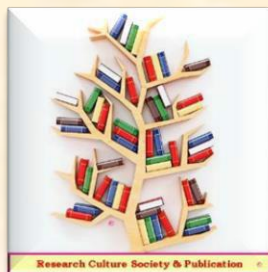## *Eurasian Conference*
on
"Digitalization, Socialization and Educational Development"

7 - 8 October, 2023

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Conference Special Issue - 30   October - 2023

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ON

"DIGITALIZATION, SOCIALIZATION AND EDUCATIONAL DEVELOPMENT"

(ECDSED – 2023)

7 - 8 October, 2023

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Conference, Seminar, Symposium organization in association/collaboration with different Institutions.

Conference, Seminar, Symposium Publication with ISSN Journals and ISBN Books (Print / Online).

About the organizing Institutions:

The history of **'Kyiv National University of Trade and Econ State University of Trade and Economics', Ukraine** starts from Kyiv branch of the all – Union Correspondence Institute of Soviet Trade founded in 1946. By the Decree of the President of Ukraine № 1059/2000 of September 11, 2000 the University was granted the status of the National University. The first higher educational institution in Ukraine to be certified for meeting the requirements of the standard ISO 9001:2015.

'Research Culture Society' (RCS) is a Government Registered International Scientific Research organization. Registered with several United or Government bodies. It is also an independent, professional, non-profit international level organization. RCS-ISRO shall also initiate and set-up new educational and research programs with other international organizations. Society has successfully organized 125+ conferences, seminars, symposiums and other educational programmes at national and international level. Society has collaboration – MoU with 70+ institutions – universities.

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The aim of the conference is to provide an interaction stage for researchers, practitioners from academia and industries to deal with state-of-the-art advancement in their respective fields.

Prof. Diana Fayvishenko

Prof. Yanina Lisun

Head, Department of Journalism and Advertising, State University of Trade and Economics, Ukraine, Europe.   https://knute.edu.ua/

Message

Dear Professional Colleagues.

We are happy that Department of Journalism and Advertising (State University of Trade and Economics, Ukraine) in collaboration with 'Research Culture Society' and 'Scientific Research Association' (Government Registered Scientific Research organization) are organizing Eurasian Conference on 'Digitalization, Socialization and Educational Development' during 7 & 8 October, 2023.

The aim of this International E-conference is to provide an interaction stage for researchers, practitioners from academia and industries to deal with state-of-the-art advancement in their respective fields. The main objective is to observe the current scenario and trends of citizen's life in digitalization and socialization practices in Educational systems.

We believe, this International E-Conference will help in redefining the strong connect between education and digitalization and the holistic development of students in the academic institutions. An additional goal of this international conference is to combine interests and scientific research related to digitalization, socialization and education development to interact with members within and outside their own disciplines and to bring people closer for the benefit of the scientific community worldwide.

Our best wishes to the organizers and Participants of the conference. The deliberations in these two days will chart a way for future development of digital culture, social capital, information technologies in education and communication, media and media socialization.

Prof. Diana Fayvishenko (ECDSED-2023 Conference Chair)
Head, Department of Journalism and Advertising,
State University of Trade and Economics, Ukraine, Europe.

Prof. Yanina Lisun   (ECDSED-2023 Conference Convener/Co-ordinator)
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Towards organizational alignment of the Advanced Passenger Information System in the Philippines

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Abstract: *The Bureau of Immigration (BI) will be implementing the Advanced Passenger Information System (APIS) for border control management in the Philippines. This study aims to assess the Bureau's organizational alignment in adopting, implementing, and establishing the internationally standardized passenger profiling connectivity mechanism. The study aimed to acquire baseline data from the implementation plan of the passenger information system and conduct organizational alignment assessment together with technical experts and implementors of the system. Using McKinsey's 7S framework, the study provides a comprehensive analysis of how different organizational elements, such as strategy, structure, systems, shared values, style, staff, and skills, align and contribute to the overall effectiveness and efficiency of the organization. The results showed that the overall implementation of the System is moderately high as well as the level of effectiveness (x=3.29, SD=0.756). Overall, the respondents rated the status of APIS implementation in the country as moderately high (x = 3.33, SD=0.621). The data that emerged from this study assessed the readiness of the Bureau of Immigration to adopt APIS and provisions on the delivery of government services through the response of the key informants and the responses of the respondents from staff and personnel of the Bureau. The findings will contribute to existing literature on organizational alignment and its impact on organizational performance, while emphasizing the importance of evaluation and assessment in ensuring the success of policies and programs. Therefore, there is a need to explore and assess the organizational alignment of BI in effectively implementing APIS, which is crucial for enhancing border security and ensuring speedy access to accurate data, efficient record management, real-time transactions, and overall safety and security without compromising the country's economy.*

1. INTRODUCTION:

[International Travel]
Before passengers board an aircraft for international destinations, airlines send passenger information to destination border control authorities in advance for security purposes. In the Philippines, the Bureau of Immigration (BI) is responsible for regulating the entry and admission of individuals into the country. However, the current manual document submission procedure used by the BI is outdated and ineffective.

[Executive Order 122]

To address these issues, Executive Order 122, also known as "Strengthening Border Control through the Adoption and Implementation of the Advance Passenger Information System (APIS)," was signed by the Philippine President on December 15, 2020. This executive order mandated the establishment of an electronic system for border control administration in line with international standards.

[APIS and its Benefits]

APIS is a widely used electronic data interchange system that enables airlines to securely transmit passenger information to a country. Currently, fifty countries use this system, including several in the Asia-Pacific region. APIS enhances security in commercial air and maritime environments. Its benefits include reduced waiting time for legitimate travelers, improved record management, and efficient data transmission.

2. LITERATURE REVIEW:

[Strengthening Border Control through the Adoption and Implementation of the Advanced Passengers Information System]

The introduction of the APIS by the United States of America to increase security levels was adopted by many countries. Furthermore, international organizations such as the World Customs Organization (WCO), the International Air Transport Association (IATA), and the International Civil Aviation Organization (ICAO) have come up with some standards in the facilitation of internationally cooperated implementation of this system (IATA, 2014; Lee, 2016; Tirman 2004).

In the Asia Pacific region, the government of Taiwan, Singapore, Japan, and Korea adopted the U.S. APIS framework in their respective immigration offices. The Philippines wants to join also to harbor this security border control program via Executive Order 122, ordering the Bureau of Immigration to facilitate its border control for passengers using APIS.

The said policy reiterated the calls of the Chicago and Kyoto Conventions of which the Philippines was a signatory. However, the adoption or establishment of the country's border control program using APIS has not been fully implemented after issuance of the said EO in 2020.

[BI APOC]

In consonance with the requirements of EO122 and its Implementing Rules and Regulations (IRR), the Immigration Commissioner signed Immigration Administrative Order No JHM-2022-001 entitled "Creation of Advance Passenger Information System (APIS) Operations Center (APOC) in the Bureau of Immigration, Defining Its Functions, Duties, and Organizational Structure, and for Other Purposes" it describes the establishment of the BI-APOC. The APIS Operations Center is accountable for managing Advance Passenger Information (API) and potentially Passenger Name Record (PNR) data, conducting security vetting of passengers, coordinating with law enforcement, ensuring commercial carriers' compliance, and upholding data privacy regulations.

[ORGANIZATIONAL ALIGNMENT FRAMEWORK]

It would identify aspects in the operation that need to be improved and/or ensured available by using the McKinsey 7-S Framework developed by Tom Peters and Robert Waterman to guarantee the efficient and effective rollout of the APIS. The McKinsey Framework is used to assess the effects of future changes and to align processes by categorizing the seven project elements and determining how they affect the entire organization (Demir & Kocaoglu, 2019).

It can aid in improving performance and determining the best way to put a proposed strategy into action. The framework can also be used to examine the likely effects of future changes in the organization and identify an organization's ability to successfully implement changes. The framework identified seven internal elements of an organization that need to align for it to improve performance or manage change in organizations by ensuring that everyone works in harmony. The seven elements need to balance and reinforce each other for an organization to perform well.
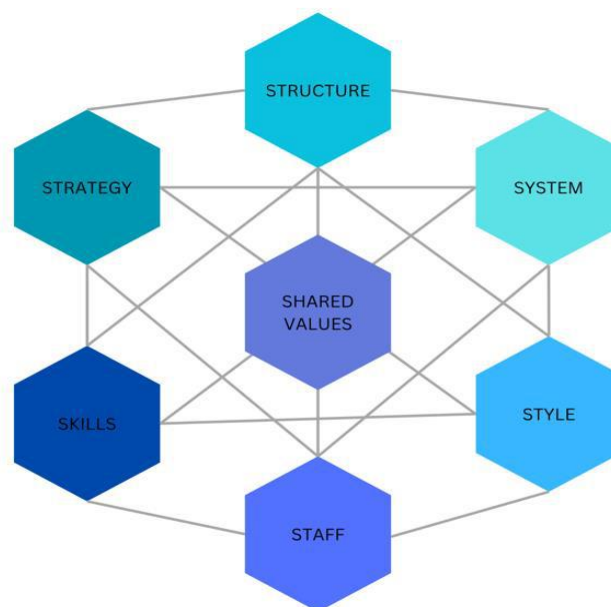
Figure 1: *The figure shows how the elements are interconnected and dependent with each other, and how a change in one affects all the others.*

3. RESEARCH OBJECTIVES:

[Purpose of the Study]
Evaluate the organizational alignment of the Bureau of Immigration in adopting, implementing, and establishing the internationally standardized Advanced Passenger Information System in the Philippines and recommend solutions toward effective roll-out.

[Significance of the Study]
This study holds significance for nation building, national security, and improving government agencies and programs. By examining the BI's compliance with Executive Order No. 122 and its organizational alignment, we can identify areas for improvement in passenger data collection techniques.

4. RESEARCH METHOD:

The findings of a **Mixed-Methods Sequential Explanatory** Design were utilized to gain a better understanding of the Bureau's organizational alignment in order to offer useful research data. The said design is defined by a multi-phased process that starts with quantitative survey data collecting and analysis phase, followed by a qualitative document and interview data collection and analysis phase, and a final phase of data integration or linking from the two independent strands of data (Creswell et al. 2003).

Respondents are chosen via purposive sampling under non-probability sampling. Purposive sampling techniques have also been referred to as purposeful sampling or "qualitative sampling," techniques involve selecting certain units or cases "based on a specific purpose rather than randomly" (Tasbakkori, A., & Teddlie, C., 2003), (Patton, 1990). All of the participants will be from the Bureau of Immigration. The respondents are deliberately selected based on their experience and knowledge of the operations of passenger profiling.

5. DISCUSSIONS AND ANALYSES:

The fundamental focus is to assess how the Bureau of Immigration implements Executive Order 122, which directs the Bureau of Immigration to use the international APIS architecture to facilitate border control for travelers. Furthermore, the researcher shares the perspectives and experiences of the BI's staff and personnel in order to shed light on the challenges surrounding the bureau's preparation to adopt the APIS. In answer to the research questions, the assessment is divided into six (6) sections, namely:

1. **Demographic Profile of the Respondents**

Table 1: Respondents' Demographics

Demographics	Frequency	Percentage (%)
Length of Service		
6 – 12 months	27	27.0
1 – 5 years	27	27.0
Over 5 years	46	46.0
Current Terminal Assignment		
Ninoy Aquino International Airport	37	37.0
Mactan-Cebu International Airport	23	23.0
Clark International Airport	24	24.0
Kalibo International Airport	6	6.0
Bohol-Panglao International Airport	5	5.0
Davao International Airport	5	5.0
Division		
International Port of Entry and Exit	57	57.0
Management Information System Division	21	21.0
Intelligence Division	20	20.0
Other	2	2.0

As shown in Table 1, almost half of the respondents are tenured employees of the Bureau of Immigration with over 5 years of service which implies that majority of the research participants are already within the bureau before the introduction of APIS. Therefore, only those with less than a year of tenure were hired when the standards of implementation are already in place. These results assume that almost three-fourths of the respondents have strong orientation and knowledge of the system at the time of study.

In terms of assignment, more than one-third (37%) of the respondents are working at the Ninoy Aquino International Airport. This data strengthens the validity of the responses gathered since the airport is the center of the APIS operation. Almost half of the respondents came from the two next biggest airports in the country – the Clark International Airport (24%) and Mactan Cebu International Airport (23%), respectively.

In terms of division, 57% are from the International Port of Entry and Exit Division and the others are from the Management Information System Division (21%) and Intelligence Division (20%). The distribution is quite ideal since the APIS frontline implementers are from IPEE and the records keeper and system maintenance personnel are from the MISD. The Intelligence Division provides the auxiliary support services.

2. **The current status of Advance Passenger Information System (APIS) implementation in the Philippines**

Table 2: Respondents' Assessment on the Current Status APIS Implementation in the Philippines

Indicators	Mean	SD	Interpretation
Overall progress of APIS implementation	3.35	0.757	Moderately High
Effectiveness of the factors influencing APIS implementation	3.29	0.756	Moderately High
Feasibility of the implementation of the ongoing strategies in the Philippine context	3.36	0.798	Moderately High
Composite Mean	**3.33**	**0.621**	**Moderately High**

The respondents assessed the overall progress of the APIS implementation in the country and its effectiveness of the factors influencing the implementation. As shown in Table 4, the survey participants claimed that the overall implementation of the system is moderately high (x=3.35, SD=0.757) as well as the level of effectiveness (x=3.29, SD=0.756). These results imply that there is still a big room for improvement. As a matter of fact, the respondents generally claimed that they have yet to concretize the framework for the effective implementation of the system.

It has been three years since the adoption of the system was put into law but there has not been sufficient evidence that such system was effectively implemented.

On the feasibility of the implementation of the ongoing strategies, the assessment result also revealed a moderately high result (x=3.36, SD=0.798). Similar to the first two indicators, there respondents have yet to see concrete pieces of evidence for them to claim that the current strategies adopted by the country would lead to a highly feasible strategy.

Overall, the respondents rated the status of APIS implementation in the country as moderately high (x=3.33, SD=0.621). The responses of the research participants are coherent as shown by the standard deviation values.

3. **The extent of implementation of APIS in alignment with the expected guidelines and requirements in terms of Shared Values, Strategy, Style, Structure, Systems, Staff and Skills**

    Table 3: Alignment of APIS Implementation with the Standard Guidelines and Requirements

Elements	Mean	SD	Interpretation
Shared Values	3.22	0.733	Moderate Alignment
Strategy	3.31	0.662	Moderate Alignment
Style	3.43	0.655	High Alignment
Structure	3.39	0.650	Moderate Alignment
Systems	3.34	0.699	Moderate Alignment
Staff	3.35	0.687	Moderate Alignment
Skills	3.28	0.697	Moderate Alignment
Composite Mean	**3.33**	**0.467**	**Moderate Alignment**

The alignment of APIS implementation with the standard guidelines and requirements was determined using the 7S framework of McKinsey. Of these seven elements, the respondents assessed the Style with the highest mean rating of 3.43 and is the only element identified with "high alignment." The respondents declared that one possible reason for this high assessment is the openness of the administration to suggestions from the grassroots and their consultative style of management involving all members of the organization.

All other elements were rated "moderately aligned" with mean ratings ranging from 3.22 for Shared Values to 3.39 for Structure.

4. **The extent of synergy attained in the organizational alignment of APIS in terms of Shared Values, Strategy, Style, Structure, Systems, Staff and Skills.**

Table 4: Extent of Synergy Achieved in the Bureau of Immigration's Organizational Alignment in Implementing APIS

Elements	Mean	SD	Interpretation
Shared Values	3.36	0.674	Moderate Synergy
Strategy	3.35	0.716	Moderate Synergy
Style	3.44	0.686	High Synergy
Structure	3.41	0.683	High Synergy
Systems	3.43	0.685	High Synergy
Staff	3.47	0.703	High Synergy
Skills	3.27	0.723	Moderate Synergy
Composite Mean	**3.39**	**0.494**	**Moderate Synergy**

As to the extent of achieved synergy in the Bureau of Immigration's organizational alignment in implementing APIS, the respondents have given four elements with "high synergy" assessments. These elements include Staff (x=3.47, SD=0.703), Style (x=3.44, SD=0.686), Systems (x=3.43, SD=0.685), and Structure (x=3.41, SD=0.683), On Staff being rated the highest mean, the respondents claim that though there is lack of manpower, the information dissemination among the members of the organization is strong. Meaning, personnel are well-informed of the directions of the organization in so far as APIS implementation is concerned.

The results show that the the element with the lowest mean is the "Skills" (x=3.27, SD=0.723). This result is in consonance with the respondents' perceptions on the lack of training provisions for everyone involved in the APIS implementation.

5. **The extent of synergy achieved in the alignment of APIS across different airports in the Philippines in terms of Shared Values, Strategy, Style, Structure, Systems, Staff and Skills**

Table 5: Extent of Synergy Achieved in the Alignment of APIS Implementation Across Airports

Elements	Mean	SD	Interpretation
Shared Values	3.31	0.761	Moderate Synergy
Strategy	3.30	0.732	Moderate Synergy
Style	3.33	0.682	Moderate Synergy
Structure	3.40	0.667	Moderate Synergy
Systems	3.29	0.743	Moderate Synergy
Staff	3.28	0.740	Moderate Synergy
Skills	3.33	0.667	Moderate Synergy
Composite Mean	**3.32**	**0.524**	**Moderate Synergy**

For the extent of achieved synergy, all seven elements were given the ratings "moderate synergy" with Structure being the highest (x=3.40, SD=0.667) and Staff being the lowest (x=3.28, SD=0.740). In terms of structure, the working groups across airports follow the UN model of organizational structure and this somehow explains the result. On the other hand, the lowest index for the faculty may reflect the lack of trained manpower to implement the APIS and the lack of training of those who are in the position to implement the system. This is one aspect that needs to be given utmost attention as highly qualified manpower is integral in the success of any operation.

6. Challenges faced by APIS implementation in the Philippines.

During the consolidation phase of data from document analysis, the survey, and the tele-interview, the following challenges surfaced in the implementation of the APIS program in the Bureau of Immigration:

- **Weak IT Infrastructure** - currently, the Bureau does not have a dedicated server for APIS and the same time it does not have a system. Currently, the United Nations (UN) has the infrastructure, however, when the Bureau of Immigration received the guidelines stipulated in the EO, the Bureau just started making a dry run and training for implementation of the APIS. According to coordinator for IT Working Group and the focal person for the Operations Working Group, *"Wala tayong system, test environment lang pero merong dinonate ang UN na puwede nating gamitin for three years" [We don't have a system, just the test environment that UN donated, we can use it for three years]*. Further, when asked about available servers, the coordinator for IT Working Group said that "we will temporarily borrow from DICT". On the other hand, the focal person for the Operation Working Group said that "it will be included in the GAA procurement"

- **Difficulty in cascading information and or decision making** - Working Groups' leaders assigned in the implementation of the APIS program comes from different government agencies. According to MCIA Intelligence Unit Head, *"mas magulo, iba't ibang mandate" [more confusing, they have different mandates]*. However, based on the statement of the Focal person for Operation Working Group, "This is a model given by the UN". Moreover, another personnel, the Coordinator of Transport Working Group agrees with the statement of the Focal Person for Operation Working Group. She said that "I think so! Hands on, *tama naman ang mga inilagay na tao [the people assigned are capable], nagko-cordinate naman [they coordinate] internally sa [on] concerns and requirements*".

