Ponda Education Society's College of Education,
Farmagudi, Ponda, Goa

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Augmentation Of School, Higher And Professional Development Education

Ponda Education Society's

College of Education,
Farmagudi, Ponda, Goa

(Under IQAC and Research,
Development and Innovation Cell)

&

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Jointly Organized

VIRTUAL NATIONAL CONFERENCE

On

Augmentation Of School, Higher And Professional Development Education

28th April 2023

Conference Directors

Mr. Ratnadeep Khade **Dr. Swapna Khairnar**

Conference Editorial Team

Dr. Sanjay Randive **Mr. Rajendra Chavan**
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MESSAGE FROM PRESIDENT OF PONDA EDUCATION SOCIETY

RAVI S. NAIK

PRESIDENT OF PONDA EDUCATION SOCIETY

MLA, PONDA CONSTITUENCY, GOA

It gives me an immense pleasure to know that Ponda Education Society's College of Education, Ponda and Dnyan Ganga Education Trust's, College of Education, Thane has jointly organized a first Virtual National Conference on a theme "Augmentation of School, Higher and Professional Development Education". I am aptly impressed by the theme chosen by organizers which is relevant and addresses a broad spectrum of quality education in context of National Education Policy 2020. We stand at a special point in development and enhancement of education.

We need to engage the community of scholars in the field of education and establish dialogues across the various disciplines for the quality improvement of education. We must never forget that education have been fundamentally determined by society. I wish to extend my warm greetings and felicitations to the organizers and participants and covey my best wishes for the success of the virtual Conference and for the publication of the special issue of journal to mark the occasion.

MESSAGE FROM SECRETARY OF PONDA EDUCATION SOCIETY

MR. RITESH RAVI NAIK

SECRETARY

PONDA EDUCATION SOCIETY

I am delighted to know that Ponda Education Society's College of Education, Ponda and Dnyan Ganga Education Trust's, College of Education; Thane has jointly organized their first Virtual National Conference on a theme "Augmentation of School, Higher and Professional Development education" on 28th of April, 2023.

I am certain that meaningful deliberations and discussions on Augmentation of Education during virtual conference had definitely provided new insights to all delegates pertaining to quality education in light of NEP 2020. Apart from conference discourse, this special issue of journal form will be research compendium to refer for all academicians and researchers related to all levels of education.

I congratulate all authors for publications of their research work in this special issue journal.

My sincere greetings and best wishes to the organizers in this endeavor.

MESSAGE FROM CONFERENCE PATRONS

PROF. B. D. PATIL

CHAIRMAN

DNYAN GANGA EDUCATION TRUST, THANE.

NEP 2020 has drawn attention to the need of improvising the quality of education currently provided by the Indian educational system. If quality education is instilled, conveyed, preserved, and continuously improved from primary to tertiary level of education, quality in Indian education will become a reality. The truth is that, given the difficulties we face, education requires transformation rather than reform. The secret to this transformation is to personalize education rather than standardize it, to base success on identifying each child's unique skills, and to place students in settings where they want to learn and where they may innately identify their true passions. In light of this; we, Dnyan Ganga Education Trust's College of Education (B.Ed.), Thane, Maharashtra made the decision to jointly host a conference with Ponda Education Society's College of Education, Farmagudi, Ponda, Goa on the topic of "Augmentation of school, higher, and professional development education" where discussion over improving the quality of the curriculum, pedagogy, assessment, accreditation of institutions, and continuous professional development were highlighted on large extent. These achievements deserve special attention because they show how much we have contributed to the field of adult learning and higher education.

Our objective to spread education and serve learners in education contexts is furthered by the conference's supportive and collaborative

atmosphere. The contributions made by the writers to the proceedings that follow show how committed and dedicated they are to education field as a whole in a variety of settings and contexts. The proceedings not only build a legacy of scholarly contribution for the authors, but also for all the stakeholders in education fraternity.

We would like to thank the Advisory Committee, Conference Directors, Editors, Convenors, Co-coordinators and the organizing committee for all their hard work on this conference proceeding. We would like to thank and congratulate all the authors who presented their research at the virtual conference and ultimately for print in this edition of proceedings. As we continue to grow as an organization, your participation will be increasingly important to carrying out the work we are charged with from our mission which is to prepare and empower learners to be successful by helping them to develop their knowledge, skills and abilities needed to adapt and thrive in our increasingly diverse and ever-changing global world.

