies are presently witnessing dizzying development. This affects virtually all fields of our society, and education is no exception. Technology Enhanced learning (TEL) is decreasingly presented as a necessity in a society where rapid-fire changes, adding knowledge, and the demands for a constantly streamlined high- position education come a endless requirement. We're entering a phase of education where technology isn't just a precious resource, but an essential tool helping to ameliorate the experience for both scholars and academicians.

While mongrel, HyFlex, and remote learning were numerous in the educational sector were apprehensive of before March of 2020, parents, scholars, and academicians around the globe are more familiar with than ever ahead. Having been thrust into the arms of remote learning, scholars and educators have become dependent on technology to help bridge the physical distance than ever ahead. As mongrel and HyFlex models may come recently going forward, it's veritably possible that Technology Enhanced Learning will be the main driving force behind perfecting these ways of tutoring. With TEL, faculties are no longer limited to the handbooks that their institutions give. By using similar as videotape, audio, and interactive learning, scholars have numerous ways to learn. Some can find creative ways to educate their scholars in an engaging way. Technology has changed the traditional way so that learning is further hands- on. By furnishing scholars with tools and platforms they're familiar with they're more likely to be engaged and get further out of the literacy experience. When scholars are more engaged they're all the more likely to enjoy the experience and to retain the information that's being communicated. The reality is that it's nearly insolvable to survive the working world without technology.

DIGITAL LITERACY

The tutoring exertion has changed with the internet or bias similar as computers, smartphones, and tablets. It's now possible to use other forms of education and different means of literacy, which allow technology to concentrate on education towards cooperation, the critical capacity of scholars, and the value learning. Discovering everything that puts us within our reach.

Technology Enhanced Learning combines details of information and communication Technologies, similar as tutoring and learning.

- Allow expanding the level of learning beyond the traditional classroom.
- Enable new formulas for approaching the theoretical and practical corridor of the subjects.
- Increase access to education and foster interactivity.
- Simplify the action of participating educational accoutrements or information, both for facilitators and learners.
- Invite all to continue learning and developing knowledge or to ameliorate with redundant content or digital books.
- Make smooth connection and participation between educational centres regardless the location.
- Allow to be up to date with data, numbers and current news from around the world, and allow all to learn about other realities different from the terrain in which everyone live.

Technology is growing and advancing day by day. The new academy inventories are technological and that's valued in the classroom are:

1. E-books

Paper books are heavy; it's uncomfortable to transport them daily in packs. Likewise, with the nonstop advances, discoveries and wild pace of events they soon come out-dated. Digital books avoid these problems, since it's possible to read them on different

electronic bias and they can snappily adapt their contents grounded on the ways that come out.

2. Smartphones, Computers and Tablets

Computers aren't new, and smartphones aren't generally welcome in classrooms. Still, they're getting the ideal instrument for developing computational thinking and promote pupil engagement in academy through interactive learning.

3. Online Courses

Online Courses contribute to numerous people being suitable to punch training and reduce the educational gap due to their characteristics they're frequently free, cooperative, allow scholars to prick the content freely, and don't bear an access test.

4. Interactive Groups

In numerous seminaries, it's common for parents to use interactive groups. They allow everyone to be in contact with the educational centre and stay up to date on all matters.

BENEFITS OF TECHNOLOGY

Some benefits of pupil engagement in a academy background are:

- Increased openings for their participation
- Enhancement in uplifting interpersonal connections
- Stylish Intellectual Challenges

Originally, technological gadgets were seen as an handicap to tutoring. The use of technology without supervision can be abstracting for scholars. Still, it remains to ask, what means does technology have to engage scholars, and how it can replicate for the literacy process.

The digital age has revolutionized every aspect of our daily lives, and education is no different. The educational technology is the set of information and communication, processes, and tools

applied to the structure and conditioning of the educational system in its colourful fields and situations.

Technology can foster collaboration with scholars in the same room, academy, and other classrooms worldwide. Also, instructors and scholars can develop essential proficiencies by using technology in the classroom. It's a common supposition that adding pieces of technology to the classroom will be abstracting to scholars. After all, smart phones are a constant source of distraction from academic and professional lives.