- **Legal Basis** - The EO mandates the collection of API data only, however the IRR contains collection of PNR data as well that include data gathered from ticket purchase (credit card information for booking, payment details, frequent flyer numbers etc.) According to the Coordinator for the Transport Working Group, "There is a need to amend" and currently working on its amendments and "there is an on-going move to revise the existing EO or craft a new one".

- **<u>Lack of Understanding of the APIS Program on the part of the implementers</u>** - They cannot see the importance since the APIS program is still young and currently it is not yet in the information dissemination pace. According to the MCIA Terminal Head Supervisor, "I don't think it is necessary, if you ask them now, you'll get impressions only. The National Operations Center first need to know everything, form a TWG and study. Orient the implementors, that's where you ask for suggestion." However, the Intelligence Unite Head, said otherwise. She even gives an example, for the IATF that the said agency has different implementers and policy makers. She said, *"iba ang implementor, iba ang nagisip [the implementors are different from the policy makers],* no consultation at all. There is a need a consultation as we are the end users."

- **<u>Lack of Dedicated Personnel</u>** - The personnel assigned in the implementation of the APIS are not really working full time in the APIS section. As a matter of fact, workload in the APIS section is just addition to the personnel's workload. According to the focal person of the Operation Working Group, "…the challenge is that people assigned to APOC are not dedicated only for APOC, in addition only."

6. FINDINGS:

After the interpretation of data, the following findings were drawn, this research found that the implementation of the APIS program in the Bureau is still young and a new concept since there has been many weaknesses and challenges since the Bureau of Immigration is used to manual process of passenger profiling utilized by its officers at International Ports of Entry and Exit. However, the Bureau of Immigration gradually complied with the provisions stated in the EO122.

On the organizational alignment on the implementation of the Advanced Passenger Information System of the Bureau of Immigration, the research found that it is **moderately high** which can be interpreted that the operation can still be improved by continuously using McKinsey's 7S framework. The respondents' answers were **not polarized**. The identified disparity was noted for the various levels of implementations whereby those at NAIA are more aware or knowledgeable on the different facets of APIS implementations.

Regarding the requirements set forth by international organizations, and national legislations on implementing APIS, the Bureau has shown that it has **complied and currently improves on its further compliance** to the guidelines set forth by those policies.

In terms of the implementation roadmap, the Bureau has shown **positive progress** as it starts to continue with the implementation roadmap and include considerations, observations, and recommendations from all parties involved.

7. CONCLUSION:

Although the operational readiness of the implementation of APIS program of the Bureau of Immigration is not extremely high, this study shows a promising result since the result of the study is **Moderately High**. Being in the middle of the scale, this result implicates that the preparedness level is somewhat compromising. While some are prepared to implement the

system, some others have reservations. This is also evidenced by the standard deviation which shows a high dispersion in responses.

Based on the findings, proper communication, cascading of information and decision is key in all aspects from skills to core values. Ultimately with the guidance of UN, active participation of group leaders and the leadership of the Bureau of Immigration, APIS implementation can be possible.

8. RECOMMENDATIONS:

On the absence of IT Infrastructure, the researcher pointed out, that the respondents look into implementing the following solutions: (1) The APIS server to be temporarily borrowed from the DICT, but for the long run, include procurement of IT servers to the annual budget; (2) The APIS system to be donated by the UN. The UN will allow the Philippine government through the Bureau of Immigration to use it for free for a certain period of time without additional cost from the government. Moreover, as of the moment, the UN already provided a test environment of their GoTravel system for training purposes.

The structure of the present Working Groups should be based on the Four Pillars of the Countering Terrorist (CT) Travel Programme of the United Nations Office of Counter-Terrorism (UNOCT) namely: Legislation, Operational, Transport industry, and Technical. This is an ideal setup, as this encompasses the totality of aspects needed to prepare for the implementation of the APIS.

Further, based also on the CT Travel Programme of the UNOCT, there is a need to institutionalize a Passenger Information Unit. This unit shall be the central coordinating agency that handles API and PNR data. In the Philippines, this is the BI APIS Operations Center.

Regarding the **legal basis on the data collection**, the researcher found that there is an ongoing move to revise the existing EO or craft a new one.

For the problem on the **lack of understanding of the APIS Program** on the part of the implementers, the Bureau of Immigration has started its training/workshop in coordination with the United Nations (UN). According to Coordinator of Transport Working Group, "…there are trainings of officers and trainings about the system and the support is there."

The trainings and workshops are sponsored by the UN Office of Counter-Terrorism. The Countering Terrorists (CT) Travel Programme is set to build the country's capability to prevent, detect, investigate, and prosecute terrorist offenses and serious crimes, including related to travel, by: Collecting and analyzing travel information such as passenger data, namely Advance Passenger Information (API) and Passenger Name Records (PNR); Improving the use of international databases with known and suspected terrorists and criminals, such as INTERPOL; and, Enhancing international information exchange in line with Security Council Resolutions.

On the lack of dedicated personnel in the Bureau of Immigration, the Bureau is highly encouraged to assess and create additional permanent plantilla positions for the purposes of the BI APIS Operations Center.

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Pedagogical Challenges before English teachers of Bengali Medium Schools – A Phenomenological study

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Abstract : *In the face of the changing socio-economic values, teachers, today, face challenges of a different kind. It is no more about stubborn students refusing to submit homework or to respond in class. Pedagogical challenges for teachers, today, are multi-faceted and posed by almost all stakeholders of the education system; more so if it is English as second language to be taught in an, otherwise, vernacular medium school, impregnated with ethnic prejudice. In an endeavor to explore the challenges, a qualitative research was conducted where 30 teachers, teaching English as second language in Bengali Medium schools of West Bengal, were interviewed and 30 first-hand classroom observations were made. The study was given a descriptive research design with a phenomenological approach to its data collection and analysis methods. The findings were split into four categories, namely (1) socio-economic pedagogical challenges, (2) psychological pedagogical challenges, (3) challenges due to school authority and (4) challenges due to West Bengal Secondary Board of Education. These insurmountable hurdles, placed by school authority, parents, school boards and, often, by students, had reduced teachers' pedagogical status to a point of helplessness where the learning objectives for language teaching could not be incorporated into their, otherwise, perfunctory lesson plans. Despite having pedagogical skills, all that they could do was to walk into the class with the single objective to complete the syllabus and to conduct formal unitary tests, made redundant by "no pass/fail" criteria. It sounds cruel but, for most, it was the only way to survive in an, otherwise, pedagogically infertile environment where even the students view English, as shared by a participant-teacher, to be "just a subject to pass!"*

Key Words: *English as second language teaching, pedagogical challenges, socio-economic pedagogical challenges, psychological pedagogical challenges, school authority, school education board, Bengali medium schools.*

1. INTRODUCTION :

In the face of the changing socio-economic values, teachers, today, face challenges of a different kind. It is no more about stubborn students refusing to submit homework or to respond in class. Pedagogical challenges for teachers, today, are multi-faceted and posed by almost all stakeholders of the education system; more so if it is English as second language to be taught in an, otherwise, vernacular medium school, impregnated with ethnic prejudice. In an endeavor to explore the challenges, a qualitative research was conducted, as follows.

1.1 Operational Definition

Pedagogical challenges, in the present study, refer to the challenges and problems that participant-teachers faced during classroom teaching practices of English as second language. These challenges were due to all stakeholders of school education system, viz. students, parents, school authority, faculty members and school board.

1.2. Research Question

What are the pedagogical challenges before teachers, teaching English in Bengali Medium schools of West Bengal?

2. Research Objectives :

- To study teachers' socio-pedagogical challenges.
- To study teachers' psychological pedagogical challenges.
- To study pedagogical challenges, posed by school authorities.
- To study pedagogical challenges, posed by West Bengal School Boards.

3. Research Design:

The study was given a descriptive research design with a phenomenological approach to its data collection and analysis methods, as follows:

- **Data Collection:**

For data collection a semi-structured interview schedule was standardized through a) Intra-coder Reliability Test, b) Pilot study for Content Validity.20 Bengali medium and 10 English medium Upper Primary English language Teachers were interviewed as per interview protocols. Purposive sampling technique was used for data sampling.

- **Qualitative Content Analysis:**

Interview data, recorded with due permission from the participant-teachers, was transcribed. The transcription was, next, subjected to two coding cycles. In the 1st coding cycle, Descriptive & In vivo coding techniques were used to draw inductive primary codes. In the 2nd coding cycle, by means of Pattern coding technique, the primary codes were grouped into four categories, as per the four research objectives. The categories were, next, interpreted as the findings of the study which were reviewed in the light of secondary data to prepare the research answers, as follows:

4. Research Answers :

Interview data was inductively coded to analyze the pedagogical challenges under four categories, as follows. In the following discourse, secondary data has been provided and participant-teachers words have been put in italics and within quotation marks in order to ensure objectivity and authenticity.

Category 1 - Socio-economic challenges

It refers to the pedagogical challenges, teachers faced due to students' poor socio-economic problems. The problems, hindering language learning, have been given below:

a) Declining value for education

Almost all participant-teachers shared how, being First generation learners, students often did not value education at all –*"We have students who come only for midday meals, Kannyashree is another reason for them to come to school".*

b) Unstable economic condition

All of them agreed that first generation learners did not have a playful childhood. A participant shared how some students attended school not because they liked school but "*if they stay at home…they have to work… to raise their younger siblings.*"

c) Illiterate Parents

Participants were unanimous in observing parents' illiteracy as a hindrance, as one of them shared, *"Support of the Guardian is not there… The two wheels – one is the guardian and another is the teacher – functioning of the two wheels are very much required",*

d) Note-feeding private tuition

More than 50% believed that private tuitions' readymade exam-oriented notes were the cause for poor attendance. However, 4 participants observed how school teachers also provided notes but *"Free stuffs are rarely valued".*

e) Early monetary engagements

Poverty was not always the cause for students' decline in educational values. A visit to a school located in an industrial belt where the tailoring business was flourishing, showed how both girls' and boys' early monetary engagements stole the very purpose of education. Attending school became useless when they could be monetarily independent even before proper maturity for independent existence.

Category 2 - Psychological Challenges

It refers to the pedagogical challenges; teachers were facing during classroom teachings, due to certain fears and anxieties, students experienced during English language learning:

a) Absent Parents

Almost 90% participants observed how *"With both the parents out for work, their (students') home hardly has the environment to study".* Another teacher further added "*So, now the child, left to himself, does whatever he wants and honestly, because of their financial constraints, their food habits, general standards of living are pretty much average. I don't blame the child for not attending the class for being inactive. They suffer from malnutrition, it shows, it is visible. And so how can I expect that child to be very attentive in class*? *And even if they are getting the right amount of nutrition, as both the parents are absent, there is no one to care. I mean, if my mother had never told me to wake up and sit down and study, I don't think I could have been disciplined.*" One of the participants critically observes, "*For them coming to school is a burden".* It psychologically affects teachers too – "*We have to keep our cool else they will segregate themselves from us and believe that "Mame, won't understand my problem",* as shared by another.

b) Foreign Language Anxiety

More than 50% interviewed participants shared how students suffer Foreign Language Anxiety or 'Anglophobia' (Jeyaraj2017; Aydin 2008; Trotta 2010 & Cutrone 2009). One teacher however observed it less in urban students – "*in a metropolitan city their exposure is huge because they have billboards, at least they are hearing a good amount of English, they are going to shopping malls, roadside interactions."*

c) Peer Pressure

Peer pressure was experienced by both teachers and students. Students hesitated speaking in English to avoid ridiculed by class mates (Clara, 2018). Lack of "social environment" for English-speaking (Gul & Aziz, 2015) had made teacher avoid English outside English classes. In this context, one of the teachers shared, "*We cannot freely speak in English. Speaking English in public is a sheer show-off!"*

d) Adolescent Period

Bengali and English Medium teachers both shared how students' non-responsiveness is often due to their adolescent period (Clara, 2018) -*"The adolescent period sets in – a marked change is observed in students of Classes 7, 8 & 9",* they develop *"the potential to feel insults…they tend to shell themselves from the fear of being ridiculed by classmates".* An English Medium teacher makes a similar observation: *"It is more fun to teach English in the lower classes… From class VII they hardly have any interest towards learning – even if I am to share stories, they do not listen as eagerly as the V-VI does – their hearts seem to have changed".*

Category 3 - Challenges due to School Authority

It refers to the pedagogical challenges; teachers were facing during classroom teachings, due to school authority. The problems, hindering language learning, have been given below:

a) Sub-optimal teacher-student ratio

Almost all the participants observed how crammed classes make class management difficult (Schwartz, Schmitt & Lose, 2012). However, one participant believed that *"Class population is not the problem. It is good that more and more students are coming to learn…they need to increase the no. of teachers…"*and split classes into sections.

b) Inadequate human resource

Participants unanimously observed how *"…for the few Assistant Teachers it is not possible to stretch from Classes V-XII, it is very difficult for us to continue with our own projects."* (Okongo, *et. al.,* 2015)

c) Faulty Timetables

Around 10% teachers shared how English teachers cannot undertake long-term projects due to faulty time-table, as one of them shared*". What happens is the students, I prepare in Class V, again faces me in Class VIII – I don't have any class with them in Classes VI & VII – other English teachers do teach but their ways don't match mine - the continuity is lost.".*Besides, there are more than one English teacher delivering grammar lessons to the same class. With multiple English teachers, the class is now facing more than one teaching methodology (Nguyen *et. al.* 2014).

d) Rush to complete syllabus

Participants unanimously agree one of the dominant challenges is the need to complete the syllabus – *"It's true that completing the syllabus becomes meaningless where there is no exam. But who are we to decide? The pressure to complete the syllabus comes from higher authorities".*

e) Inadequate infrastructure

More than 50% faced inadequate infrastructural facilities (Nguyen *et. al.* 2014). For instance, no language laboratory (Al-Otaibi, 2023) or commodious classrooms – *"… our classrooms are small – if someday all the 100-120 students turn up, it becomes impossible to take class – half the time is wasted in class management".*

Category 4 - Challenges due to West Bengal Board of Secondary Education

It refers to the pedagogical challenges; teachers were facing due to West Bengal Board of Secondary Education. The problems, hindering language learning, have been given below:

a) Primary schools are non-functional

Participants were unanimous about how primary school students – *"when they come to Class V, they don't have the basic ability to read or even recognize alphabets… what I could only do is to explain the story in Bengali".*

b) *Syllabus is "simply too huge!"*

Participants were unanimous about how *"The syllabus committee… don't understand the ground reality…If the no. of chapters is reduced to 10, then it is good but 13 chapters is a really a problem."*

c) *"Class V text is above standard"*

Participants unanimously found *"Class V text is even tougher than Class X text – how am I to explain the concepts of "Social Reform" and "cultural heritage" to a Class V student."*

d) *Flawed curriculum design*

One participant found the ESL curriculum design to be at flaw - *"the whole curriculum for ESL is much inverted – students are first taught grammar (without having any language input) – a fear psychosis sets in their minds…"*

e) *Non-detention policy*

Around 70% participants held the non-detention policy as a pedagogical challenge (Ahmad, *et. al.* 2016). One of the teachers complained, *"Students ask questions like, "Sir, what's the use of studying? Anyways, I am not failing – all that I want is the Class VIII certificate!"* The policy has, further, caused mass migration of good quality students to private schools. A participant humorously observes, *"The scenario is just like Govt. & private hospitals – we know how govt. hospitals have good doctors and yet people prefer private nursing homes".*

5. Conclusion:

In a nutshell, "The English proficiency standard of students across India is not homogeneous…the causes are not simply pedagogical, but are embedded within the highly complex social, economic and personal matrices. These matrices are of immense importance in the learning process of a student. When the home culture is widely incompatible to school culture, students face difficulties in learning…(Hence), at one end of the spectrum there are English Learners (ELs) who are fluent, at the other end there are students with little or no proficiency in the language and in between lay students with different shades of limited proficiency. The ELs with various shades of limited proficiency form the majority of the student population." The present study, locates "social, economic and personal" challenges being faced by both teacher and students, responsible for the "different shades of limited proficiency" (Samagra Shiksha Abhijan, 2020). Interview data revealed that both English and Bengali medium teachers followed Grammar Translation Method as it is effective for second language learning. Yet the former did better than the latter. The credit, here, went mostly to their favorable learning environment (Dwivedi, 2000) and not always to teachers who, unlike their Bengali medium counterparts, did not face pedagogical challenges.

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The Philosophical Doctrine of Guru Nanak and Saint Augustine

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1. Introduction: In the first section there is the interpretation of the major compositions of Guru Nanak and the Religious Discourse. Guru Nanak's views have universal import, significance and reach. In these compositions we have discussed the conceptual constructs which include His cosmological vision, His ideas about the destiny of man. The Second part describes the philosophical meditations of Saint Augustine. Our interest in the philosophy of Saint Augustine is due to the fact that both in Saint Augustine and Guru Nanak, we deal with the religious discourse. There is obviously no historical linkage. Saint Augustine belonged to the fourth century, Guru Nanak to the fifteenth. The comparison or correspondence between these two thinkers is due to the similarity of themes, the conceptual and cosmic vision that they represent. A comparison of this order is generally called typological as compared to historical in the ordinary sense of the term.

2. Need of the Study: This Study aims to analyses the important concepts of Harmony and Discord, Truth and Reason, Reminiscence. To achieve this objective, the researcher collected and analyzed the data with three main theoretical propositions around the aspects of Cosmological Semiotics in the East and West. The first important step is that of harmony and discord. The second concentrates on the notion of Truth and Reminiscence in the writings of Saint Augustine in the fourth century. The third step in this direction is theology of Man and God a comparative study with St. Augustine and Guru Nanak. The study would provide useful insights into the human beings psychological and intellectual behaviors. These inputs would help understand man's overall attitude towards life and theology. Further, the findings would be fruitful to the human beings in formulating appropriate spiritual and religious policies. Thus increasing the efficiency to the life.

3. Objectives of the Study: The objective that a researcher belonging to Eastern tradition should get an understandable impression of Western tradition can be achieved only if both the traditions can be presented according to a generally common plan and common concepts. The present study undertakes to do this by introducing the Indian (Guru Nanak) and western (St. Augustine) philosophies. The objectives of the present study are: -

- To analyze the impact of Harmony and Discord on the human beings.
- The objective of this study is detailed analysis about the question of the existence of God and the importance of God for human beings.
- To evaluate the concept of Truth and Reason with the primary notions of Faith and logic.