MESSAGE FROM CONFERENCE PATRONS

MRS. ANITA PATIL MORE
DIRECTOR
DNYAN GANGA EDUCATION TRUST, THANE.

It gives me immense pleasure to acclaim Dnyan Ganga Education Trust's, College of Education (B.Ed.) and Ponda Education Society's College of Education, Farmagudi, Ponda, Goa for organizing virtual National Conference on the topic of 'Augmentation of school, higher, and professional development education' on 28th April 2023. I am certain that meaningful deliberations and discussions on Augmenting NEP 2020 in various aspects of teaching learning, assessment and managerial level functioning at school, higher, and professional development was profoundly highlighted during the conference and shall definitely provide new sights to all participants. Apart from conference discourse, this special issue of the proceedings will be research compendium to refer for all academicians and researchers related to all level of education.

My deepest appreciation goes to dynamic Principals of both the B.Ed. Colleges and also the energetic conveners of the conference, complaisant coordinators of the conference, vibrant supportive faculty, supportive non-teaching staff, enthusiastic student – teachers, esteem participants and behind the curtain pain takers for the conference who turned this conference into great success. I accolade Editor and publisher of this special piece of knowledge.

MESSAGE FROM CONFERENCE DIRECTORS

MR.RATNADEEP N. KHADE
I/C PRINCIPAL
PONDA EDUCATION
SOCIETY'S COLLEGE OF
EDUCATION
PONDA - GOA

DR. SWAPNA KHAIRNAR
I/C PRINCIPAL
DGET'S, COLLEGE OF
EDUCATION
THANE,
MAHARASHTRA.

Greetings to all,

We are grateful to the Management of Ponda Education Society's College of Education, Ponda, Goa and Dynan Ganga Education Trust's, College of Education, Thane, Maharashtra, for providing us constant support and motivation, for successfully organizing this Virtual National Conference. We would like to congratulate all the faculty members, admin Staff and student- teachers for striving hard for the smooth execution of the conference proceedings

Teacher education in India is now in a transformational phase. We are in a compelling era where global conditions demand change and adaptation to the dynamic requirements of futuristic School Education. Both the colleges are committed in enhancing the quality of Education.

NEP 2020 has mainly thrown light on quality education in the Indian Educational setup. Quality in Indian Education will be a reality if quality education is inculcated, transferred, maintained and continuously improvised

from primary to tertiary level of education. Considering this, we organized a conference on ‘Augmentation of school, higher and professional development education’ wherein quality enhancement of curriculum, pedagogy, assessment, accreditation of institutes and continuous development of stakeholders on school, higher and continuous professional development education and providing practical oriented program, were emphasized.

Many faculties and students from various disciplines presented papers on various sub-themes and participated in the conference enthusiastically. There were enriched interactions between resource persons, paper presenters and participants during technical sessions which created an erudite environment. This research compendium is the compilation of research papers presented during the conference.

We take this opportunity to congratulate all the participants for presenting their papers and contributing in augmentation of knowledge. Hope this coordination continues and we all collaboratively achieve the goal of Education.

MESSAGE FROM CONFERENCE CONVENERS

ASST. PROF. MR. KETAN KAMBLE
PES'S COLLEGE OF EDUCATION,
PONDA – GOA

ASST. PROF. MS. PRATIBHA KAMBLI
DGET'S COLLEGE OF EDUCATION,
THANE – MAHARASHTRA

In order to remain abreast to latest method and techniques of teaching and learning in accordance to NEP 2020, our colleges jointly organized virtual national conference on augmentation of school, higher and professional development education across diverse context on 28th April 2023. With an objective to fulfill our commitment to global education, to promote the inner moral compass; this research compendium which is compilation of research papers presented in the national conference; will highlight the balance required and enable us to take the helm and steer our way through the complexities, exhibiting compassion and dedication in implementing NEP 2020. Many faculties and student from various disciplines presented papers on various themes and participated in the conference. There was real good dialogue exchange between chairpersons, paper presenters and participants during technical session creating an erudite environment.