With utmost classrooms and jobs moved online, still, losing the occasion to choose to forget technology from the academy. Because technology is getting more obligatory to every learning atmosphere, how to incorporate it to engage the classroom effectively.

Using tools for learning in the ways or study plans allows a better development in the scholars and better performance. Thus, those who use them tend to be the most outstanding in the academic field.

TECHNOLOGICAL TOOLS

Some of the technological tools that can presently find in classrooms are:

- Information exchange platforms.
- Digital platforms for pupil- schoolteacher collaboration.
- Digital scrapbooks.
- Interactive digital whiteboards.
- Classes via videoconference.
- Audios or podcasts.
- Questionnaires.

As tutors strive to engage scholars in the learning process more directly with active participation, this means to include further interactive conditioning in classroom.

PRONUNCIATION AND SPEAKING SKILLS

Learning the rules and how to gasp foreign words is a crucial starting point of language learning. Displaying videotape clips for learners could give detailed guidelines that show how to move their tongue and jaw in the right way to produce a certain sound. Speech recognition technology will help learners rightly gasp common words and expressions and they admit targeted feedback and scoring to get the sounds just right. Apart from allowing the individual practice, software results can group scholars for spoken and make communication more productive. Hence, facilitators can manage language class more effectively and allow scholars to invest further time into speaking and active literacy. Engvarta is the best English-speaking app in India that helps to connect with live English Experts with learners. Duolingo is also one of the most famous English Learning apps and English speaking practice apps available online. Elsaspeak which stands for English Language Speech Assistant is an award-winning English-speaking practice app that helps you speak English correctly and confidently. The cake app provides you with opportunities to converse with native English speakers at no cost. Hello English, one can attain English fluency through other languages.

LISTENING SKILLS

Facilitators can launch a wide range of canted listening specifically designed for L2 learners to ameliorate listening skills. A number of available websites and authentic listening stuff similar as TED addresses and news broadcasts could be employed grounded on what scholars formerly learned and their interests. Every learner can have a truly substantiated experience indeed if they're learning the same content. British Council's free LearnEnglish podcasts cover a range of topics. The free BBC Learning English app combines its famous lessons and presenters all in one place. PORO's free app is suitable for all learners, from beginners to advanced. Wannalisn is a free app which uses short videos from

popular films, series and songs. Miracle FunBox is ideal for improving both your listening and speaking skills.

READING SKILLS

Reading appreciation requires the mastery of fundamentals, language, and advanced-position thinking skills. Facilitators could elect available stuff, from those for vocabulary structure to those for test module, so as to ameliorate scholars' reading appreciation step by step. Software results keep track of scholars' progress which improves their mindfulness of their weaknesses and strengths and, therefore, provides acclimatized reading textbooks for boosting specific skills. Topic-based reading exercises, each one including a reading text, pre-reading vocab, comprehension/vocab quizzes enhance reading skills. The Rocket Languages English course is the overall best app to learn English because of the quality of its lessons.

WRITING SKILLS

Language literacy software could serve to communicate and fantasize scholars' ideas, organize their information successionally, and more. Spell- checking tools automatically check everything scholars type, making it easy to spot and clear errors instantly. Blogs enable scholars to produce further suggestions in jotting or to blink review when revising rough drafts of written work. All available software results can be effectively employed to progress scholars' writing skills. Popplet - it's technically a productivity app but it's perfect for visual organization. Evernote is a great productivity and organizational app for all classes. Dragon Dictation writes down what you're saying as you speak it into your phone.

CONCLUSION

Introducing new technology into the classroom is controversial to some. Still, after the most recent consummation of how seminaries can operate entirely online, it's a reality that can't stay any longer.

Tools like QuestionPro, LivePolls, through which scholars can successfully integrate the inflexibility of technology into their academic lives.

The benefits that technology provides are enormous designed models in learning, ease of creation, embracing transnational social environment, furnishing innovations and understanding, and increased access to information. As technology advances and becomes more and more prominent in seminaries around the world, information and technology has come nearly as essential as oxygen when we consider how young generations learn and the types of jobs they will have in the future. It's a part of their particular individualities, and supports current learning because they can relate to it. Technology doesn't replace traditional literacy approaches; it simply supports different literacy approaches and is a part of ultramodern tutoring.