- To ascertain that how the discourse of harmony and balance could be achieved by a proper correlation of Faith and Reason, further how it leads to re-integration with the Almighty God.
- To examine the correlation between Indian (Guru Nanak) and Western (St. Agustine) Philosophical thoughts of theology, beliefs and Social norms.

4. Research Gap & Methodology: Through the review of literature, it was observed that several studies have been across the globe in the domain of east and west philosophical theories respectively. Various researchers have conducted research on western as well as Indian belief and intentions in their respective philosophical areas. However, to the best of our knowledge, no such study has been conducted on Cosmological Semiotics with reference of Guru Nanak as well as St Augustine from Western traditions together. Therefore, this study tries to fulfill this gap and also study the effects of discord and disharmony on the condition of human life.

That is why, there is a real need now, however difficult and ambitious the task, to present both Guru Nanak and St. Augustine philosophers together, not merely their outstanding characteristics but their concepts and connections with life.

To analyze the data both semiological as well as philosophical techniques were applied. The research design for the present study covers both the primary and secondary data.

"Reviewing Guru Nanak's distinctive position, we notice that his life as a preacher of righteousness began with the statement, 'There is no Hindu and no Musalmān.' He went on to show that they were both false, and thus incurred the odium of both. He fearlessly attacked idolatry, and, if he did not rise to a high degree of spiritual enlightenment, we can only say that Christian truth had not been conveyed to him."

Guru Nanak's incisive mind and revolutionary transvaluation of values made him a link between yesterday and tomorrow of human destiny and a mediator between antagonistic cultures and civilizations. Guru Nanak repudiated the caste system and declared noble character rather than noble birth as the real test of human excellence. Human beings steeped in ignorance and superstition could not afford to be adventurous and this made them inert, fatalistic, passive, bigoted and alienated. This agitated the mind of Nanak especially when he visited the holy places of Hindus and Muslims. He regarded ignorance as the greatest sin and superstitions the gravest sacrilege.

In the first Pauri of Japji, Guru Nanak has rejected the ways of speculative thoughts that merely pay lip service. Life was real to Guru Nanak. The political, social and religious pressure on the common man was so great that he could not lead a life of mere thinking a lac of times nor could he lead a life merely by keeping silent where there was so much hypocrisy and oppression on all sides from top to bottom. On the social avarice or hunger could be satisfied as lust for woman, wealth, pursuit of gold, multi-motivated tricks shackles of desire, alluring beauty and "lakh sianpa" clever speculations could not finally succeed. But what was the way of truth? How could the way of falsehood be rent asunder? It is the only way of truth and leading human beings to God who is the creator of the whole universe.

Augustine was a memorable and persuasive preacher and promoter of Church in difficult political times whose work shaped medieval thought or western Christianity as no one else did.

For Augustine, it is not the case that the less good there is, the more evil it is. Good and evil are not related as positive and negative, so that a certain degree of evil may be defined as simply the absence of a certain degree of goodness. Something with only a low degree of goodness is not thereby automatically evil. It is evil only if it ought to have a higher degree of goodness and does not actually have it. To think otherwise, Augustine says, is like blaming the earth because it is not the heavens. Higher things ought to 'govern and rule' (have power over) lower ones.

Augustine regards 'evil' as injustice or disorder, when lower things have power over the higher, reversing their proper order. Evil then is not an entity on the hierarchy of reality, it is an arrangement of things on that hierarchy otherwise than they ought to be arranged. To ask how evil arises in the world is to ask how it comes about that lower things have power over higher ones.

St. Augustine was an active participant in his life. His book *The Confessions* is one of the most poignant and sincere autobiographies to date. He had seen life in all its colours. Because of his diverse and very rich life experiences, he could not look upon man as an object; rather he studied man from within. As in existentialism, Augustine also emphasizes the finitude of man. "St. Augustine is both an essentialist and an existentialist. He is known as an essentialist because essences and ideas of God play a major role in his philosophy. He is also an "existentialist lyricist of religious experience and formal theologian".

"God created the world, who or what is able to upset the order God has established? Augustine's answer is: Human beings do it. The world as God created it was, and remains, justly and properly arranged; he is not responsible for evil. On the contrary, human beings bear those responsibilities, since they are the ones who unjustly give lower things power over higher ones."

Like many other philosophers and religious thinkers, St. Augustine laid stress on individual responsibility, though he does this in the context of a universal metaphysics. According to the Encyclopedia of Philosophers and Religious Leaders, as bishop, Augustine articulated his major theological themes in controversies. Against the Manichaean, he asserted there was only one, good God who, although creator of all, was not responsible for evil, which arose from Adam's wilful disobedience.

5. Man and God for Guru Nanak and Saint Augustine:

Augustine advises man to 'know himself'. Man must become conscious about the fact that he is imperfect, dependent, helpless and alienated from God. This is a necessary requirement to escape from this predicament. But it is not possible without God's grace and the basis of faith.

Augustine had a clear anthro pological vision also. In his hierarchical classification of things, human being is a composition of two elements, soul and body. Initially, the two elements were in perfect harmony, but after humanity's fall, disharmony followed.

"Augustine defends the Christian doctrine that God created the world out of nothing." This is akin to another Greek thought that cosmos came out of chaos-'the formless void: a state of utter confusion and disorder'.

6. Harmony and Alienation :

It is in the context of the religious discourse that we explore the cosmological aspects in Guru Nanak. We also alluded to the theology in the work of the fourth century Christian theologian, Saint Augustine. There is a conceptual similarity between the two reflections. Guru Nanak's discourse is within the context of the Indian philosophical tradition. On the other hand, Augustine's reflections are strictly within the earlier Christian tradition even though they are heavily influenced by the neo-Platonic ideas of his times.

"Man is God's creature, made with a view to enjoying happiness in the vision of God. In this vision and loving union, man attains his definitive state of rest, all else is striving and tension, conscious or blind, groping toward this fulfillment. "Thou hast made us, and in making us turned us toward thyself (*fecisti nos ad te*) and *our hearts are restless until they rest in thee.* So runs a famous phrase at the beginning of the *Confessions.* Man's nature embraces a multitude of desires, impulses, and drives, some conscious and some not; all these are in fact, though we are not aware of it, implicitly desires for the fulfillment which is to be had in its entirety only in the beatific vision."

According to Augustine:

Our hearts are restless until they rest in Thee.

Compare Guru Nanak:

According to Guru Nanak:

ਆਸਾ ਮਹਲਾ ੧ ॥ ਆਖਾ ਜੀਵਾ ਵਿਸਰੈ ਮਰਿ ਜਾਉ ॥

In meditation, I resonate, in distraction, I wither away.

ਜੈ ਤਨਿ ਬਾਣੀ ਵਿਸਰਿ ਜਾਇ ॥ ਜਿਉ ਪਕਾ ਰੋਗੀ ਵਿਲਲਾਇ ॥੧॥

When the being is oblivious of the Divine Word, he is stuck with excruciating pains and cries in distress.

ਸਿਰੀਰਾਗੁ ਮਹਲਾ ੧ ॥ ਇਕੁ ਤਿਲੁ ਪਿਆਰਾ ਵੀਸਰੈ ਰੋਗੁ ਵਡਾ ਮਨ ਮਾਹਿ ॥ ਕਿਉ ਦਰਗਹ ਪਤਿ ਪਾਈਐ ਜਾ ਹਰਿ ਨ ਵਸੈ ਮਨ ਮਾਹਿ ॥ ਗੁਰਿ ਮਿਲਿਐ ਸੁਖੁ ਪਾਈਐ ਅਗਨਿ ਮਰੈ ਗੁਣ ਮਾਹਿ ॥੧॥ ਮਨ ਰੇ ਅਹਿਨਿਸਿ ਹਰਿ ਗੁਣ ਸਾਰਿ ॥ ਜਿਨ ਖਿਨੁ ਪਲੁ ਨਾਮੁ ਨ ਵੀਸਰੈ ਤੇ ਜਨ ਵਿਰਲੇ ਸੰਸਾਰਿ ॥੧॥ ਰਹਾਉ ॥

Guru Nanak's belief regarding the Supreme Being is that "I utter the Name of God, I live, if I forget it, I must die. Then how can I forget it." In meditation, I am blessed; in distraction, I wither away. So that one who regularly repeats or listens the Name of the Lord becomes pure and all sorrow, impurities and the dirt of ego flees away. Nanak says, by remembering God alienation and transgressions are destroyed. A moment's distraction, a moment's forgetfulness, leads to misery and misfortune, to the mind in distress. How can one be honored in His audience if the Creator does not dwell in one's heart? With the blessings of the Guru, there is peace of mind, the fire of passion is subdued, and the mind finds peace and grace. One should always meditate and reflect upon the Order of the Creator. Those who never forget their Creator are rare in this world. The sublime light of the Creator enlightens body and soul, brings divine union with one's Lord. In this divine union, there is no violence, no passion,

no lust, and no mental conflict. The final Emancipation can only be obtained when the Name reside in the heart of the devotee.

Man's nature is replete with desires, some good, and some bad. Some desires lead man to happiness and beatitude, some lead him to degeneration and destruction. For Augustine, man's "godwardness" is thus inscribed in his very nature. Augustine gives an example of weight. The heavy weight falls down, the light weight goes up. The good deeds of man, the love for righteousness are man's weight. It leads him to the right direction, to the love of God. A stone will fall if its support is removed, there is no question of its will. However, man is endowed with the faculty of will. If he wills to do good, to love and reflect, he will be pulled towards God. If he is engrossed in evil deeds, he will be estranged from the Creator. Hence, human beings have the option of choice and free will. Augustine argues that the word, love, covers the elementary forces, passions, emotions and inclinations of all kinds and on the other hand, it also covers freely chosen inclinations and voluntary preferences. To begin with, the conflicting desires and inclinations, desires, emotions, urges are neutral. But man being a rational creature is his own master. He is supposed to critically examine these passions and follow those which lead him to happiness and love and union with his Creator. When man is unable to control his passions, when he chooses to follow evil, he is estranged from his Creator. Augustine calls this state of the being as *alienatio* and describes it as a voluntary surrender to impulses which lead him to involuntary captivity.

Augustine believes that right love leads to righteous life. He is concerned with moral life in this world. He would have anthropological world charged with cosmological vision. He insists on the will of man. This is where the question of right or wrong choice is introduced. A right will is right love, says Augustine, and a perverse will is perverse love. Desire to possess, fear, passion, indulgence are all evil. They lead to evil love. Man's task is to order his inclinations and passions in such a way that his actions follow the divine order. Love itself is to be loved critically, says Augustine, so that what ought to be loved is rightly loved, and thereby we achieve virtue to live well. This rightly ordered love is the love of a sage. Augustine continues: a man lives righteously and in holiness if he has ordered love which prevents him from loving what is not to be loved. This order leads to harmony and union with the Creator. This is the right law, the right conduct. To quote Augustine: "This discipline is God's law itself, which, while always remaining in him fixed and unalterable, is transcribed into the souls of the wise, in such a manner that they know that their lives are the better and the more sublime in proportion to the degree of perfection of their contemplating it by their minds and keeping it in their lives. The realisation of this order is wisdom, and its attainment is a work of the mind in accordance with the eternal law. This law is God's sovereign reason."

This leads to Augustine's concept of *order* or *rational order* which in this context is divine order. For Augustine, the divine activity follows a rationality that is spiritual, that is inspired by the divine dictate. This notion of order is central to Augustine's thinking. This is obviously a neo-Platonic philosophy. It also includes the Christian concepts of suffering and pain. This world is not perfect. There is disorder and dis-organisation. There is a lack of harmony. However, all these miseries and natural evils can be surmounted by following the divine order. The divine order is not only perfect; it can bring harmony and peaceful co-existence in all things, material or spiritual. This is where the fundamental Christian concept of divine revelation in the form of Jesus Christ is very significant. Augustine is not a philosopher in the ordinary sense of the term. He does not simply rely on reason and logic, his basic anchor remains the divine intervention in the history of mankind.

The discourse on Truth is both religious and philosophical. In this context we have often referred to the Christian philosopher of the fourth century, Saint Augustine. Let us see how he reflects on this concept as presented by R. A. Markus:

"In a very real sense he has made knowledge of "eternal truths" a kind of empirical knowledge, superior to that derived from sense-experience only in that it is derived from a superior kind of experience, one accessible to the mind without the intermediary of the body, and not subject to the uncertainties and relativities to which sense-experience is subject."

The intellectual light emanates from the supreme form, that of the good, and illuminates both the inferior forms, thus rendering them intelligible; and the mind that understands them -- like the sun, itself supremely visible – makes other things visible by illuminating them. For Augustine, the forms are within the divine mind, and the intellectual light which renders them intelligible is a divine illumination within the human mind. Augustine speaks of this illumination in a number of different ways, as the mind's participation in the Word of God, as God's interior presence to the mind, as Christ dwelling in the human soul and teaching the mind from within.

"After enumerating a long list of things on which most of us would agree as good, he remarks: "In all these good things which I have enumerated or any others you may discover or think of, we could not say that one is better than another when we make a true judgment about them, unless there was imprinted upon us a concept of good itself *(nisi esset nobis impressa notio ipsius boni)*, according to which we approve things and prefer some to others." This impossibility of drawing any line between idea and judgment appears very clearly, for instance, in what Augustine says about our knowledge of the human mind. Yet, in the light of the eternal truth, we can say certain things universally true about the mind as such. We do not get such a general idea of the mind by generalising from our experience of individual minds, but we "perceive the inviolable truth, whence we define perfectly –as far as we are able – not what this or that man's mind is like, but what it ought to be in the light of the eternal truth."

7. Conclusion:

Guru Nanak's concept of *sach*, Truth, covers all aspects of the anthropological as well as cosmological universe, the Brahmand. It is the very basis of the Cosmic Order. It is conceptually opposed to falsehood, corruption, decadence, deception etc. Those who follow the cosmic order, who meditate and reflect upon the cosmic vision, who are in tune with the cosmic rhythm, they are integrated in the cosmological rhythm.

The basic theme in the religious discourse is the relation/non-relation of human beings with God, the Creator of the universe. This discourse takes different forms. For Augustine, an estranged or alienated being becomes avaricious, greedy, who follows his low instincts. Instead of love of God, there is the love for the worldly pleasures. Augustine had stated: the hearts are restless until they rest in Thee. (Confessions). For Guru Nanak, a moment's separation leads to misery and distress, to disease and decadence.

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Determination of SNR and SINAD for 8 bit ADC in time domain

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Abstract: *Dynamic testing using sine wave input based on histogram method is an important activity for characterization of an ADC.Estimation of signal to noise ratio in ADC have been carry out. An algorithm is proposed to estimate signal to noise ratio using histogram test. The effect of ENOB on SNR is studied by simulation (with software) to meet practical conditions. When no. of bit increases signal to noise ratio are also get increased.*

Keywords: *Effective number of bits (ENOB), Histogram technique, Signal to noise ratio (SNR), Quantization error.*

1. INTRODUCTION:

Various applications requires measurements using analog-to-digital based on the signal's dynamic range, the smallest change in a parameter that must be measured is the signal-to-noise ratio (SNR) & signal-to-noise & distortion ratio (SINAD). SNR is the ratio of the amplitude of the desired signal to the amplitude of the noise signals at a specified point in time.Sine wave with high purity is required for spectral testing [1-2], which is a major challenge, especially for on-chip test. Conversion from analog to digital is two steps process. First step is to make the time discrete (Sampling) and the second step is to make the amplitude discrete (Quantization) [3].The theoretical maximum SNR is the ratio of the full-scale analog input (RMS value) to the RMS quantization error (residual error). Signal-to-noise-and-distortion ratio (S/N+D, SINAD, or SNDR) is the ratio of the input signal amplitude to the rms sum of all other spectral components [4-5]. Spectral analysis of ADC is based on the exploitation of the Fourier transform of the digital samples acquired at output when pure sine wave is applied to input [6]. For an M-point FFT of a sine wave test, if the fundamental is in frequency bin m (with amplitude Am), the SNDR can be calculated from the FFT amplitudes [7]. Histogram test is most usefull, ideal theoretical minimum ADC noise is due to quantization error.

2. SNR PERFORMANCEPARAMETERS :

To enhance and calibration of signal-to-noise ratio many parameter are required, some of them are:
    (i) Oversample & Averaging

(ii)   Resolution
(iii)   Quantization Noise
(iv)   Effective Number of Bit
(v)   Throughput

2.1 Need of oversampling & averaging to increase SNR

Oversampling and averaging can be used to increase measurement resolution, eliminating the need to resists expensive, off-chip ADCs. It is done to accomplish for improvement in SNR and to increase the effective resolution (i.e., increase the effective number of bits of the ADC measurement). Both of these are really the same entities. For example, if we have a 8-bit ADC and want to generate codes with 10- bits of resolution, then we can use oversampling and averaging to get the same SNR of a 10-bit ADC.

2.2 Resolution Improvement
The theoretical limit of the SNR of an ADC measurement is based on the quantization noise. Because quantization error depends on the number of bits of resolution of the ADC [8], the best case SNR is calculated as a function of the *Effective Number of Bits.*

SNR (dB) = (6.02 * ENOB) + 1.76

2.3 Quantization Error
The distance between adjacent ADC codes determines the quantization error. Because the ADC will round to the nearest quantization level, or ADC code:

$\Delta = \frac{Vref}{2^N}$ where N is the number of bits in the ADCcode,Vref is the reference voltage.
The quantization error (*eq*) is:
$$e_q <= \frac{\Delta}{2}$$

2.4 Effective Number of Bits
Forgiven fixed noise power, we can calculate the required number of bits.
$\widehat{N} = -\frac{1}{2} \log(OSR)_2 - \frac{1}{2}\log(12)_2 - \frac{1}{2}\log(n_0^2)_2 + \log(vref)_2$

From equation we observe that each doubling of the sampling frequency will lower the in-band noise by 3 dB, and increase the resolution of the measurement by 1/2 bit.

3. ESTIMATION OF SNR & SINAD
For Estimation of best case SNR, the dynamic range of the input signal must match the reference voltage (Vref).
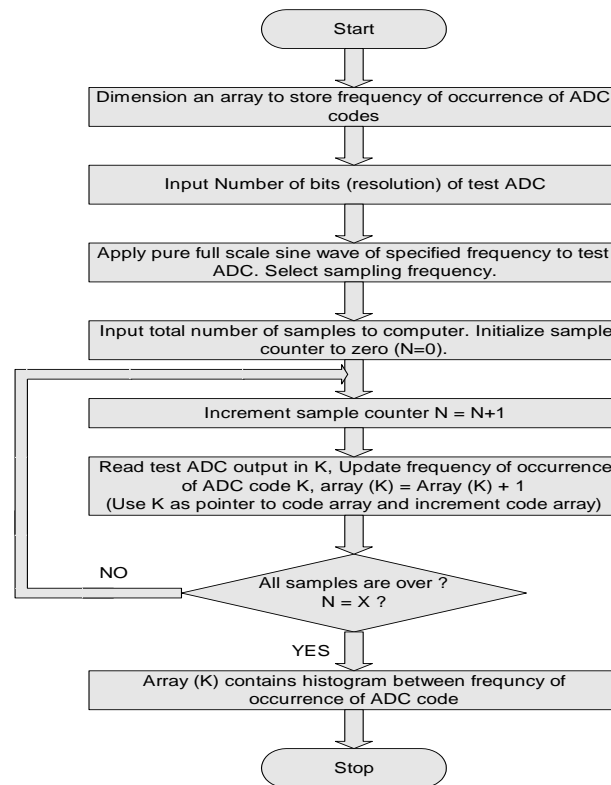
Fig. 3.1 Algorithm flow for estimation of SNR & SINAD

If we assume the best case input signal to be a full- scale sine wave, code transition level T[k] of N bit ADC is

$$\hat{T}[k] = C - A.cos\left(\pi \frac{C_k - 1}{M}\right), \ \text{K=1, 2,3... } 2^{N-1} \qquad (3.1)$$

Also rms value as function of Vref for sinusoidal stimuli is

$$\hat{T}[\hat{V}\text{rms}] = \frac{Vref}{2\sqrt{2}} \qquad (3.2)$$

The range of error voltage is the quantum voltage level (the least significant bit)

$$\hat{T}[\Delta] = \frac{V_{FS}}{2^N} = 1 \text{ LSB} \qquad (3.3)$$

Assuming this quantization error voltage is uniformly distributed over the code width from -1/2 LSB to +1/2 LSB, the expectation value of

The error voltage is

$$[\widehat{T}]\hat{e}_{rms}^2 = \int_{-\frac{\Delta}{2}}^{\frac{\Delta}{2}} \left(\frac{e_q^2}{\Delta}\right) de = \frac{\Delta^2}{12} \qquad (3.4)$$

So the signal to noise ratio is

$$\widehat{SNR} = 20 \log\left(\frac{\hat{V}\text{rms}}{\sqrt{\hat{e}_{rms}^2}}\right) = 6.02N + 1.76 \text{ db} \qquad (3.5)$$

SINAD is frequently expressed as function of ENOB as

$$\widehat{ENOB} = (\widehat{SINAD} - 1.76) / 6.02. \qquad (3.6)$$

4. EXPERIMENTAL ANALYSIS & SIMULATION RESULTS

Noise appear due to quantization error may leads to the   result of signal to quantization ratio for different effective number of bit.

4.1 SINAD estimation & comparision (proposed & earlier)

Table 4.1 Estimation of signal-to-noise & distortion ratio (SINAD) for 5 bit ADC

No. of Samples	Resolution	ENOB (earlier)	SINAD (earlier)	ENOB (proposed)	SINAD (proposed)
512	5 Bits	4.7178	30.16 db	4.832	30.84 db
1024	5 Bits	4.7094	30.11 db	4.7963	30.63 db
2048	5 Bits	4.607	29.49 db	4.7687	30.46 db
4096	5 Bits	4.6491	29.74 db	4.7786	30.52db
8192	5 Bits	4.642	29.70 db	4.7824	30.55 db

Table 4.2 Estimation of signal-to-noise & distortion ratio (SINAD)for 8 bit ADC

No. of Samples	Resolution	ENOB (earlier)	SINAD (earlier)	ENOB (proposed)	SINAD (proposed)
1024	8 Bits	7.657624	47.85 db	7.6642	47.89 db
2048	8 Bits	7.667821	47.92 db	7.6689	47.92 db
4096	8 Bits	7.68662	48.03 db	7.6878	48.04 db
8192	8 Bits	7.698766	48.10 db	7.6993	48.10 db
16384	8 Bits	7.699864	48.11 db	7.7124	48.18 db
30 K	8 Bits	7.723002	48.25 db	7.7356	48.32 db
64 K	8 Bits	7.647827	47.79 db	7.6563	47.85 db
128 K	8 Bits	7.646182	47.78 db	7.6583	47.86 db

4.2 Comparison of SINAD in graphical result
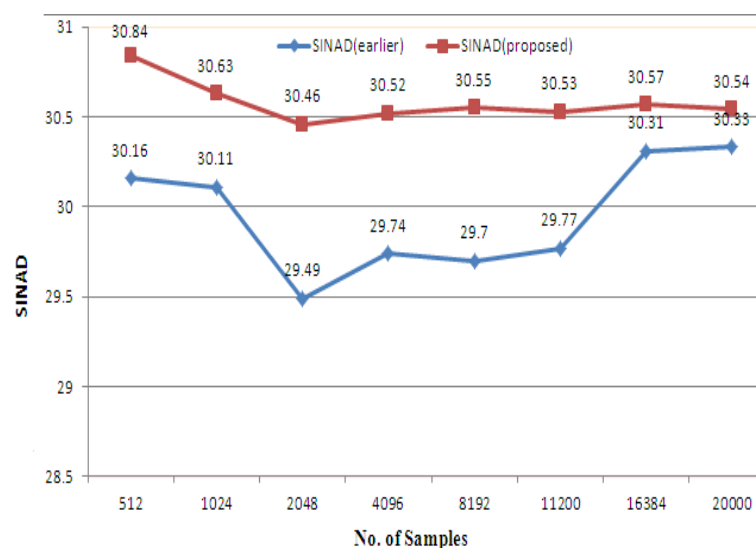
Fig.4.1 Comparision of SINAD for 5 bit ADC with previous results
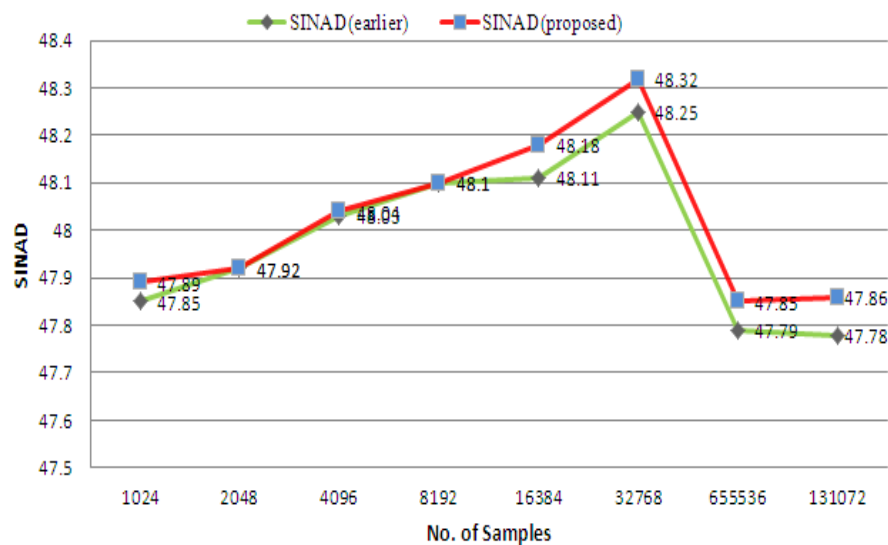
Fig. 4.2 Comparision of SINAD for 8 bit ADC with previous results

5. CONCLUSION & FUTURE SCOPE

In proposed work dynamic testing of an ADC is done by simulating ideal 5 & 8 bit ADC transfer characteristics. Large number of samples of full scale sine wave is taken at selected sampling frequency and code transition levels are computed using histogram method. Quantization error & different error voltage are determined. Signal-to-noise ratio & signal-to-noise & distortion ratio is estimated with different samples of input frequency of sine wave. Expected proposed output has been compared with previous results, which shows improvement in the outcomes of estimated parameter of proposed work.

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Co-operative Learning as a Pedagogical Approach to Enhance Learning Outcomes- A Case Study.

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Abstract: Technological advancements of the present day boast about many great achievements, including reducing physical distance. However they have created an alarming gap between people in terms of intra and inter-psychological relations, resulting in dearth of confidence and lack of involvement in classroom discussion. The importance of Cooperative learning is envisaged and planned to be implemented in language learning. Cooperative and collaborative learning is a pedagogical approach to reduce the gap and make learning in the classroom outcome-oriented. This work presents the case study on facilitating the grammar skill of Concord in I B. Tech Engineering students through group work. Inadequacy of individual student's knowledge was identified in prognostic assessment, administering the task, discussion and group presentation followed by post-test task learning. Emphasis is laid on group goals with individual accountability while ascertaining that outcomes are achieved. The quantitative results are compared in ascertaining the validity of the approach.

Key words: Cooperative learning, outcomes, assessment, knowledge, test.

1. Introduction:

In the present times when the world is advancing at a fast pace, technology has undoubtedly become an indispensable and integral part of our lives. The impact of technology on our everyday activities though positive or challenging is absolutely undeniable. Ranging from manufacturing to marketing, communication to education, there is no aspect of human life that technology has not affected. As already observed and accepted, the effects have been that of convenience and also disruption. It has been established by experts that technology is a dual edged weapon that if used carefully and thoughtfully will result is benefits but when handled without enough thought, will cause damage. Digital tools and machinery run with technology prowess have resulted in increase of efficiency and productivity. Similarly data gathering and analysis of the same has become easy and quick, which caused businesses to grow rapidly. There are many advancements in scientific research, medicine, logistics and all thrust areas due to the availability of information through internet.

More importantly and rather seriously observed fact is that unethical and careless use of technology has resulted in breach of personal, classified and sensitive information. Alongside

the impact of e-waste management which has become hazardous, the advancement of technology has also created health issues due to continuous work with screen and internet and dangers of job displacement. The most gruesome effect of technology that shows itself on almost every individual is social isolation.

Social isolation has crept into every household due to technological advancements. Particularly during the COVID-19 pandemic when the world was boasting of connectivity through internet, criticism evoked on technology for providing scope to social isolation. The innate ability of human beings to create meaningful and lasting relationships was hampered, rather killed by excessive time spent with online screen. Face to face communication even among family was disregarded due to excessive use of online media platforms. Particularly, most of the learners got used to isolating themselves. Even during the online classes, learners stopped responding to teachers and facilitators. This resulted in knowledge gap due to lack of interactions and discussions on subject matter. Post COVID-19, once all educational centers and workplaces were open and back to work, the gloomy after effects of social isolation caused by technology played spoil sport. The results were confidence lack, resistance to involvement in classroom discussions and an obvious gap in acquisition of basic knowledge which took a serious toll on education.

Hostility or unresponsiveness to the peer learners and facilitators is the commonly observed behavior of learners post pandemic. The learners who earlier included themselves in the physical classroom now stopped to think about themselves as part of the peer learners group. They also became unresponsive to the classroom discussion and gave up the responsibility of cooperating with peers in learning.

It is thus important to involve the learners in a co-operative outlook towards learning in the classroom. The present paper is a case study on the classroom intervention with cooperative learning to achieve the specific learning outcomes; Cooperative learning pedagogy which is based on the Social Interdependence theory

2. Literature Review:

Researchers and international organizations have studied the effects of school closures on students' learning and found a measurable loss in the acquisition of basic skills, particularly for the most disadvantaged children (Quinn et al. 2016; Cattaneo et al. 2017). Furthermore, student outcomes resulting from online learning have been shown to be poorer, on average, than outcomes resulting from face-to-face instruction (Heppen et al. 2017).

Cooperative learning is defined as group work in which the learners take responsibility of their own as well as others' learning. In order to ascertain learning successfully, cooperative learning involves learner-to-learner interaction. Northern Province Department of Education (2001) and Constantopoulos (1994). Cooperative Learning as a structured group learning pedagogy improves mutual learning where students share information while working in cooperation with individual accountability (Johnson & Johnson, 1999). Learners explain, elaborate and discuss to develop an understanding. Cooperative learning enables learning through cooperative problem solving, sharing individual insights to support the construction of individual knowledge of the members as they integrate, and elaborate upon their existing knowledge. Roth and Roy choudhury (1993).

Cooperative learning includes positive interdependence, face-to-face interaction, individual and group responsibility, leadership, decision-making, trust-building, communication, and conflict management skills (Slavin, 1987; Cohen, Brody & Sapon-Shevin, 2004). Roseth, Johnson and Johnson (2008) examined the social-contextual view of the mechanisms and processes and found that higher achievement and more positive peer relationships were cooperative rather than competitive or individualistic. Furthermore, cooperative goal structures were strongly associated with early adolescents' achievement and positive peer relationships. When students are provided with opportunities to interact with their peers during small group discussions, they learn to read each other's non-verbal language, respond to social cues, and engage in general banter about the work they are completing (Gillies, 2003a,b).

The extension of cooperative learning to the classroom, planning and researching collective learning for classroom contexts dates back to the 1970s (Kessler, 1992). Co-operative learning stresses active cooperation between students of diverse abilities and backgrounds (Tsai, 1998; Wei, 1997; Yu, 1995) promising student outcomes in academic performance, social behavior and progress (Kam et al., 2003; Namaziandost, Pourhosein Gilakjani et al., 2020).

3. Research Questions

- Will Cooperative Learning through group activity help learners overcome the unresponsiveness and gain confidence?

- Will it be possible to achieve the specific outcome of subject and verb agreement knowledge through the cooperative learning?

- Can involving students in Cooperative learning make them responsible and contribute actively to the achievement of goals?

4. Method and Discussion :

Cooperative learning method has been used as classroom intervention to facilitate subject verb agreement through group activity. The ESL class consisted of 63 students from first year of engineering who were in their first semester. They were fresh from their intermittently disturbed intermediate education. These students were hit by the disruption of academics due to pandemic. These students fall under a unique lot as they were given a waiver on their tenth class final examination owing to the pandemic. They were attending online classes right from their 8th standard which resulted in lack of basic knowledge. Most of these students lost the continuity with academics and expected a similar waiver on their intermediate examinations too. Isolation due to online classes, and total abstinence from social and academic interactions were common in them. Disorientation to classroom activity, lack of active involvement in class discussions, lack of confidence to respond in the class interactions were the behavioral traits observed. The intension was to engage the students cooperatively in gaining knowledge in concord (subject-verb agreement).

A test was administered to these 63 students to know their knowledge in concord. The pre-test consisted of ten sentences with concord errors carrying one mark each. The test was conducted in pen and paper mode. Each student was given a printed paper with ten sentences. The results

of the test showed that out of 63 students, 10 students scored 6 marks and 2 students scored 8 marks. All the other 51 students scored 5 and less than 5 marks. Majority of students were between 2-4 marks. Thus it was clear that the students lacked basic knowledge of concord.

The class was grouped randomly consisting of 5 learners in each group. As it was essential to orient the learners towards the importance of being equipped with the skill to use the official language effectively, the facilitator held an orientation talk on the importance of English language and role of concord in effective use of language. It was done in interactive mode using question answer strategy. As expected, the participation from the class was minimal. This was followed by an information material handout on concord being given to the twelve groups with ten minute duration set for the groups to discuss the information on concord from the handout. During these ten minutes, it was observed that most of the members from each team were listening and responding to each other.

Followed by this another fifteen minutes was made available for all the groups to present their understanding of concord and the information in the handout. Though initial hiccups were inevitable, student groups were observed to be taking responsibility and presenting in turns. It was evident that the students gathered a fair amount of knowledge on subject verb agreement. It was essential to test their understanding. Facilitator appreciated the participation and presentation from all teams and announced a test in concord. An immediate oral quiz was conducted to assess the learning of the students by cooperative learning through group activity. The post-test was conducted with 10 different erratic sentences on concord carrying 1 mark each. The results of the test showed that 49 out of 63 students scored more than or equal to 7 marks and 14 students scored less than or equal to 6 marks. Among these 14 students, 7 students scored 6 marks.

5. Analysis and Findings :

On comparing the results of pre-test and post intervention test, it is clearly understood that, cooperative learning through group activity yields results in terms of enhancement of knowledge, improvement of grades and thereby the attainment of specific learning outcomes.

Before the group activity, in the pre-test, 51 students were below the 5 marks level where most of these 51 stood between 2 and 4 marks. 12 students were observed to have fair knowledge of concord and stood above the 6 marks level.

After the active participation in group activity and competitive presentation and peer group interaction and reviews, the post-test results showed that 49 students scored 70% and among the rest of 14 students, 7 were above the 60% level.

6. Conclusion :

The findings were indicating that employing pedagogical activities with cooperative learning will help the learners to become more responsive and responsible to contribute actively to the learning of themselves and their peers. This intervention will most probably result in the attainment of specific learning outcomes to major extent.

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Instilling the Art of Critical Thinking through Book Reviews: A Classroom Experiment

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Abstract: *In engineering colleges across the world, critical thinking occupies an important place like the other professional skills. However, researchers suggest that graduate students are lacking in the skill of reading comprehension and the art of thinking critically. Therefore, developing critical thinking skills in engineering students is of greater significance in technical education. Inculcating the habit of reading books and involving the students to present book reviews have been studied as an effective way to instill critical thinking in students of first year B. Tech. The following case study discusses the importance of reading books and employing the specific skills of reading; comprehending the plot or theme, identifying the intention and tone of the author, observation of the sub themes/characters, analyzing and summarizing. Further, this work also presents the outcomes of reading and presenting book reviews.*

Keywords: Reading, book reviews, critical thinking, comprehension.

1. INTRODUCTION:

Acquiring all kinds of information and enabling the development of all necessary skills in order to build human mind is the basic concept of education. Nurturing the learner to face the continuous rather complex challenges in personal and professional life is rudimentary about education. Education must in the utmost acceptable sense develop the twenty first century employability skills such as Innovation, Creativity, Communication, Collaboration, Critical Thinking, Problem Solving, Decision Making along with Technology Operations and Concepts. These are regarded as new age skills when added with Research and information fluency and Digital Citizenship. According to Hart Research Associates, (2015); Kirsch, Braun, Yamamoto, & Sum, (2007), to deal with the demands of technological advances and a globalized workforce, majority of jobs require a broad skill set. As advocated by Almlund, Duckworth, Heckman, & Kautz, (2011), irrespective of the lexis used, research revealed that 21st century skills envisage both academic and workplace success. The 21st century learning skills are often referred to as 4 C's: critical thinking, creative thinking, communicating, and collaborating. These skills help students learn, and so they are vital to success in school and beyond.

Educational policies being based on the traditional rote teaching method caused students be merely gatherers of information but in the modern times teaching has evolved through pedagogical practice, turning from rote learning to meaningful learning. As a consequence the

establishment of a new definition to teaching that promotes critical thinking as a way to ensure that students must present opinions, adapt to ever changing needs and challenges, encourage innovation and problem solving thus achieving their highest academic level.

Owing to the still prevalent traditional rote learning method and also due to lack of focused intervention by visionary academicians, there is a dearth of critical thinking in today's graduate students. Debjani Ghosh, the president of the technology industry lobby NASSCOM said that the education system lacks critical thinking and prevents students from asking questions.