References

https://sanako.com/what-is-a-language-lab
Richards, J.C. (2015). The changing face of language learning: Language
learning beyond the classroom. RELC Journal,
https://www.mentimeter.com/blog/interactive-classrooms/how-to-use-mentimeter-in-a-hyflex-model-classroom
https://www.edutopia.org/article/6-essential-strategies-teaching-english-language-learners/
https://www.umassglobal.edu/news-and-events/blog/innovative-strategies-for-english-language-learners
https://www.edutopia.org/article/6-essential-strategies-teaching-english-language-learners/
https://www.researchgate.net/publication/331790019_Technology-enhanced_English_language_learning_and_teaching

Theoretical and Marketing Framework: A Multidisciplinary Approach to Literary Research

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Abstract

Holistic and Multidisciplinary approach towards research and learning has been the root of the Indian Education System since the Vedic Age. The contemporary period can be rightly termed as the 'Educational Renaissance' as we are witnessing the revival of age-old approach towards education and thereby research. Literature has always been multidisciplinary. It has rendered itself victim to the influence of other forms of art and incorporated their features as its own. As a result of which emerged new genres including stream of conscious narratives, Graphic Fiction, Bitpunk, etc. Literature by being multidisciplinary in nature has always attracted a multidisciplinary research methodology. The need of the hour is to extend and expand, as all this renaissance concerns is about reviving the age-old methodologies in the light of new technological developments. This research paper aims at doing so by incorporating a marketing framework to the existing theoretical framework.

Keywords: Advertisement literacy, Brand awareness, digital platform, literary research

INTRODUCTION

The world today revolves around stories. As the literary theoretical discipline claims anything and everything has come to attain the

status of a 'text' something that can be interpreted and analysed. Literature and literary research has always been multidisciplinary as it incorporates the ideologies and methodologies of different domains like philosophy, psychology, sociology etc. The aim of this paper is to extend the scope of literary research by bringing in the aspect of today's content creation and marketing strategies. The paper further aims at applying a theoretical framework to study an advertisement and also suggests how a marketing framework can be added to the usual approaches of literary research.

UNDERSTANDING ADVERTISEMENT

Advertisement can be rightly called a mode of public communication that aims at promoting and influencing the prospect customers. It generally focuses on establishing brand awareness and to communicate the values, missions and philosophies of a particular product or service. Advertisements are usually concerned with gaining monetary benefits by persuading people to buy a product or use a service. Advertisements have also seen tremendous transitions. It initially was entirely dependent on print media but now by making optimal use of technology has started dominating the digital era through digital advertisements. The digital platform demanded a different method of advertising and this demand gave rise to Content Creation and Content Marketing. Thus, advertisements these days highly rely on story telling for the advertisers want their brand to tell a story and be associated with it. Audiences are no longer lured in because of factual details or profitable offers. Audience now are attracted by the value of a brand and believes in the impact an advertisement creates in them. For instance, the marketing strategy of Zomato has become meme materials today. Their creative has paid off as their customers love to receive a notification from Zomato. Instead of being an irritation the notifications from Zomato can bring a smile on your face and can make your day. They do so by offering their customers relevant and personalized notification messages.

This leaves us with another noteworthy point that how advertisements are audience driven. Advertisers these days have audience as the focal point of their content creation. The digital platform and the various marketing tools help them study and understand the needs of their customers thereby paving way for personalized advertisements. Thus, advertisement today ensures in presenting their brand stories – a brand story that their customers can relate to and resonate with. This story telling aspect that the digital advertisement emphasis on is what facilitates us to do a comparative study of an advertisement and a literary text.

WHAT UNITES ADVERTISEMENT AND LITERATURE?