The present study encompasses the development of the foremost of the four C's, Critical thinking as an art through pedagogical intervention of book review presentations.

2. Literature Review :

Hakes,(2008) Positively remarked that literature and critical thinking are not "two islands" but "simply different coastlines of the same one". The use of literature and creative writing pieces of fiction and non-fiction in the classroom and beyond the classroom to enable students' critical thinking is highly recommended. One of the major goals of education should be to develop 'thought power' in students Osborne (1934). The facilitators are expected to inculcate in their students the habit of reading with intent. Majority of students like to listen and watch rather than to read. It is the role of the teacher to educate the learners about the manifold benefits of reading. Data from July 2018, summarizes that 33 percent of high school graduates never read a second book the rest of their lives. Worse yet, 42 percent of university graduates never read another book after college (Kozlowski). Reading stimulates imagination and the reasoning and critical thinking when applied to imagination, results in creativity and innovation.

 Anderson, (2013) observed that using critical thinking skills is a benefit for employees as well as management when the practice is modeled and promoted from the top to the bottom of the organizational hierarchy. Critical thinking provides scope for thoughtful handling of conflicts at workplace thereby ensures productivity, healthy relations and work life balance. The process of preparing a high quality book review is especially recommended for the developing the writer (Lee et al., 2010; Worsham,2012). Book review helps student discover voice, frame arguments, analyze content reflectively and critically, and relate that content to self and social issues (Waller, 2000). Hartley (2005) explored the usefulness of book reviews among educators and found that the highest ranked value associated with book reviews was "a straightforward overview of what the book was about".

Excessive dependence on technology, lethargy in using personal knowledge and reasoning, lack of reading skills and gap in gathering knowledge are the vices identified in today's learners. The gap has been further increased due to the COVID-19 pandemic as the learners have got used to stay in their comfort zone and turning rather unresponsive to professional and intellectual interventions.

3. Research Objectives:

- To use book review presentations activity as a pedagogical approach in instilling critical thinking ability in graduate students.

- To observe the benefits of involving learners in reading books actively and presenting book reviews.

4. Method and Discussion:

Learners in the modern era have come through circumstances that have made them lose the ability to think critically. They are provided with ready answers for questions causing them to look for sources instead of using their capacity to think and reason. The advancement of technology and availability of continuous connectivity to internet has made young minds dependent. The most essential skills work place and life skills – critical thinking, creative thinking, collaboration and communication are stunted in them. Instilling critical thinking ability in the learners by involving them in book review presentation activity is the classroom experiment taken up for study.

The facilitator conducted a classroom discussion on importance of reading. It was made interactive by asking questions and allowing the learners to answer. The learners were also allowed to ask questions on the strategies and benefits of reading books. It was made sure that all the learners acquired awareness on the need to be a good reader to be a leader. After the interactive session, each student from the class of 64 students was encouraged to choose a book from one of their favorite genres. Novels, fiction, science-fiction, self-help, biographies, historical books, literary-fiction, fantasy and non-fiction were allowed as genre choices. In a span of two days all the students made their choice of book and registered the same with the teacher. They were all instructed to complete reading the book within 3 weeks. Instruction was provided and a discussion on the strategies was conducted for the learners. A book and its review were used as an example to ensure that students also followed the same approach to reading.

Students were made familiar with the process of reading and reviewing. They were guided to find answers to the questions

What is the book about?
Who is the author, and what is the reason for writing this book?
What is the plot?
Who are the important people in the books?
What are the themes and sub themes?
What are your thoughts about the content and the book?
Do you think the author's intention and goal of writing the book is achieved?
Would you recommend this book to someone? Why?/Why not?

The book review presentation was conducted over a period of 4 sessions. Each presenter was allocated a minimum of 8 minutes and maximum of 15 minutes for each presentation along with the feedback. Students were given the freedom to choose power point presentation/poster presentation or any other visual presentation style for their review. The peers were instructed to rate the presentation according to the rubrics provided and write the feedback points on the review. According to the plan of involving learners in giving comprehensive and constructive feedback, also each presenter was instructed to request for questions if any and feedback from peers, on the book review presentation.

The feedback rubrics for book review included the following points:
Did the presenter mention the book title, name of the author and justification of the title?
Was the visual of the book cover displayed?
Did the presenter provide details of the theme?
Were the important characters/ideas presented?
Does the summary suggest that the presenter has full knowledge of the book?
Did the presenter engross the audience with involvement and enthusiasm?
Was the body language and voice expression of the presenter complementing the presentation?
Was the audience involved and respectful towards the presenter and the content?

After every presentation, it was mandatory that a minimum of two students give peer review followed by the instructor feedback.

5. Findings and conclusion :

Before the activity, there was nearly no participation from students in the class room interaction. There was a clear and remarkable increase in the involvement of learners in class interactions. As the activity was announced, though not all the students were initially excited about the book review activity, they quickly developed interest as their peers displayed their choice of books for review. In a short span of two days all the students displayed their choice of books on a stick note on the class activity board. Each student presented book review, recommended the book and answered the questions shot by the peers. Both presenters and peers displayed sensibility, knowledge and critical evaluation and mutual appreciation which marked the achievement of the activity goals. Students were observed to be excited about the books and participated enthusiastically in asking questions and giving feedback according to the established rubric. Throughout the activity time, positive energy and great amount of knowledge transfer was facilitated. Most students expressed their delight about the experience of reading a book. They were inclined to continue reading and presenting their reviews in blogs.

The classroom experiment carried out to instill the art of critical thinking in students was observed to be fruitful as 70% of the students presented systematic reviews and received appreciation from peers and instructor. Apart from learning to do a book review, students also learnt the skills of accepting and giving constructive feedback. Thy also learned to be effective listeners and positive and active participants in post presentation interactions.

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INSIGHTS INTO DIGITAL JOURNALISM

Eye-tracking Analysis of News Consumption Patterns

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Abstract : The article suggests that in order to fully understand media selection, a theory of attention must also be included, since attention is the basic building block for all processes involving media inputs. Eye-tracking trends were used to look at how people paid attention to newspaper and online newspaper pages from three different points of view. At first, the study was mostly about studying how people pay attention in different work settings. Also, experiments were done with a number of different types of media. In the third part of the study, the researchers looked at how people paid attention to different kinds of news stories that had different design patterns. People think that paying attention is an important part of the receiving process.

The study of receiving used an action-theoretical framework, which means that it was thought of as a way for the user and the medium to engage. Eye-tracking data were used to find out how alert people were. The study began with coming up with a theory about how different types of media, like printed newspapers and online newspapers, affect the way their readers set their agendas. The study's goal was to find out how the type of media and the style of news stories affect, how much people pay attention and how selectively they read. According to the results of our study, visual cues like large photos or graphics, as well as how information is organized and laid out, can help direct attention. But this process isn't automatic and isn't just based on sense information; there is also a deliberate and aware choosing process going on. There seems to be a stronger link between how news is presented and the patterns of interactive attention than between the channel through which it is given.

Keywords: reception, selection, attention, eye-tracking, newspaper, online newspaper.

1. INTRODUCTION:

The digital age has brought about profound transformations in the field of journalism. News organizations are increasingly adapting to the evolving landscape of information dissemination, leveraging digital platforms to engage readers and deliver content in innovative ways. In this dynamic environment, understanding how individuals consume news in the digital

realm has become a critical endeavor for journalists, media organizations, and researchers alike.

The consumption of digital news is a multifaceted process influenced by various factors, including content presentation, user interface design, and the evolving preferences of a tech-savvy audience. To gain deeper insights into these patterns, this study employs eye-tracking sophisticated tool that provides a unique window into readers' visual engagement with digital news content. Through the precise observation of eye movements and gaze patterns, eye-tracking analysis offers a granular examination of where readers focus their attention, how long they linger on specific elements, and the sequence in which they navigate through news articles *(Rayner et al., 2012).*

Previous research in the domain of eye-tracking analysis has revealed valuable insights into reading behaviors, attention spans, and cognitive processes *(Holmqvist et al., 2017).* However, its application within the context of digital journalism is relatively uncharted territory. In this study, we aim to bridge this gap by investigating the intricate relationship between readers and digital news articles. By employing eye-tracking technology, we seek to uncover the nuances of news consumption patterns, which can inform content creators, designers, and journalists on how to optimize the delivery of news in the digital landscape.

Our research objectives revolve around deciphering the visual behaviors of readers as they interact with online news content. We are particularly interested in identifying the factors that capture readers' attention, the patterns that dictate how they navigate through articles, and the implications of these findings for the future of digital journalism. By shedding light on these critical aspects, this study contributes to a deeper understanding of the digital news consumption experience, with practical implications for content creators, media organizations, and the broader public.

In the following sections, we delve into the methodology used to conduct eye-tracking analysis in the context of digital journalism, present our research findings, and discuss their implications for the field.

Digital journalism, characterized by its dynamic nature, multimedia-rich formats, and real-time updates, presents both opportunities and challenges for news providers. Traditional print newspapers and broadcast news have given way to news that is disseminated and consumed on a global scale, often with unprecedented speed. This shift necessitates a deeper understanding of the changing dynamics of news consumption, necessitating innovative research methodologies that can capture the nuances of readers' interactions with digital news articles.

Eye-tracking Analysis offers a unique advantage in this regard, allowing for the non-intrusive and real-time monitoring of where readers direct their visual attention during the consumption of digital news. By recording eye movements, fixations, and saccades, it unveils the intricate patterns that underlie the consumption of online news articles, offering insights that extend beyond traditional surveys or self-reported data *(Poole & Ball, 2006).*

As we delve into this research, we aim to explore several key facets of digital news consumption patterns through eye-tracking analysis. These facets include the impact of headline design on attention capture, the role of visual elements (such as images and multimedia), the duration of gaze fixations on specific sections of news articles, and the impact of article length on reader engagement. Through these investigations, we intend to provide

news organizations and content creators with evidence-based guidance for optimizing digital news content.

Furthermore, this research bears broader implications in the realm of media literacy and digital information consumption. As individuals are increasingly bombarded with vast amounts of digital content, understanding how they process, retain, and navigate through news articles can empower them to become more critical and discerning consumers of information. This, in turn, contributes to a more informed and resilient society.

In the subsequent sections of this paper, we will delve into the methodological details of our eye-tracking analysis, present our research findings, and discuss their implications for the field of digital journalism, as well as areas for future exploration.

2. Literature Review:

The transition from traditional print journalism to the digital age has revolutionized the way news is produced, disseminated, and consumed. The evolution of digital journalism has introduced a dynamic and multifaceted landscape that has led to a growing interest in understanding how users engage with news content in the digital domain. Within this context, eye-tracking analysis has emerged as a powerful tool for exploring the intricacies of news consumption patterns.

The emergence of digital journalism has redefined the traditional news ecosystem. Print newspapers, radio, and broadcast television have been joined by an array of digital platforms, including news websites, mobile apps, and social media. The digital environment is characterized by real-time updates, multimedia content, user-generated news, and interactive features. Consequently, the nature of news consumption has changed significantly *(Carlson & Lewis, 2015).*

Previous research has utilized eye tracking to study reading behaviors in various contexts, providing valuable insights into factors that influence attention and comprehension. However, its application in the context of digital journalism is relatively recent. Research has demonstrated the utility of eye tracking in studying elements like headline impact, image engagement, and reading patterns within digital news articles *(Kuustie et al., 2014; Mancas et al., 2019).*

Understanding news consumption patterns in the digital era is crucial. Research has indicated that headline design significantly influences the capture of readers' attention *(Mancas et al., 2019).* Eye tracking has shown that readers often fixate on images before delving into the article, highlighting the role of multimedia elements in attracting attention *(Kuustie et al., 2014).* Additionally, the duration of gaze fixations on different sections of news articles has been studied to gain insights into how readers navigate content *(Shrestha et al., 2016).*

The format of digital news content plays a significant role in determining how readers engage with information. Digital journalism leverages multimedia elements, such as images, videos, infographics, and interactive graphics, to enhance storytelling and captivate readers *(Deuze, 2018).* Several studies have examined how the presence and placement of visual elements impact news consumption patterns. Eye-tracking research has shown that images accompanying news articles can capture readers' initial attention *(Kuustie et al., 2014).*

Moreover, interactive features within news articles have gained prominence. These elements, including interactive maps, quizzes, and embedded social media feeds, encourage readers to actively engage with content. Research suggests that readers are more likely to interact with such features, extending their time spent on the page *(Tang et al., 2019).*

News recommendation algorithms, which provide users with personalized content suggestions, have become integral to many digital news platforms. These algorithms consider user preferences and behavior, aiming to enhance user engagement. However, this personalization raises questions about the potential formation of information bubbles, limiting exposure to diverse viewpoints *(Pariser, 2011).*

Here are some questions asked in focused group discussions and individual interviews to assess what makes digital news content visually appealing and engaging for eye engagement:

- When you read digital news articles, what visual elements, if any, immediately draw your attention? (e.g., images, videos, headlines, infographics)
- Do you prefer digital news articles with multimedia elements, such as videos or interactive graphics? Have you noticed any specific design features in digital news articles that make them more visually attractive to you? (e.g., font styles, colors, layouts)
- How does the use of visuals (images, videos, graphics) impact your comprehension of the news content?
- Do you find interactivity, such as quizzes, polls, or interactive infographics, enhances your engagement with digital news content? Can you provide examples?
- Are there any specific news topics or categories where you find visual elements to be particularly important for engagement? Have you ever used eye-tracking technology or heatmap analysis to evaluate your own reading habits and eye engagement when consuming digital news content?
- When you come across a digital news article that you find visually unappealing, what aspects or design choices turn you off or make you less likely to engage with the content?
- Do you think the use of white space, typography, and page layout plays a role in how you engage with digital news content? How so?

The findings based on the questions provided is dependent on the responses gathered from the sample audience. However, some findings that align with the types of insights from the questions related to eye engagement in digital news content is shown further in this study.

3. Elements which are appealing and engaging for eye engagement according to the gender:

Factors	Female (%)	Male (%)
Content	47	53
Images	52	48

Videos	49	51
Infographic	67	33
Layout	58	42
Colour	53	47
Font	43	57
Quiz/Polls	41	59
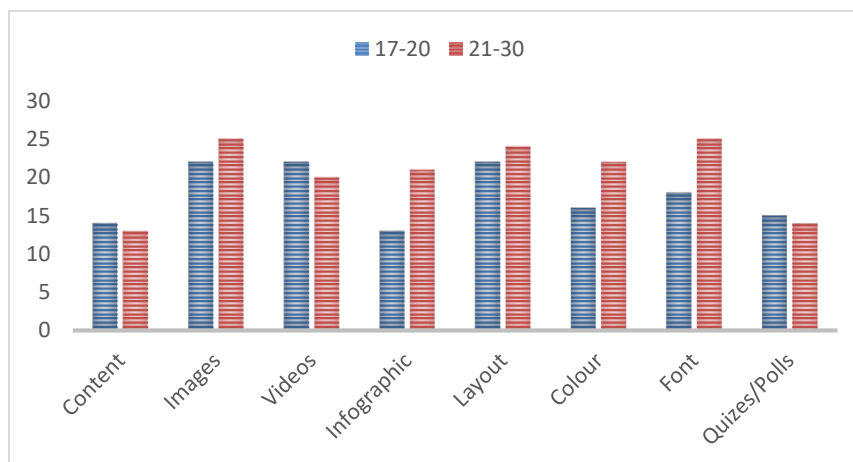
4. Elements which are appealing and engaging for eye engagement according to the different age groups:

Factors	17-20	21-30	30- 45	45 Above
Content	14	13	22	19
Images	22	25	23	17
Videos	22	20	25	24
Infographic	13	21	18	18
Layout	22	24	19	23
Colour	16	22	19	16
Font	18	25	21	22
Quiz/Polls	15	14	23	15
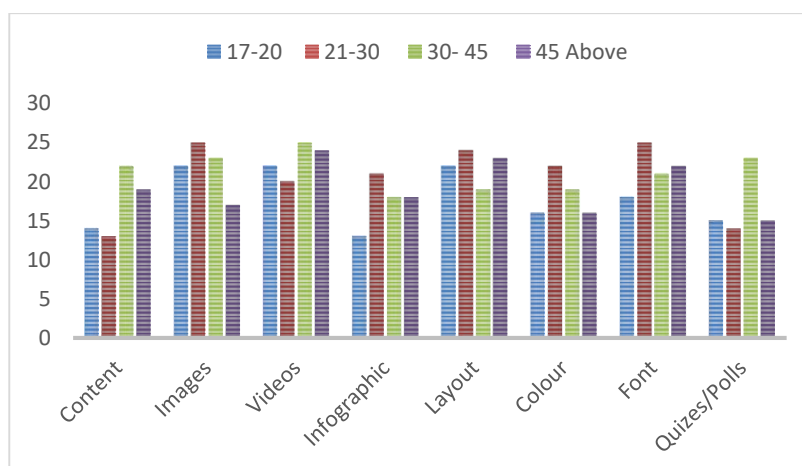
Comparative Eye-tracking Analysis of Newspaper Consumption Patterns: Printed and Online

When we looked at eye-tracking data from printed newspapers, we saw a clear fixation pattern: people were mostly looking at the headlines and pictures on the front page. Notably, people were most interested in front-page stories for the longest amount of time, which shows that editing decisions about story placement have a lasting effect on what people read. This finding fits with what news organizations have always believed and with the rules of importance and order in print media. On the other hand, it was clear how multimedia material and changing style affected the online daily structure. People stayed on articles with interactive elements like pictures and movies for longer, which shows that they were more interested. As readers moved down the page, the changing nature of web patterns made it possible for attention to be split in different ways. Readers also connected with social sharing buttons and comment sections, which suggests that online newspapers encourage a way for people to take part in setting the topic through dialogue and participation. These results show how agenda-setting is changing in the digital age. This means that we need to know how different types of media affect reader behavior and how news groups can improve the way they offer material based on how engaged users are.

Eye-tracking Analysis of News Consumption Patterns shows how media and news articles impact attention and selective reading.

Our study, "Eye-tracking Analysis of News Consumption Patterns," showed us that the type of media and the style of news stories have a big effect on how much people pay attention and what they choose to read. When it came to the type of media, we found that viewers paid very different amounts of attention to printed newspapers and online newspapers. When people read newspapers, they tended to pay more attention because the restricted room and organized layout made them look at the headlines and established parts on the front page. On the other hand, readers showed a more limited but more fluid way of reading news in online newspapers, which had a variety of content forms, a dynamic style, and interactive features. Multimedia articles, like those with pictures and videos, got people's attention for longer periods of time, which shows that readers are more interested in visually improved material. As people looked through online newspapers, the style changed, letting them choose what they wanted to read. This was often caused by links and linked content in sidebars.