As discussed above advertisement like literature revolves around story telling. And story telling demands an enormous amount of creative energy and imaginative spirit. It is to creativity both advertisement and literature owe the development of new genres and distinguishable types. Advertisements as well as literature are driven by audience. That is, they want receivers and listeners. In other words, they aim at communicating. Both busies themselves trying to leave an impact on the audience. This common thread offers us a common ground for their parallel analysis.

IDENTIFYING BARTHES' CODES IN ADVERTISEMENTS

Roland Barthes identifies five narrative codes that can be applied to analyse any narrative. The five codes are:

- The proairetic code: deals with actions in a narrative.
- The hermeneutic code: deals with suspense in a narrative.
- The cultural code: deals with cultural references in a narrative.
- The semic code: deals with connotative meanings embedded in a narrative.
- The symbolic code: deals with binary opposites that a narrative posits.

These codes can be used to study not only literary narratives but also a narrative that an advertisement presents. The advertisement this paper will be focusing on analysing is that of Surf Excel. In the year 2020 Surf Excel rolled out a Holi campaign emphasizing on the message of togetherness. The narrative presents a disjointed family consisting of two estranged brothers. The elder brother has a little son who to make the occasion of Holi memorable and happy devise a plan and carries the colour of his house to his uncle's house. The little one's arrival gives his uncle confidence to visit his brother where at the end they reunite into one happy family again. The running time of the advertisement is one minute and thirty five seconds. This extremely short narrative encompasses all the five codes.

Firstly, the proairetic code is evident as the narrative is characterized by a sequence of action. It has a beginning portraying a family devoid of happiness on the day of Holi and a middle where a little boy visits his uncle which leads to a happy ending. Secondly, we are not offered any details concerning the misunderstanding or fight that led to the brothers becoming estranged. This is where the hermeneutic code is at work. By withholding this piece of information the creator here is able to make this family a general symbol of any family with conflict and misunderstanding. Thirdly, the cultural code becomes evident in the usage of colours and the cultural message that it carries. Colours of Holi symbolizes forgetting, forgiving and reuniting with our loved ones. Further, starting from the colours to the family everything that the narrative focuses on is connotative in nature. The colours of Holi represents happiness and togetherness and the family becomes a representative of all Indian family. The colour that the little boy carries to his uncle's house not merely represents happiness but also innocence and love. The little boy himself embodies the spirit of Holi. Finally, the binary opposites that the narrative posits are White/Colour. The white that gets bright with the colours of Holi signifies the bleak and ordinary life getting coloured by the joy of festivities. There is also an emotional contrast where initially the mood is one of melancholy

and unwillingness which later develops into one of contentment and cheerfulness.

Hence this analysis clearly reveals how an advertisement too embodies all the qualities of a literary narrative. The content of an advertisement is equally impactful as that of a literary narrative. An advertisement of few minutes has the potential to make us laugh, cry and also to think. So to conclude it could be said that a piece of advertisement also becomes a material worthy of research.

LITERATURE AND THE MARKETING ASPECT

Though literature is an art it too has a monetary angle to it. In other words, literary works are written so that it could be sold. Writers need readers and literature demands audience. Shakespeare can be considered as a very good example to elucidate this point for he always made sure that his works catered to the needs of his audience. Further, we have always had writers who changed their endings so that their literary pieces would sound more conventional and can be sold. From Charles Dickens to John Green we have a list of novelists who altered their content to suit the audience. Similarly, the use of pen names was and is a marketing strategy. Initially, the female writers used male pseudonym to get their works published and eventually writers both male and female started using pen names to explore different genres or themes and also to appear to be someone different to avoid audience getting judged for their previous works. J. K. Rowling for instance used a pseudonym on the insistence of her publishers and also because she was venturing into a new genre. Literature too like any advertisement demands the "Know your Audience" strategy. Thus, a marketing framework like "STEPPS" formulated by Jonah Burger can be applied while creating a literary piece. This framework would help one formulate content that appeals your audience, something that reflects them and their life. Therefore, this focus on marketing strategies and methodologies would help us expand and extend the scope of literary research.