Along with the type of media, the style of news stories had a big impact on how much people paid attention and what they chose to read. Readers were more interested in in-depth news, as shown by the fact that feature stories and in-depth pieces kept their attention for longer amounts of time. Online news stories with social sharing tools and comment sections also urged readers to connect and talk with each other. This led to a more careful engagement with content, as readers actively engaged in discussions and shared articles that spoke to them.

The results show that the type of media and the style of the news story have a complicated relationship that affects how people read the news and what they choose to read. Media companies need to understand these dynamics if they want to present their content in a way that suits user behavior and preferences. This is especially important in the digital news era, where readers have different attention and interaction patterns that are changing how agendas are set and news is consumed.

In Eye-tracking Analysis of News Consumption Patterns, news presentation and interactive attention patterns matter more than channel.

Our research on "Eye-tracking Analysis of News Consumption Patterns" shows that how news is presented and how people interact with it have a bigger effect on how people act than how the news is given. A newspaper or an internet newspaper is one example of a platform that can affect how people read news. However, the way news is presented is what really affects reader involvement. For example, the dynamic structure, video elements, and engaging features of online newspapers have a big impact on how viewers connect with and move through news stories. Images, videos, hyperlinks, and social sharing icons can change how people pay attention, which makes them want to read more and look into related themes. On the other hand, even within the same medium, like online newspapers, the layout style, content structure, and interactions can be different. These differences have a big effect on how readers choose what to read, how engaged they are, and how much attention they pay to certain news stories. These results go beyond the medium and question common beliefs about the importance of the route through which news is spread.

Understanding of receiving, retaining, and navigating the news articles, helps them to become more critical and discerning information consumers in a digital age.

Understanding how people consume, recall, and navigate news stories in the digital era is crucial to our research. As the digital world bombards individuals with stuff, especially news items, separating fact from fiction is crucial. Our study illuminates the complex dynamics of news consumption behaviors, notably eye-tracking studies. We help readers become more critical and discriminating information consumers by studying how they allocate attention, interact with multimedia, and use social features. In an age of misinformation and deception, understanding how people engage with news material helps us make better judgments, challenge sources, and improve media literacy.

The consequences of this work go beyond academic curiosity in an era of digital information deluge. With the rise of the internet and social media, people are continuously exposed to a flood of news pieces and sources, making it harder to sort through. We solve this difficulty by revealing news users' complex preferences and actions. Understanding how readers digest, retain, and navigate news material helps media companies and content providers improve the user experience and provide information in a manner that resonates. These insights also help readers think critically, identify biases, and evaluate news items. The research is significant for

academic debate and practical for media practitioners and the general public, building a better educated, media-literate society that can confidently and wisely navigate the digital information field.

5. Conclusion :

In conclusion, our "Eye-tracking Analysis of News Consumption Patterns" study examines how people consume news in a digital, linked world. We used eye-tracking technology to study news consumption dynamics and discovered that medium, presenting style, and interaction strongly impact readers' agendas and attention.

Through front-page articles, conventional news sources like newspapers continue to establish agendas, according to the research. Online newspapers demonstrate a new era of dynamic and participatory agenda-setting. Multimedia, dynamic layout, hyperlinks, and interactive elements affect how readers interact with news items.

We argue that news presentation and interaction are more important than the medium via which news is delivered, contradicting channel primacy assumptions. This study affects media companies and consumers. It allows media professionals to tailor content to reader behavior and preferences, improving user experience. It also teaches news consumers how to be more critical, discriminating, and media-literate in an information-overloaded digital world.

As digital material floods people, knowing how consumers absorb, retain, and navigate news items is crucial. In an age of information, confusion, and disinformation, this research opens the door to media literacy and critical thinking. This study promotes scholarly knowledge and allows people to make educated, conscientious choices in their news intake and involvement, creating a more informed and media-savvy society.

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Development of Science Programme for primary students and its effect on students achievement and interest in science.

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Abstract: *The main objective of the research was to develop the science programme for primary students and to study the effectiveness of science programme on students science achievement and interest in science. Product development and Experimental methods were used. The sample consist of 40 girl students of 8ᵗʰ standard from kanya Vidyalaya in Haveli Taluka , Pune district of Maharashtra were selected as convenience sampling. To study science achievement of students, researcher develops achievement test and to study science interest a questionnaire was used which was developed by Dr. Neha Deo. Research programme was implemented from November 2021 to April 2022. Science programme includes Teaching methods, Models of teaching, Constructivism, Learning styles , Multiple Intelligence , Learnig skills etc. Major findings were there was increase in the achievement of girl students in the experimental group than the control group. And also increase in scores of post-test compared to pre-test of the girl students interest test.*

Key words: *Development of science programme, Science achievement, Interest in science, Primary students, Teaching Methods, Learning skills.*

1. INTRODUCTION:

Today's era is known as the era of science. The influence of science is visible in all spheres of life. In the field of education, problems are solved rapidly using the scientific method. With the progress of science, development of various branches is seen. Along with the expansion of science, today every field is expanding more and more and every field is changing at a rapid pace. Teachers take lots of efforts to fulfil the objective of all round development of the students. the main objective is to teach various subjects and achieve the development of the students.

Our social development and national development take place because of science. National development depends on the development of Science. There is need of people with the knowledge of Science, its techniques and Scientific attitude in the developing country like India. On this background, Study of Science becomes essential.

As Science is very important subject, teaching of science should be done very properly. That is why, special attention should be given to teaching of science. To make science teaching very effective, various teaching methodology, aids and activity should be used. It is necessary to make students' learning more effective and have concept clarity in them.

Interest and Students' activity have positive correlation between them. Attitude develops from interest. Interest in science makes students focus on science teaching. They work hard for science learning willingly. Students' inspire to gain deeper knowledge. Their thought process develops. For the same reason interest in Science should be develop. Although interest is intrinsic, it can be enhanced and sustained through quality external variables, treatments, and activities. For this, various science activity should be conducted by the teachers.

1.1 IMPORTANCE OF THE RESEARCH
Research will be useful for the students and teachers in the following way –
Importance to the students
1) The program will enable maximum student participation through student-centered teaching.
Importance to the teachers
1) From this programme, Class VIII science teachers will be benefited to plan their own programme.
2) Using this program, one will understand how to develop interest among the students in science subject.
3) Teachers will find that this program develops students' interest in science and changes their attitude towards science.

1.2 PROBLEM STATEMENT
Development of science program for Marathi medium students of class VIII in private aided schools in urban area of Haveli taluka of Pune district and to study its effect on student's achievement, interest in science .

1.3 OPERATIONAL DEFINITION

Students of class VIII –
Class VIII girl students of Marathi medium studying in private aided schools in urban areas of Haveli taluka implementing the curriculum of Maharashtra State Board of Secondary and Higher Secondary Education.

Achievement in science subject –
Scores obtained by Marathi medium girl students of Class VIII in private aided schools in urban areas of Haveli Taluka in a researcher-designed test based on the components of Class VIII science textbook prepared by Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune.

Science programme -
A structured program designed according to the 13 steps of product development in the YCMOU handbook for some components of science, in which specific activities were included for the development of scientific interest and attitudes towards science for Class VIII girl students from private aided schools in urban areas of Haveli taluka.

Programme included following activities –
Classifying, Differentiating, Drawing Diagrams, Completing Diagrams, Observing, Experimenting, Discussing, Project Making, Finding information, Creating a concept map from the information, Role playing, Drawing accurate diagrams by observation, Finding answers to questions, Giving different examples etc.

Interest in Science –
An aptitude questionnaire developed by Dr. Neha Deo for her Ph.D. level research was used. Its reliability and validity was evaluated. The Scores of this aptitude questionnaire was used to examine whether girl students of class VIII in a private aided school in an urban area of Haveli taluka prefer science activities over other subjects. The following factors were considered in formulating the questions in this research - Science learning and achievement, science attitudes, selection for higher education, participation in science activities at school, science hobbies and spontaneous activities.

Effect –
Significance Differences in Scores of aptitude test, attitude test and Science test developed by researcher before and after conducting Science programme among girl students of class VIII in private aided schools in urban area of Haveli taluka.

2. Research Objectives :
- o   To develop the science programme for Marathi medium students studying in private aided schools in urban area of Haveli taluka.

- o   To study the effectiveness of Science Programme developed for Marathi medium girl students studying in private aided schools in urban area of Haveli taluka on the science achievement.

- o   To study the effectiveness of Science Programme developed for Marathi medium girl students studying in private aided schools in urban area of Haveli taluka on the interest in science.

3. ASSUMPTIONS
1. It is possible to develop a science programme and plan its teaching activities for the content of science subjects.

4. HYPOTHESIS

Research hypothesis
1) There is a significant difference between science achievement of the experimental group and control group after the implementation of the program designed for Marathi medium girl students of class VIII studying in private aided schools in urban areas of Haveli taluka.
2) There will be significant increase in student's interest in science after the implementation of the program designed for Marathi medium girl students of class VIII studying in private aided schools in urban areas of Haveli taluka

5. Literature Review:

For the present research, total 9 reviews of related research were taken into consideration. Which includes –

Sr. No	Name of the researcher	Year	Title
1	Bose U, Sinha S, Chattergy S & Mukhargy M.	1970	A study of interest motifs of higher secondary school students.
2	Sumathi kuttiyamma N.	1973	A study of science interest of secondary school students & contributing factors to increase interest in science
3	Ravindranathan A.K.	1983	A study of effectiveness of medium of teaching on students science achievement , interest in science & mental health on secondary school students.
4	Deo neha	2007	A comparative study of interest in science & activities organized in schools to increase interest in science of 9th standard students from rural and urban area schools in haveli taluka.
5	Ray , Maunalini	2015	A study of impact of Scientific interest and Science process skills on achievement in biology subject students.
6	Abdelkrim Hasni ,Patrice Potvin	2015	Students interest in Science and Technology and its relationships with Teaching Methods , Family Context and Self Efficacy.
7	Adekunle Rachael Funk, FEMI-ADEOYE Kudirat oyewumi	2016	Students Attitude and Interest as correlates of students Academic Performance in Biology in senior secondary school.
8	Umale Kanchan	2012	A study of effectiveness of study habits development programme for 9th standad students.
9	Lohote Sonal	2013	A comparative study of development of problem based activity learning & its effect on science achievement and interest in science as compare to traditional teaching method.

From the review of researches done on interest, it was observed that according to the teachers there is negative impact on science interest due to being discouraged from home, negligence of parents and lack of facilities in school. Teachers opined that availability of physical resources at home or in school is important factor to increase the interest of student in science. A significant effect of interest was observed in the achievement of male and female students. The interest of the students in science and technology was seen to a great extent. Students preferred student-centered teaching methods.

6. SCOPE :

The present research is related to the intelligence, science achievement, science interest and attitude towards science of Marathi medium girl students of Pune district's Education Board.

7. LIMITATIONS :

- On November 1, 2021, this research work was carried out only on the students of class VIII of the girls' school, based on the availability of the school and according to the permission.
- A limitation of this program was that it was not possible to take into account the effects of the research findings if the students studied by obtaining information from other sources during the program development process.

8. DELIMITATIONS :

- This research is delimited to girl's school, a private aided school in Dehu, an urban area of Haveli taluka.
- This research is delimited to the student of class VIII of girl's school, a private aided school in Dehu, an urban area of Haveli taluka.
- This research is delimited to few topics in science for the student of class VIII of girl's school, a private aided school in Dehu, an urban area of Haveli taluka.
- This research is delimited to the student of class VIII of Marathi medium girl's school, a private aided school in Dehu, an urban area of Haveli taluka.
- This research is delimited to the student of girl's school, a private aided school in Dehu, an urban area of Haveli taluka only.
- This research is delimited to Science achievement, interest in science for the student of girl's school, a private aided school in Dehu, an urban area of Haveli taluka.

9. PROCEDURE OF THE RESEARCH :

The procedure of the present research is as follows –

- For the present research, convenience sampling method was used and girl students studying in class VIII of a school of Rayat Shikshan Sanstha was selected.
- A pre-test (questionnaire) was given to the girl students regarding their interest in science and attitude towards science.
- A programme was develop for some topics from Science subject.
- A programme was conducted for the girl students for science subject.
- After this, the science achievement post-test, post-test for interest in science was conducted.
- The effectiveness of program development on science achievement, science interests, was studied.

Duration of the programme was five months. The programme was conducted in the second semester of the school.

PROGRAMME

In order to increase students' interest in science and to increase their positive attitude towards science, the following points were considered while teaching science subject. Which included Teaching methods, Models of teaching, constructivism, Learning styles, Multiple intelligences, learning skills etc.

Teaching methods : This included Inductive method, Deductive method, Experimental method, Discussion method.

Models of teaching : This included Concept attainment model, Jurisprudential inquiry model of teaching.

Constructivism : This included Flow chart, Concept map, ̧ Role play.

Learning Style : This included Use of Audio-Visual aids, Activity based learning.

Multiple intelligence : This included Group work, Solo activity.
Learning Skills : Drawing by sseing, accurate drawing without seeing, loss of speed in drawing.

SAMPLE SELECTION
For the present research, 40 female students studying in class VIII of Sant Jijabai Kanya Vidyalaya of Rayat Shikshan Sanstha were selected by a convenience sampling for the experimental method.

10. Research Method :
Product development method and Experimental Methods were used for the research.

RESEARCH DESIGN

Two equivalent group pre-test , post-test design.

VARIABLES IN RESEARCH
1. Independent Variables :
Activity oriented Programme developed by the researcher.

2. Dependent Variables :
Achievement in Science, Interests in Science.

3. Controlled variables :
Class VIII, Science subject, 10 to 19 units, 12 to 14 years age group, Only teacher for both the groups (Researcher herself)

TOOLS OF DATA COLLECTION
1. To study science interest of students, questionnaire by Dr. Deo Neha was used.
To study science achievement of students – Achievement test made by Researcher.

STATISTICAL TOOLS
In the present research, for analysis of data, the following tools were used- Mean, Graph , 't' test, correlation.

Data Analysis

Table no.   science achievement test of controlled group and experimental group.

't'test \ Group	Experimental group	Controlled group
Number of students (N)	40	40
Mean (M)	22.33	30.63
Standard Deviation (σ)	3.38	5.71
Standard error	0.54	0.90
Standard error of difference	1.107	
Degree of freedom (df)	39	
t = DM/SEDM	7.5003	

In the present research, for hypothesis two, the calculated 't' value is 7.5003. Considering degree of freedom 39, table value of 't' at 0.01 level is 2.58. As calculated 't' value is greater than the table value of 't' at 0.01 level, null hypothesis is rejected and research hypothesis is accepted.

This means that, after implementation of science programme, the mean score of the girl students in the science achievement test of the experimental group was found to be significantly higher than the mean score of the girl students in the control group at 0.01 level of significance.

Table 1.8 Testing of science interest scores of students in the experimental group

't'test	Pre-test	Post-test
Number of students (N)	40	40
Mean (M)	52.20	66.95
Standard Deviation (σ)	8.47	12.99
Standard error	1.34	2.05
Standard error of difference	1.685	
Degree of freedom (df)	39	
t = DM/SEDM	8.7534	

In the present research, for hypothesis three, the calculated 't' value is 8.7534. Considering degree of freedom 39, table value of 't' at 0.01 level is 2.58. As calculated 't' value is greater than the table value of 't' at 0.01 level, null hypothesis is rejected and research hypothesis is accepted.

This means that, after implementation of science programme, the score of girl students in the experimental group on the post-test on the science interest test is significantly higher than the pre-test score on the interest test at 0.01 level of significance.

11. Findings :

- After implementation of science programme the mean scores of girl students in the science achievement test of the experimental group was found to be significantly higher than the mean scores of the girl students in the control group at 0.01 level of significance.

- After implementation of science programme the scores of girl students in the experimental group on the post-test of the science interest test is significantly higher than the pre-test score on the interest test at 0.01 level of significance.

12. RECOMMENDATION / SUGGESTIONS :

Based on the findings of the present research, the following suggestions are given to the students-

- Students should have hands-on experience while studying the units of science.
- In order to understand the concept of science, it should be verified by action and not just by rote learning.
- Information should be collected related to the units of the science subject.
- Participate in various competitions for science subjects.

13. CONCLUSION :

1. Due to implementation of Science programme, there is increase in the achievement of girls students in the experimental group than the control group.

2. Due to implementation of Science programme, there is an increase in the scores of the post-test compared to the pre-test of the girls student's interest test.

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GROWTH OF EDUCATION WITH SUPPORTING TOOLS OR APPS

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1. Introduction:

Education nowadays grown with lot of AI tools and applications. It may be the students or the teaching faculty who takes up the apps or tools for the sake of writing the research paper as well as for writing the assignment. The focus of this present paper will be on how these tools or applications are being the supportive pillars for the growth of education in recent times. This paper aims to highlight the selective tools and applications that are widely available in order to make people write their research paper or any sort of essay or assignment on their own.

The aim of this research paper is that to give awareness to the students or faculty who are at the beginning level of not knowing how to write an essay or how to write a research paper will be easily making their way by utilising the applications or the tools which are being discussed in this present paper. This will really make them to write their own essay or assignment without plagiarism in fact. Some students or researchers may never know from where to collect the primary and secondary sources to write a good research paper on that case this present paper will help them to know what are the data bases available? Or what are the applications that can really support them to get articles or the written documents from which they can get an idea to know, how to write a perfect essay or assignment on their own. By showcasing such apps and tools, this present paper will highly focuses on the growth of education that stands as a pillar for the present generation to write a good research paper or an assignment.

2. Reference Managers :

Initially to write any sort of research paper or an assignment, students, researchers and faculty are in need of knowing the reference managers. Exploration of citation is more important when they complete their research papers. In that case here are the reference managers or reference tools which will really help the students or the faculty to correct their paragraph or the grammatical mistakes which they commit in the paper, they are: Quilbot, Grammarly, Mandeley, Zotero, Readcube, Paperpile, Bibguru, Zbib.org, Cite this forme and Easybib. These each and every tool helps the researcher, students to cite their article very easily, and without any man power of searching a book and giving references to the referred book, just like that they can click on the citation style which they prefer it may be like MLA or APA or Chicago style as per they wish. Whatever style they prefer accordingly they can get the citation to be done in few seconds.

From my perspective I suggest people to use citation machine.net to do citation as well as to check their paper for plagiarism and grammatical errors. In the citation machine.net there

will be two options where it will ask us to create citation so that we can manage the bibliography. On the other side it will ask us to upload our paper in order to scan for plagiarism and to check grammatical errors so that it is an easy way for the students as well as researchers or faculty to get everything in one website or tool. Here the citation generator will help us to site website, books and journals. Just like that we have to give the author name, the title and the publication information so that we can complete the citation and it will give us the detailed bibliography.