CONCLUSION

Multidisciplinary approach in literature is nothing new. The point that this paper would like to highlight is that it could be extended in the light of recent developments in digital marketing and content creation. Marketing strategies though give priority to monetary benefits, also put audience at the forefront thereby studying their wants and understanding their needs. The popularity of a website like Wattpad indicates the importance of audience and the significance of catering to their needs. Thus, bringing in a marketing framework and vice versa would thereby open new possibilities in the field of literary research.

References

Unilever. "Surf Excel Holi 2020." *YouTube, uploaded by Surf Excel*, 16 Feb.2020, *https://youtu.be/lmojBHmmhSA*.

"How can Advertising Work for My Business." *Square*, 16 March 2022, *https://squareup.com/au/en/townsquare/what-is-an-advertisement*.

Yeo, Daniel. "Contagious content: STEPPS and the Science of Shareability." *Report Lab*, 14 July 2014, *https://www.searchlaboratory.com/us/2014/07/contagious-content-stepps-and-the-science-of-shareability/* .

Elizabeth, De. "J. K. Rowling Explains the Reason Behind Her Pen Name." *teenVogue*, 10 July 2017, *https://www.teenvogue.com/story/jk-rowling-reason-pen-name* .

Barry, Peter. *An Introduction to literary and cultural theory.* Manchester University Press, 2009, pp. 49 – 50.

Towards a Holistic Approach to Education in India: Embracing Multidisciplinary Perspectives

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Abstract

The Indian Knowledge System is an ancient and diverse system of knowledge that encompasses various fields of study such as philosophy, spirituality, medicine, mathematics, and astronomy. This system is rooted in a multidisciplinary approach that recognizes the interconnectedness of various fields of knowledge. The multidisciplinary approach in the Indian Knowledge System is based on the concept of "Darshanas," which are six distinct schools of philosophy that explore the nature of reality and the human experience.

According to Jainism Anekantavada, everything has infinite possibilities hidden within it. An entity (a thing or object) can have many characteristics. These characteristics can be divided into two types: Universal (shared by many things) and Particular (unique to the thing itself). Just like different colours can exist in a

gem without conflicting with each other, these characteristics are interdependent identical and separate from each other.

The Indian Knowledge System recognizes the importance of interdisciplinary collaboration and used this multidisciplinary approach in fields such as Ayurveda, yoga, Indian mathematics, and in architecture of the ancient temples.

As a consequence of the fact, we need to teach different subjects together in Indian education to have a more holistic approach of learning.

INTRODUCTION

The Indian education system has come a long way from its early days when education was primarily focused on religious teachings and traditional knowledge systems. With the passage of time, it has evolved to embrace modern approaches, but there still exist many challenges to the system. One such challenge is the need for multidisciplinary perspectives in Indian education.

Multidisciplinary perspectives in education refer to an approach that integrates knowledge and practices from multiple disciplines or fields to address complex issues. The integration of multidisciplinary perspectives into Indian education can help in the development of well-rounded individuals, who can understand and address the complexities of the world today.

The Indian education system has traditionally been compartmentalized into specific fields of study, such as science, mathematics, humanities, and social sciences. This approach has created a lack of integration between different subjects, resulting in an inability to apply knowledge to real-world problems. This is where the integration of multidisciplinary perspectives can prove to be crucial.

INTERDISCIPLINARY CONCEPTS IN INDIAN KNOWLEDGE SYSTEM

Indian knowledge system is known for its interdisciplinary concepts, where different fields of knowledge are interconnected and integrated.

According to **Jainism Anekantavada,** everything **has infinite possibilities hidden within it.** An entity (a thing or object) can have many characteristics. These characteristics can be divided into two types: Universal (shared by many things) and Particular (unique to the thing itself). Just like different colours can exist in a gem without conflicting with each other, these characteristics are interdependent identical and separate from each other.

Anekantavada concept helps us to avoid having one-sided and extreme opinions about a given object or situation. Anekantavada elucidates this with the Elephant, Blindman story.

Each person has their own perspective, and their knowledge and understanding of the object or situation may be limited. Therefore, it is important to consider the opinions of others and try to understand and accommodate their views, even if they are different from our own. This is the real humanitarian outlook. We should think objectively and logically, without being influenced by our religion or ideology. It is important to avoid having a biased perspective, and try to understand the whole picture. This allows us to live in harmony with the people of different thinking.

Indian philosophy values the integration of different fields of knowledge and perspectives in the education system and emphasises a multidisciplinary perspective in education [1].

THE INTEGRATION OF TRADITIONAL INDIAN KNOWLEDGE AND MULTIDISCIPLINARY EDUCATION PROGRAMS

The Indian knowledge system has a long history of using a multidisciplinary approach. A few examples of how the Indian

knowledge system has incorporated multidisciplinary perspectives are presented here.

Ayurveda: Ayurveda is an ancient Indian system of medicine that uses a multidisciplinary approach to treat illnesses. It combines knowledge from various fields such as biology, chemistry, and physics to understand the human body and its functions. Ayurvedic treatments involve the use of natural herbs, massage, and dietary changes to restore balance in the body.

Yoga: Yoga is another ancient Indian practice that uses a multidisciplinary approach to improve physical and mental health. It combines elements of meditation, breathing exercises, and physical postures to promote overall well-being. The practice of yoga requires an understanding of anatomy, physiology, and psychology, making it a multidisciplinary approach to health and wellness [2, 3, 4, 5].

Indian Philosophy: Indian philosophy is a vast field that includes a wide range of disciplines, such as metaphysics, ethics, and epistemology. Indian philosophers have used a multidisciplinary approach to understand the nature of reality and the human experience. For example, the ancient text, the Upanishads, includes discussions on topics such as the nature of the self, ethics, and the nature of reality, incorporating knowledge from various fields such as psychology, philosophy, and theology.

Indian Mathematics: Indian mathematics is another field that has used a multidisciplinary approach. Ancient Indian mathematicians made significant contributions to the field of mathematics, including the invention of the decimal system and the concept of zero. They also made important contributions to astronomy, using mathematics to understand the movement of the stars and planets.

Indian Art and Architecture: Indian art is a diverse field that includes a wide range of styles and mediums, including painting,

sculpture, and architecture. Indian artists have used a multidisciplinary approach to create art that reflects their culture and beliefs. For example, the architecture of the ancient temples in India incorporates elements of mathematics, astronomy, and theology to create structures that are both beautiful and functional [6,7].

These are just a few examples of how the Indian knowledge system has used a multidisciplinary approach throughout history. The integration of knowledge from various fields has helped to create a rich and diverse body of knowledge that continues to influence Indian culture and society today [8,9,10].

Multidisciplinary courses offered in present Indian education system: There are several examples of multidisciplinary courses being offered in the Indian education system. Here are a few examples:

Bachelor of Design (B. Des.): This is a multidisciplinary course that integrates various fields such as art, design, and technology. It covers subjects like graphic design, animation, product design, and interaction design. Students who complete this course can work in fields like advertising, digital media, and branding.

Bachelor of Science (B. Sc.) in Environmental Science: This course combines knowledge from different disciplines like biology, chemistry, geology, and physics to study the environment. It covers topics like ecology, pollution control, and conservation. Graduates of this course can work in fields like environmental consulting, research, and management.

Other examples include courses like Bachelor of Arts (B.A.) in Journalism and Mass Communication, Bachelor of Computer Applications (B.C.A.), Bachelor of Arts (B.A.) in Liberal Arts, Bachelor of Commerce (B.Com.) in Accounting and Finance, and Bachelor of Science (B.Sc.) in Biotechnology. All of

these courses integrate knowledge from different fields and offer a multidisciplinary approach to learning.

ADVANTAGES AND IMPORTANCE OF A MULTIDISCIPLINARY APPROACH TO EDUCATION

Integrating different fields of study, students can develop a holistic approach to problem-solving. For example, a multidisciplinary approach to environmental studies could include inputs from ecology, biology, geography, economics, and political science. This approach would not only help students to understand the interconnectedness of various aspects of the environment but also provide them with a comprehensive understanding of environmental issues.

Furthermore, multidisciplinary perspectives can also help in the development of critical thinking skills. By understanding and analysing complex issues from multiple perspectives, students can learn to approach problems with an open mind and develop their critical thinking skills. This approach can help in creating innovative solutions to problems, which are not possible through a traditional approach.