3. Modern Tools for Publication :

Modern tools which are used for Publication are as follows: Word processing software, MS word, WordPad and Graphing Tools. Among these, the MS word, word pad are the normally useful tools where we do typing work. The question here is why it is needed? For the purpose of getting huge data, AI image processing, data storage and data communication as well as article promotion. So the word document once it is open with internet facility it gives us option of recording the voice and transform or convert it into a written format. Thereby the time is saved and shows the improvement of education that prolongs nowadays.

4. Tools and Techniques Used :

Tools like Digital Object Identifier (DOI), Citation Databases – WOS, Scopus, Google Scholar, Impact Factor and Citescore, are AI academic based search engines, which will really help people to get information related to their own disciplines. It can be of any field it can be science, it can be mathematics, and it can be literature and anything else.

5. Literature Collections and Analysis :

For the purpose of getting analysis or the collection of papers related to literature people can choose any of the following tools or apps in order to get information which they prefer. They are: Microsoft academic, Semantic Scholar, Scopus/WOS, Scinapse.jo, Sparho, Scholarcy, Paper-digest and Unpaywall. Here Microsoft academic is known to all but the other tools and apps which are discussed will be new to many people. Through Paper digest, semantics scholar Unpaywall tools we get number of research articles provided by many research people. Thereby we get an idea of how the article is written on specific topic which we are really wanted. This actually helps us in order to write the new research paper or an assignment on the topic we prefer.

6. Graphing and Infographic Tools :

Graphing and infographic tools are as follows: OriginPro, Grapher, GNUPlot, Signaplot, Lucidchart, Visme, Canva, Biorender (Free) and CCC (Creative commands). The tools listed here will really help us to do graph work and any sort of plot that we wanted to show in our article. Some Times we feel to draw the graph in a paper and to upload it in written document will be a toughest one. By using the tools which are listed we can easily do the graph work and the plot work as that of the original we really want to make. This in fact smoothen the work of the economic students as well as the mathematics students to do their graph work easily within the stipulated time. Here the CCC tool is not produced by licence and thereby it is not necessary that we have to cite it in the article.

Text Fine Tuning Tools

Text fine tuning tools are Grammarly, Linguis, Ref N Write, Prowriting Aid, Quillbot, Writerback, Zoho writer, and Word editor. These are the tools which the paper discusses in

order to make a paragraph or the sentence and even the words to be fine-tuned to be perfect enough to be presented as an article or as an assignment.

Grammarly, which we all know nowadays it is become a wide useful one but here we can check only 100 words for free if we want to check more than 100 words we have to go for premium. But anyhow this helps us to check grammar errors perfectly.

The Quillbot, tool will help us only in paraphrasing. As a researcher I normally prefer word editor for checking the grammar as well as to change the sentence even the words easily. In those Times in order to change the word we go with the options of synonyms but with this word editor tool we can easily make the changes not even in the word but also in the sentence. It is sure that apart from man power the mission power works.

Data Bases

In order to discuss the data bases initially will go with subscription based data bases.

Subscription Based Data Bases are as follows: Scopus, Web of Science, Social Science Citation Index (Part of WOS), EBSCO HOST, PROQUEST and IEEEXPLORE. Through these databases, people can get resources by making subscription. But rather than money once we subscribe and get into these data bases we will know how much it really helpful indeed.

a. Scopus

Scopus which is launched in the year 2004 has lot of abstracts and citation database. It newly covers 36,000 of research papers which belong to various fields like life sciences, social sciences, health sciences and physical sciences. Here the people who belong to technology, medicine and even arts and humanities will be benefited from this data base. What they have to do here is, they have to give the title which they really want to search in the search box so that the database will lead them to the area of naming the author name, then it will show them a list of papers which are being available in that database thereby students, researchers and faculty can pick whichever they need as per the title they want and so that they may use it for their upcoming research paper as well as can do a new assignment.

b. Web of Science

Through this subscription based database, one can find various articles, reviews, editorials, chronologist, abstracts, even proceedings and technical papers. This is not only for the researcher or students who belong to science, social science, arts and humanities but also for more than 200 disciplines. Just like Scopus we have to search the title of the paper and we may use it for our reference.

c. Social Science Citation Index

This is nothing but a part of Web of Science. It contains more than 3000 journals which will be helpful for more than 58 disciplines. Here, we have more than 350 scientific and technical journals which will be helpful for the present generation to make references till date.

d. EBSCO HOST

This is an open one for doing research work. It is a trustworthy one for getting information. This has done lot of contribution to the library software's. Through this database we can get all kinds of information in a speedy manner. We can search articles, books, journals and many more from this database.

e. Proquest

Proquest is a known application, where we get more information regarding dissertations, thesis, e-books, newspapers, periodicals, and even historical collections. This will really help us in order to do any research work or assignment we are in need to do.

f. IEEE Xplore

This is a digital library where we can access journal, articles, conference proceedings, and technical articles which will really helpful for the students of computer science, electronic and the engineering students. It is an advanced technology based database.

Secondly after discussing on the subscription based databases this paper urges to insist about the free data bases which really show the standard of education. The list of free data bases shows us that people normally prefer these free data bases in order to refer any sort of title they prefer.

Free database are as follows, PUBMED / MEDLINE, AJOL, HUBMED, GOOGLE SCHOLAR, JSTOR: JOURNAL STORAGE, DOAR (Directory of Open Access Journals) - Open Access Book, Open DOAR/ WWW.DOAJ.ORJ.

Pubmed

This is a free search engine where the abstracts on life sciences and biomedical topics can be accessed easily. Just like that when we go for search engine it gives us lot of articles which help us to refer and write a good research paper.

AJOL

This was free that launched in the year 2004, in order to increase the functionality of the site. This is an African journal where we can get more number of peer-reviewed research works inside a single database.

Hubmed

This is an alternative one for the previously discussed database. This will really help us in getting information related to medicine.

Google Scholar

Google scholar is a free web search engine where numerous literature based text will be available. In fact for the faculty members it is much useful nowadays. They can check their name inside this and find what are the papers they have published so far. This will really help them to know their citations as well as the h index and i10 index. Another important thing is once they click on the topic written by them it will show the formats of citations we need it can be MLA, APA, Chicago, Harvard and So on. We can click on any citation format which we really want.

JSTOR

This is a digital library which includes journals, books and primary sources. Here we have more than thousands of books and primary sources which will really help the new generation to have a look on the various sources in order to do their research work as well as their assignments.

Indian Database

Indian Database are as follows: Shodhgangotri, Shodhganga, EshodhSindhu, ICSSR Data Service, INDCAT, VIDWAN: Expert Database, Microsoft Academic, Mandely, DOAJ and DOAB. These Indian databases will really help each and every one in collecting the secondary sources.

Shodhgangotri

Is a database where we can get numerous synopses from where we can have a literature review to write a good research paper as well as to get an idea related to the topic we search.

Shodhganga

This is a repository of thesis and dissertation where we can get more information of the topics we have in our mind and we can connect or discuss with those uploaded thesis.

Indcat

     This is a free online based one, which help us to get the books, thesis, in serial order which is really a type of library which contains information bibliographically. It make us to locate where the books easily.

DOAJ

     The full form of this is Directory of Open Access Journals. We can get various journals from this database. We may make use of the journals in order to get information for our own means.

DOAB

     This is an indexed one to access peer-reviewed open books. It's actually a free of charge one, which is available for our need.

Plagiarism

     In order to verify plagiarism, here are the tools which normally people uses. Like Ithenticate, Turnitin plagiarism checker, Urkund, Plagscan, Scannyeassy and Ossico. These will help us in knowing how much percent of plagiarism is there in a written document so that we can go for the changes in order to get rid of plagiarism. The most important thing that we have to keep in mind is we have to name from where we have taken the source if not it will be under plagiarism. The indication of phrases inside the bracket as well as the quotation marks will help us to get rid of plagiarism. The easy way to getting rid of plagiarism is to rewrite the statement or the word differently. To make double check of the words and sentences are very important to avoid plagiarism. I can see the growth of my education in one way of using a plagiarism checker is prepostseo. This is in fact all in one tool. People can check plagiarism, they can rewrite their article, here they have paraphrasing tool, even text summarizer and grammar checker in a way these all will help them in writing a good research paper as well as to write a neat and tidy assignment. Though the limit is only thousand words but those who prefer for free they can just like that upload 1000 words and again check the rest by uploading rest of the content. If not they can go with the premium. But that will not make any difference. One side it will show the original content and on other side it shows the paraphrased content which will really make us to verify how the differences have been made.

7. Word Processors and Note-Taking Apps :

     On discussing about the growth of education with the supporting apps, the upcoming apps will really be a justification to it. The paper urges to showcase the unknown and the less known apps, which are really useful to the present generation to make use of in order to save time, and to do their research paper and assignment without much tension.

Google Docs

     This helps people to save their typing work, as well as any translation can be translated by using this app. This can be used in Android, iOS, or in a web app.

WPS Office

     This is a Full-fledged office suite, where we can work all in one, side by side. It makes people to save time by creating spread sheets, presentations, and PDF documents at the same time work on it simultaneously.

Office Online

     This is a Microsoft Office which can be accessed for free.

Jarte

     This is a free word processor that works as a WordPad engine. Makes students and faculty to export their documents to PDF and HTML files.

Evernote, **Google Keep** and **OneNote**

These are the note-taking apps, which really help us to take notes on the research work we do. These apps are really handy to use rather than going in search of a pen and a paper. When we go for a conference these apps will be the supporting pillars to have our notes saved for long time.

Time-Managing Apps

Here are the time managing apps which makes people to set time to do their task within the stipulated time.

Pocket

It may be Posts or articles, that can be read later, as it is saved in one place called pocket. It is our wish to decide whether to read the article now or later.

Todoist

This is a free time manager, which helps to set deadlines. So without hurry burry we can do our allotted task on time.

Wunderlist

This is similar to, To-do list app. This app helps us to stay on the track and remember the schedule of the program we have to do it earlier. Normally people will have short and long term plans, on such cases if they have to finish their paper earlier or to take long time, accordingly they can set time here to complete the task as per their schedule.

8. Apps to Improve Productivity :

Once the research paper or assignment is completed as per our knowledge is concerned, there may be some improvement may be necessary if we feel to do. On such case, these are the apps which help to review our task and keep us stay focused on our current task.

Any.do

This makes students or faculty to review their tasks.

IFTTT

This is to create short automation sequences without any coding skills.

RescueTime

I personally felt, this is a needy tool for each and every one, who do their research and shows the growth of education in fact. This helps the researcher to get report of all the websites that they have visited, even the apps they have used.

StayFocusd

Really make us to stay focused on our current task

Write or Die

This is a Web-based tool which helps us to be in touch with our task.

Vocabulary Boosters and Dictionaries

While writing research paper or assignment, we will be absolutely in need of dictionary references, on such case, rather than going and searching a dictionary, there are handy dictionary apps that stand to be a witness in showcasing the growth of education. Here are they:

Merriam-Webster Dictionary

This is like a word games, which aim to increase ones vocabulary in a way it will be a good knowledge giver when we are writing a thesis, research paper or assignment.

Cambridge Dictionary

This in fact a best thesis, research paper or assignment statement generator I can say.

The Free Dictionary

This app is a full-fledged features filled app I can say. Why because, here we can make a check related to thesaurus, idioms, acronyms, and make things used. Further it can be viewed as a visual grammar book, and also as an encyclopaedia of articles.

9. Tools for Conducting Research :

In order to complete the research work or to do literature review certain apps are really handy tools. Here the **Mendeley** which is one among them that helps to complete any type of research, as well as help to do literature review, make us to check out with annotations, and manage our research articles that we have got from various databases. **Mindmup** and **Bubbl.us** are the other great tools which help people to do mind mapping. Later **WolframAlpha** is a knowledge gaining app for variety of people who may belong to any disciplines.

Grammar Checkers

To do Grammar check, here are the best tools that obviously improve our writing style. **Hemingway Editor** is an app that helps to improve writing style, helps to indicate long or very complicated sentences and change those into simple ones. Thereby by using this app we can get a clear content or sentences that are understandable.

Ginger is another app that helps to find and correct all types of grammar mistakes. This is really easy go one as it helps to edit text.

Grammarly clearly corrects the mistakes which are not even spotted by any word document.

Other Apps

Rather than free or subscribed databases, there are apps where we can get database of essays, term papers, research papers and theses as many as we want.

Ask for Papers is one among them, which is a largest database of essays, term papers, research papers and theses. This is an unlimited access app, which includes more than 100 different subjects. Simultaneously makes us to save our favourite article save and helps us to refer later.

Academic Writing in English

This is an app that teaches students to compose essays, experimental reports, dissertations and academic articles. Here it has features like interactive exercises, checklists, and a glossary.

EasyBib

This is a Free app, which helps to create citations for our bibliography.

NoteLedge

This is like a Notepad that can be used in iOs, Android, Windows and Mac. This makes us to write, save pictures, record audios and videos all in one app.

Writer

This helps to take notes without distractions. We can use this app in smartphone or tablet. It helps us to put our ideas into writing, and make us know how far we have done our task.

[CHANNEL] TED Talks

This is an app where we can go through YouTube Channel of 90,000 plus recorded speeches, which really saves our time.

Typeset.io

Students and researchers can easily copy-paste or upload their research paper on Typeset and they can follow any citation style they prefer. This an "autoformat" Typeset which will generate your research report within few seconds. Further it has a quality of inbuilt Plagiarism and Grammar check apps too.

Scrivener

This is a writing app that is normally used by novelists, screenwriters, non-fiction writers, students, academics, lawyers, journalists, and translators, which actually help them to build a story outline, write down characters, and build manuscript naturally.

10. Most Interesting Apps :

- **ORIGIN**, which is used to Import date, plot graph and analyse result
- **OVERLEAF** is an online latex editor that helps people to write and edit at the same time.
- EVERNOTE helps us to manage research note, organise ideas, plan day to day task as we prefer.
- **CANVA** helps the people to create image for conferences and so on.
- **RESEARCH RABBIT**, this is like Spotify where in Spotify we come across huge collection of songs thereby in Research Rabbit we can find huge collection of Research Papers. This shows Network of Research paper in such a way highlights the more cited one.
- **CHAT PDF** is nothing but Chat with PDF and gets answer. This is similar to Chat GPT. This app summarizes research work discussed in the PDF.
- **CONSENSUS** is a Scientific Evidence.
- **PLAG.AI** is a Repository of articles, where the articles can be checked perfectly. Here it highlights similarities through the paper that were uploaded 10mins ago too.

11. Websites :

Here are the useful website tools that help the present generation to do their research work or the assignment perfectly.

- **CHATDOC.COM**, is a website, where we can Upload any article and ask questions in the given space. For example we can as This Article is about what? What Methodology does the author used? Through the article, what is his or her Findings? In a way it gives us good understanding, and saves our time in gathering information we need.
- **EXPLAIN PAPER** is another website, where we can upload PDF and we can just highlight the text, thereby this website gives explanation to the highlighted text.
- **HUMATA** is same as the before discussed website, where we can upload and ask questions.
- ELICIT.ORG is a website, where we can Ask research question, thereby in this website we can see research articles and summary on the other side.
- **WORD TUNE READ** is same, we have to upload PDF or paste link or paste text so that we can get the Summary of entire article.
- **QUILLBOT, SPIN BOT and GPT –MINUS 1** are Paraphrasing tools that help to replace words.
- **PAPER DIGEST** is a copy with DOI number. This can summarize the article in few words.
- **CITE FAST** is a Format for reference.
- **MY BIB** helps to do Citation. Here the video articles can also be cited along with various documents that have been downloaded.

12. Conclusion:

Thus to conclude, the present paper urged to make the students, research scholars and faculty to be aware of the noted apps and tools, in such a way these will really help them in writing a research paper or an assignment they need to do. This highly showcase the growth of education, in a way, the present generation are at the need of using these tools to improve their knowledge and to move or run challenging up with the fast moving world.

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The role of socio-cultural transmission in language evolution

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Language, no less than other aspects of human behaviour, is a subject to intentional interference. It is notable that no other species on this planet has a communication system like ours, yet we take language for granted. The study of language evolution comes up with a series of challenges in terms of our wishes of study not being aligned with the available data about that particular area. Language is basically a series of entangled dynamic systems, such as biological evolution (evolution detects learning mechanism), individual learning (it biases linguistic evolution) and cultural transmission (it ensures the linguistic infrastructure to be disintegrated according to the fitness landscape of a place).

Languages are intertwined with religion, music, culture, cuisines and patterns of socialisation etc. All of these factors separate us from other animals and they are more connected with human cognition ; on top of that, language is what makes us exclusively human. For example, song birds have some overwhelming similarity with humans through their bipedal motility and their capacity to create digital vocal communication. The notable segregation is seen in the melodiousness of their voice which humans don't have. Then again, Gorillas are anatomically and mentally closer to humans but they do not have melodious voices.

The above considerations underline the significance of the role of biological evolution, which differentiate the evolving of human beings to be a specific one in terms of having an advanced and intelligent brain with the production of language. With all these specific characteristics, human brain have created the cultural phenomena, rituals and practices in response to the ever-changing natural, social and cultural dynamics.

In language transmission and evolution, learning new *dialects* or *communication styles* of a particular group or community becomes a part of their other subculture or behavioural states and this entire involuntary procedure is known as **accularation**. In this aspect, let us go deep into some crucial factors engrossed in language evolution below-

Learning Second Language :

When a group of people with multilingual backgrounds meet, various possibilities gather and among them, learning and teaching a second language becomes prominent. When a number of

languages are involved, things take time, effort and a lot of alignments. There are a lot of examples seen in tacit or deliberate agreements reaching into a place whereby one language gets into the top of the choices for international transmission purposes where different language- speakers are engaged in the motive. For example, during the era of the Roman empire, the western half broadly used Latin as the centralised language and the eastern half was more into speaking Greek. While it was the mediaeval period in Europe, Latin emerged as the international language for the educated, higher class societies and it was taught as the second language in many schools. The surge of the French language as an diplomatic asset of cultural, diplomatic and military reputation is related directly to its accomplishment of fame-garnering position as a language of international language until the 20th century.

Then during World War II, the replacement of French was done with English and it was widely used in the fields of science and technology, international trades and businesses etc. Slowly yet steadily English got the recognition of being the major international language in the world of external affairs, with a huge number of countries welcoming English as their first foreign language to be mandatorily taught. Thus, the extension of English-language-teaching was introduced all across the globe. This took an incredible amount of hard work and effort in spreading the English language at all levels of communication for the first speakers of other languages.

When Nationalism Influences The Language :

The natural flow of linguistic changes and distribution of languages is not restricted to its facilitations from international cooperation and acceptance. Language as an effective force for nation-states has been long used as a manipulative political asset for different linguistic tribes. Multilingual states can exist but the frequency of linguistic rivalry and strife are disruptive. We can see a series of language riots in Belgium between French and Flemish speakers and even between rival vernacular groups in India. Again we can see the upsurge of the Irish language getting the crown of being Ireland's first official language after getting independence from Great Britain as a symbol of patriotism. Language becomes a target for attack or oppression if the ruling authorities consider a particular culturally small group as an inferior one or a rebellious one. For instance, American Indian children were forbidden to speak any language other than English in their schools, some students in Wales were restricted to speak Welsh in British state schools in Wales etc.