Another benefit of multidisciplinary perspectives in education is that it can help in creating a more diverse and inclusive environment. Integrating different perspectives can help in promoting diversity in ideas, and a more inclusive learning environment that is accepting of different cultures and backgrounds. This approach can also help in the development of empathy and understanding towards others, which can be useful in creating a more tolerant and harmonious society.

CONCLUSION

In conclusion, multidisciplinary perspectives in Indian education can prove to be crucial in creating a more holistic approach to learning. By integrating knowledge and practices from multiple disciplines, students can develop a well-rounded perspective that

can help them in addressing complex issues. This approach can help in the development of critical thinking skills, promote diversity and inclusivity, and create a more tolerant and harmonious society. Therefore, it is essential to integrate multidisciplinary perspectives into Indian education to create a more comprehensive and inclusive approach to learning.

References

[1] *Tripathi, Richa & Singh, Krishna Pratap & Verma, Sandeep. (2015). International Journal of Multidisciplinary Approach and Studies Swami Vivekananda's Views on Philosophy of Education and Its Relevancy with Modern Life. 10.13140/RG.2.2.28227.84003.*

[2] *Banerjee, Swapan. "The essence of Indian indigenous knowledge in the perspective of Ayurveda, Nutrition, and Yoga." environment 1 (2020): 2.*

[3] *Patwardhan, Bhushan, Gururaj Mutalik, and Girish Tillu. Integrative approaches for health: Biomedical research, Ayurveda and Yoga. Academic Press, 2015.*

[4] *Bossart, Chase. "Yoga bodies, yoga minds: How Indian anatomies form the foundation of yoga for healing." International Journal of Yoga Therapy 17, no. 1 (2007): 27-33.*

[5] *Kochhar, K. P., A. K. Oberoi, S. Hazra, and P. R. Lal. "The role of Traditional diet and Yoga for infertility: A blend and balance of Traditional knowledge and Modern medicine." (2017).*

[6] *Jaiswal, Yogini S., and Leonard L. Williams. "A glimpse of Ayurveda–The forgotten history and principles of Indian traditional medicine." Journal of traditional and complementary medicine 7, no. 1 (2017): 50-53.*

[7] *Kapoor, Kapil. Indian knowledge systems. Edited by Avadhesh Kumar Singh. Indian Institute of advanced study, 2005.*

[8] *Journal of Leadership, Equity, and Research, Vol. 8, No. 2, 2022 Special Edition On Latina/O/X Postsecondary Education ISSN: 2330-6459]*

[9] *Menon, Sangeetha, Anindya Sinha, and B. V. Sreekantan, eds. Interdisciplinary perspectives on consciousness and the self. Springer India, 2014.*

[10] *Pandurangi, KrishnacharyaTamanacharya. "Purvamimamsa" from an Interdisciplinary Point of View." (2006).*

Proceedings of the National Conference on
BEST PRACTICES OF RESEARCH AND INNOVATION IN STEAM HIGHER EDUCATION

The Proceedings of the two-day National Conference on "BEST PRACTICES OF RESEARCH AND INNOVATION IN STEAM HIGHER EDUCATION" – A STEP FORWARD TO GLORIFY SUSTAINABLE DEVELOPMENT GOALS THROUGH INDIAN KNOWLEDGE SYSTEM held on 9th and 10th March 2023 explores research and innovation coupled with themes like Climate Finance, Green Development, Lifestyle for Environment, SDGs, Digital Transformation, Climate Action, Women Development Awareness, IKS, Indian Culture and Heritage.

Speakers from multifaceted domains addressed the audience and imparted insightful thoughts on research and innovation through NEP, AI, IPR, Indian Knowledge System, Heritage and Culture, Sustainability, R&D in Block Chain Technology and Design Thinking.

The proceedings of the conference will support young researchers who want to explore and expand their multidisciplinary approaches with societal impacts. In addition, the conference will contribute to our Indian young minds that can scale greater heights by harbingering our Indian Knowledge glory.

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