Translation in Language Evolution :

The large-scale effects of cultural transmission of different languages are deeply embedded in the translation procedure. A continuous interpretation and interrelation between two incomprehensible languages have been possible only with the help of translation and translators without any kind of suppressive or dominant mentality.

Translation before the invention of writing, was spontaneous and oral; professionally specialised persons with translation work are called interpreters. Translation is predominantly known as the conversion of a written text from one language to another, but the professional interpreters come into the scenario in a very strong and alive way with the invention of real-time oral translation devices in the international conferences.

The tasks of the translators from every aspect such as oral, manual or written, are almost the same, but the technical expertise and stylistic adjustment are more needed in the translation between written texts. While organising the literary texts, the main conflicts take place while doing the exact translation of each word. As far as the meaning of an entire sentence is not altered, the translated version is taken as valid. Basically these problems arise due to the mismanaged functioning of the language. Languages always function within and as an entitled part of cultures and cultures are different from each other.

The translation of poetry seems extremely difficult as the better the original poem is, the riskier the translator's task gets. Poems, presented in rhymes, assonances, alliterations and metaphors throw challenges to understand the conveyed message of the poet. The most a translator can do is to match the stylistic organisation of the poem with the original language with the suitable resources from their own language. A satisfactory literary translation for a poetry is very hard for a literal word-to-word rendering due to its lexical, grammatical and metrical structurisation.

Notable shifts in the translation world through advanced machine translation have been implemented after the growth of internet and social media in the late 1990s and it has been able to ease the translation work to a great extent.

Messages and Codes :

Some confidencial messages demand for their sophistication and mysteriousness which are to be decoded by a specific single person or a specific group of persons. These come under the territory of diplomatic exchanges, operational texts in wartime, and some transferation of commercial information. The developments in telephony and the birth and growth of the internet has made protection against the unnecessary and unauthorised reception of texts. As codes and ciphers are more helpful in conserving the written messages, the techniques of decipherment and decoding have also been developed. The importance of these techniques are embedded in reading and interpreting written inscriptions through the application of 'code-cracking' methods.

Iterated Learning Model for Linguistic Evolution through Cultural Transmission :

Kirby, Cornish and Smith in 2008, introduced an experimental method for analysing the powerful effect which cultural transmission has done on language, and this method represented the very first experiment on human participants to come to a conclusion that the cultural transmission of language results integrally into the appearance of linguistic design without any particular designer.

There were some modified variables which proved the resilience of the experimental paradigm. The modifications which were added to the experiment method are listed below :

1) An auditory modality was added in the learning phase by means of a synthesised voice.
2) A variety of meanings, such as shape, colour and number.
3) A massive syllabary form where initial randomly-generated languages were integrated.

This experimental version had taken a completely different approach to the intergenerational filtering method, where participants were provided with equal sized learning material to

promote a more even and restricted experiment. Against all the modifications presented as inhibitors, the learning ability for the artificial languages has been heightened over the course of the time. Also, there arose a problem in the manifestation of less forthcoming consmopositional linguistic structure. It simply resonates with the fact that even though languages become easier to learn, the compositional structure doesn't emerge. But there must exist one of the characteristics or mechanisms applied to prove that the languages go through their successful transmission.

The results show that the mechanism proceeds through a different type of linguistic adaptation. A consequence of the shrinking single-space sampling during the experiment makes one language easier to learn and hence, the chances are likely higher for an harmonious between receiving a signal and meaning as the experiment develops.

To add more general findings from the experiment of *Iterated Learning Model* conducted by Kirby, Cornish and Smith in 2008, we notice two more important aspects. First, the experimental result is vulnerable to the experimental environment and small changes in the variables will alter the result and make the process complex with unexpected effects. Second, a language which doesn't get to transmit through signal-space in the given bottleneck will undergo a phonological optimisation procedure before it becomes convincing enough to the evolutionary grammatical structuration by a medium of disintegration.

This article tries to answer the question why language is structured the way it is and not in other ways. It simply gives some easy procedures, notes and significant ideas, how we as a species have gone through biological evolution, and crucially how the language is transferred between speakers. While language has made us learn about the different types of learning processes we should expect, it has also given us different experimental studies to confirm. This article has gone through one of those most approvable processes as well as various different factors that determine the socio-cultural effects for a language to evolve and thrive.

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A Reality Check Of Physical Education Programme: For Physical Fitness and Mental Fortitude

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Abstract: In 1940, at the first time a comprehensive school health programme was conceived with six major components for good health and a balanced mind. These were medical care, hygienic school environment, school lunch, health, yoga and physical education. Before the NEP 2020, in 1968 and in 1986 educational reforms physical education was also an essential component. But, between the years 1990 to 2016, the estimated proportion of all deaths due to non-communicable diseases has increased from 37.09% to 61.8%. Non-communicable diseases mainly heart disease, atherosclerosis, diabetes, high blood pressure, high cholesterol, thyroid and obesity are referred to as lifestyle diseases. The two major reasons for lifestyle diseases are unhealthy eating and physical inactiveness. Thus, the researcher finds a complete mis-match between the execution of Physical education in students at elementary and higher educational stages and the statistics of public health.

Key Words: Physical education Programme, Non-communicable diseases, Lifestyle Diseases in India.

INTRODUCTION:

Since 1940, in India, 'The Physical Education' program is the inception of a holistic school health program for promoting overall well-being and mental equilibrium. This included medical care, a sanitary school environment, nutritious school meals, health education, yoga, and physical education.

In the curriculum of elementary to higher secondary education, throughout, at every stage, 'The Physical Education' topics are there. But, when we see the health related data of common people, we find a complete failure in the execution of that knowledge.

Since independence, crossing life expectancy by 67 years and by declining infant mortality under five, India has progressed a lot in the health sector. India has eradicated many diseases like polio, guinea worm, yaws, tetanus etc. However, a stark transformation occurred between 1990 and 2016 when the estimated percentage of deaths attributable to non-communicable diseases surged from 37.09% to 61.8%. Non-communicable diseases are also known as lifestyle diseases. These non-communicable diseases primarily include conditions like heart disease, atherosclerosis, diabetes, high blood pressure, high cholesterol, thyroid disorders, and obesity, collectively termed as lifestyle diseases. In metropolitan cities 35-40% of the residents suffer from diabetes. Since 1955 the number of obese people including children in India has more than doubled. Because of stress, compared to rural areas, mainly men in urban areas suffer

from high blood pressure and high cholesterol. Nowadays children are also suffering from chronic obstructive pulmonary disease (COPD). The leading cause of COPD is smoking, however, in India, 1 in 4 with COPD have never smoked. Between 1990 to 2016 in India heart diseases have increased by 2.3 folds. One out of every five adults are affected from cirrhosis of the liver which tolls to 2 million deaths. Though cancer is not a lifestyle disease, constant exposure to cosmetics and household products containing carcinogenic elements increase the risk of cancer and every year cancer patients are increasing. According to WHO, in India, non-communicable diseases claim 6 million lives. Especially, after COVID 19 people are badly facing mental issues too.

The two major factors behind the prevalence of lifestyle diseases are: unhealthy dietary habits and a lack of physical activity. Consequently, the research findings reveal a significant disparity between the implementation of physical education in elementary and higher education and the prevailing public health statistics.

OBJECTIVES OF THE RESEARCH:

1. To study 'The Physical Education' topics of the curriculum that are being taught in every class in schools.
2. To study the outcomes of 'The Physical Education' learnings in day-to-day life of common people.
3. To study the health data of common people related to 'Lifestyle Diseases'.

RESEARCH METHODOLOGY:

In this research two methods had been adopted:
1st. Content Analysis
2nd. Comparative Analysis

Secondary data collection had been adopted in this research.

LITERATURE REVIEW:

1. **Varsakiya** (2015): Lifestyle Intervention for Diabetic patient in Ayurveda: It has reflected that due to fast changing lifestyle and increased consumption of high fat diets, junk food and decreased physical activities, especially engineered out exercise from daily life both in the workplace and leisure have contributed in rising burden of Type 2 Diabetes mellitus and other non-communicable diseases. As per Ayurveda, Madhura, Guru, Abhiyshandi dietetic articles indicating indulgence in high calorie diet along with leisurely lifestyle devoid of physical exercise plays a major role in the manifestation of type 2 Diabetes mellitus.

2. **Joardar** (2020) Non Communicable Diseases: Challenge Ahead: Non-communicable diseases (NCDs) are of long duration and generally of slow progress. The four main groups of NCDs are Cardio-vascular diseases, Cancers, Chronic Respiratory diseases and Diabetes. The NCDs kill 38 million people worldwide annually (63% of global deaths). Almost three quarters of the NCD deaths (28 million) occur in the low and middle income countries. In India, 60% of all deaths are attributable to NCDs, making

them the leading cause of death- ahead of injuries and communicable, maternal, prenatal, and nutritional conditions.

3. **Arya-Arya** (2019) Association of Physical Activity with Overweight and Obesity in Adolescents (10-14 Years) in Schools of Chandigarh, India: Scientific cognizance about physical activity and well-being is of little importance if people cannot apprehend it and relate it to their lives. Obesity is a condition related to excess adipose tissue mass affecting children as well as adults, also defined as an upsurge BMI of more than 30. Incessant upsurge in overweight and obesity amongst children and adolescents is one of the utmost trepidations leading to lifestyle conditions like atherosclerosis, dislipidemia, hyperinsulinemia, type 2 diabetes mellitus, hypertension, cardiovascular diseases, arthritis and most of behavioral glitches are few of the ramifications of obesity.

4. **Mental fortitude training**: An eMental fortitude training: An evidence-based approach to developing psychological resilience for sustained success. To this end, the narrative is divided into three main sections. The first section describes the construct of psychological resilience and explains what it is. The second section outlines and discusses a mental fortitude training program for aspiring performers. The third section provides recommendations for practitioners implementing this program. It is hoped that this article will facilitate a holistic and systematic approach to developing resilience for sustained success.

5. **Effect of a Game-Based Physical Education Program on Physical Fitness and Mental Health in Elementary School Children**: Promotion of healthy active behaviors should start from early ages, as behaviors learned in youth are more likely to endure. Promotion of health is a necessary action that should be carried out at all ages, as it may trigger benefits both in terms of disease risk reduction and prevention, regardless of the phase of life. Such benefits become even more evident if health is fostered from youth. Although all variables involved in the enhancement of health should be taken care of, health-related physical fitness for the physical domain, and self-esteem, psychological well being, anxiety, and stress for the psychological domain, seem to play a key role in youth's proper growth.

6. **UNESCO**: Theme: Social & Human Sciences: (France. 17 November.2017), International Charter of Physical Education, Physical Activity and Sport. Article1. The practice of physical education, physical activity and sport is a fundamental right for all. Article 2. Physical education, physical activity and sport can yield a wide range of benefits to individuals, communities and society at large. Article 3. All stakeholders must participate in creating a strategic vision, identifying policy options and priorities. Article 4. Physical education, physical activity and sport programmes must inspire lifelong participation. Article 5. All stakeholders must ensure that their activities are economically, socially and environmentally sustainable. Article 6. Research, evidence and evaluation are indispensable components for the development of physical education, physical activity and sport.   Article 7. Teaching, coaching and administration of physical education, physical activity and sport must be performed by qualified personnel. Article 8. Adequate and safe spaces, facilities and equipment are essential to quality physical education, physical activity and sport. Article 9. Safety

and the management of risk are necessary conditions of quality provision. Article 10. Protection and promotion of the integrity and ethical values of physical education, physical activity and sport must be a constant concern for all. Article 11. Physical education, physical activity and sport can play an important role in the realization of development, peace and post-conflict and post-disaster objectives. Article 12. International cooperation is a prerequisite for enhancing the scope and impact of physical education, physical activity and sport.

FINDINGS:

The purpose of Physical Education is good health and a balanced mind from very tender age and throughout the journey of life
Its aims for optimum development of child's:
• Physical growth
• Intellectual development
• Emotional development
• Social development

In curriculum, from 1st to 10th standard, it teaches about:
1. We and our environment
2. Human Body: physical fitness and health
3. Food and Nutrition
4. Social Health and relationships with others
5. Safety and Security
6. Consumer Health

The above note underscores the crucial importance of instilling a comprehensive understanding of health and physical education in children.
Thus the objectives and methods for achieving this are outlined as follows:
1. **Promoting Health Awareness**: It is imperative to nurture a sense of both individual and collective responsibility for leading a healthy life. Children need to be educated about healthy living practices at home, school, and in their community.
2. **Assessing Health Status**: Children should be equipped to recognize their own health status and identify health issues. This awareness empowers them to take appropriate remedial actions.
3. **Safety Awareness**: Educating children about safety rules and how to avoid hazardous situations is essential to prevent accidents and injuries.
4. **First Aid Education**: Equipping children with basic knowledge of first aid for common illnesses and injuries is vital.
5. **Posture and Physical Well-being**: Children should be guided to develop correct posture habits in various physical activities to prevent posture defects and physical deformities.
6. **Neuromuscular Coordination:** Participation in a range of physical activities should be encouraged to enhance neuro-muscular coordination and promote physical fitness.
7. **Excellence in Games and Sports:** Fostering a culture of excellence in games and sports among children is important for their overall development.

8.   **Psychosocial Well-being:** The curriculum should address psychosocial issues within the school, home, and community. It should equip children with values, skills, self-control, concentration, peace, and relaxation techniques to combat stress and fatigue.

9.   **Inclusion:** The needs of differently-abled children must be integrated into the curriculum, ensuring they receive the support and opportunities they require.

10. **Interdisciplinary Nature:** Health and physical education should not be confined to a single instructive area. While some aspects may overlap with other subjects like environmental science, science, and social science, it should maintain its unique core content and be considered on par with other subjects.

11. **Expertise and Experience:** The experiences of teacher educators and individual teachers who have been involved in curriculum development and material creation should be leveraged and scaled up in both rural and urban schools.

12. **Integration with Government Initiatives**: Syllabus development should align with government efforts to promote excellence in games and sports, ensuring access to both indoor and outdoor activities for school children.

This holistic approach aims to enhance children's skills and nurture their talent in games and sports, while also promoting their physical, mental, and social well-being.

This extensive list of topics seems to cover a wide array of subjects related to health, well-being, and physical education for children. Here's a concise note summarizing the diverse subjects addressed:

The curriculum for primary education, beginning from standard one, aims to introduce children to various aspects of health and physical well-being. From an early age, children are educated about crucial elements such as body awareness, growth and development, nutrition, healthy eating habits, and the importance of sharing.

Furthermore, the curriculum encompasses lessons on safety rules, hygiene practices, and the significance of water in the body. Children are taught about personal care, safety measures during emergencies, and the importance of maintaining clean surroundings. The syllabus also emphasizes the connection between health and the environment, educating children about the impact of their surroundings on their well-being.

Additionally, the program emphasizes the development of physical capabilities, including neuromuscular coordination, strength, and judgment, and fosters skills in various physical activities. It promotes healthy habits, cleanliness, and personal hygiene, instilling values of social relations and emotional well-being. The importance of a balanced diet, food hygiene, and nutrition are underscored, along with promoting awareness about common diseases and their prevention.

The curriculum also integrates various interdisciplinary subjects such as environmental studies, sports education, and media literacy. It seeks to build a foundation for a healthy and well-rounded lifestyle, encouraging children to be responsible citizens and stewards of their environment. The program aims to foster a holistic development approach that encompasses physical, psychological, and social well-being, while nurturing a sense of ethics and responsibility towards society and the environment.

Above topics are covered with sub-topics in subject text books, work books and resource books. It is also compulsory for every student, in every standard to attend weekly sports and arts classes. Hence, it was understood that in 10 years of Physical Education, a child will grow with good health.

1.This research highlights the gap of execution of "Physical Education programme

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2.This research highlights the inadequacy of theoretical knowledge alone
3.There is a surge in Lifestyle Diseases among patients
4.Increasing mortality rates attributed to Lifestyle Diseases

The study shows that a large percentage of people in India are inactive with fewer than 10% engaging in recreational physical activity. Therefore, urgent steps need to be initiated to promote physical activity to stem the twin epidemics of diabetes and obesity in India.

1. The theory of John Dewey, 'Learning by Doing', should be implemented strictly in 'The Physical Education' program.
2. 'Doing' is always helpful in 'Learning.'
3. Even doing small activities, bring significant impact on personality.
4. Physical, mental and emotional, all activities are related to each other.
5. For a better society, a thoughtful personality is always helpful.
6. A habit of aesthetic activities keeps a person happy.
7. Prevention of lifestyle diseases is possible through the grounding of 'The Physical education'.
8. To keep lifestyle diseases away, the two key points must be followed:
   - Focus on nutritious food
   - Stay active both mentally and physically

WHO (World Health Organisation) has put forward the key facts:
- Physical activity has significant health benefits for hearts, bodies and minds.
- Physical activity contributes to preventing and managing non-communicable diseases. such as cardiovascular diseases, cancer and diabetes.
- Physical activity reduces symptoms of depression and anxiety.
- Physical activity enhances thinking, learning, and judgment skills.
- Physical activity ensures healthy growth and development in young people.
- Physical activity improves overall well-being.
- Globally, 1 in 4 adults do not meet the global recommended levels of physical activity.
- People who are insufficiently active have a 20% to 30% increased risk of death. compared to people who are sufficiently active.
- More than 80% of the world's adolescent population is insufficiently physically active.

In 2018 WHO launched a new Global Action Plan on Physical Activity 2018-2030 which outlines four policy actions areas:
1. Creative active Society
2. Creative active People
3. Creative active Environment
4. Creative active System

'More Active People for a healthier world.

RECOMMENDATION:
Marcus Tullius Cicero has explained how to look after your mental health using exercise. 'It is exercise alone that supports the spirits, and keeps the mind in vigor.'
1. Revamping Physical Education for a Healthier Future.
2. Implementing outcome-based Physical Education.

3. The proportion of marks in theory and practical maybe a sign differently for health and physical education as a compulsory subject up to 10th level and that as an optional elective subject at the plus two level.

4. Evolve and use the system of comprehensive and continuous evaluation given the applied nature of the subject.

5. Aiming for a decline in Lifestyle Diseases cases and decreased fatality rates due to Lifestyle Diseases, more research is needed for how to inculcate habits of regular physical activity and healthy eating.

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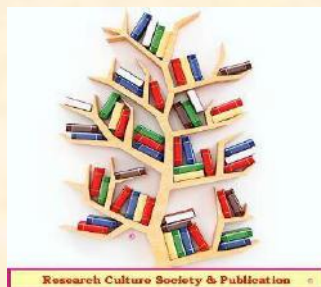
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