Relying on the strong foundation laid by our College Managements, this issue of conference proceedings seeks to boldly showcase the talent of all stakeholders and paper presenters who have contributed towards its making. While acknowledging Principals, for their perseverance and constant motivation, Conference Coordinators for timely support and Managing Committee for their persistent backing; helped us deliver efficiently. We would like to extend our gratitude to the Editor for putting in hours of hard work and relentless dedication for compiling this composition of knowledge.

Wish you all an enlightened reading!

MESSAGE FROM CONFERENCE CO-ORDINATORS

ASST. PROF. DR. SACHIN SALGAR
PES'S COLLEGE OF EDUCATION,
PONDA – GOA

ASST. PROF. MS. RACHANA DAS
DGET'S COLLEGE OF EDUCATION,
THANE - MAHARASHTRA

To embark on we initiate thanking the Almighty God, who is for eternity with us inspiring and strengthening us to triumph over all challenges that we come across from conceptualisation till conference proceedings. We express our heartfelt gratitude to our College Management, Principals, Chief Guests, Key Note Speaker, Conveners, our students, participants and members of the Managing Committee for guiding us at every developmental stage of the conference and entrust us to work on this journey. We thank all for their relentless co-operation and timely insights.

This volume of conference proceedings provides a vivid reflection of the conference compilation as a kaleidoscope of all the research that paper presenters undertook to aid in understanding the theme - Augmentation of School, Higher and Professional Development Education. This collection of voluminous knowledge is intended to strengthen thebond of long-lasting relationship with the educators and students along with the pursuit of academic excellence, encouraging all stakeholders to become independent and perceptive thinkers, confident enlightened learners, keep a worldview of various aspects going around the globe and socially-responsible citizens.

Here is a humble hope that you will find this issue engaging as it will give you an insight of NEP2020 and its implementation which is required in fostering and exfoliating our student's potentialities by providing opportunities for the successful learning and overall growth.

Happy Reading!!!

FROM EDITORIAL BOARD
EDITORIAL TEAM

Asst. Prof. Dr. Sanjay Randive

Asst. Prof. Mr. Rajendra Chavan

Asst. Prof. Dr. Sachin Salgar

Asst. Prof. Mr. Ketan Kamble

We, the members of editorial board are delighted to publish a special issue of a journal on virtual national conference with theme **"Augmentation of School, Higher and Professional Development education"** on 28th of April, 2023 jointly organized by Ponda Education Society's College of Education, Ponda - Goa and Dnyan Ganga Education Trust's, College of Education, Thane – Maharashtra.

The conference aimed at bringing together all stakeholders like research scholars, college and school, principals, teacher educators, college professors, school teachers, assessors from all faculties and student-teachers for sharing and exploring various facets of augmentation of education at all levels.

The conference was successful endeavor of colleges. Papers on conference themes were presented. Theme wise sessions were chaired in professional and

efficient way by chairpersons who were selected for their vast contribution in the subject.

All papers received during conference were reviewed by Dr. Sanjay Randive, Mr. Rajendra Chavan and Dr. Sachin Salgar. The review was communicated to respective author/s. Later, edited papers were received by author/s as per review. All edited papers were listed in index alphabetically with impartial gesture. Compilation and indexing of papers for special issue of journal was done by Mr. Ketan Kamble and Dr. Sachin Salgar

Present special issue of journal is the compilation work of research papers presented in virtual conference according to its main theme and sub themes.

This journal shall act like a permanent record of research papers discussed in technical session of the virtual conference.

This special issue shall be permanent record of paper presented in the conference. They indicate the state of development in area of education augmentation and will be invaluable to all stakeholders in the field of education for that reason.

Finally, it is highly appropriate to express heartfelt thanks to Mr. Ravi S. Naik, President of Ponda Education Society, Mr. Ritesh R. Naik, Secretary of Ponda Education Society, Prof. B.D. Patil, Chairman of Dnyan Ganga Education Trust and Ms. Anita Patil, Director of Dnyan Ganga Education Trust for being our backbone throughout this venture,

Mr. Ratnadeep N.Khade, Principal of Ponda Education Society's College of Eucation, Ponda – Goa and Dr.Mrs. Swapna Khairnar, Principal of Dnyan Ganga Education Trust's,College of Education for their able guidance and leadership, all faculty members, non-teaching staff and student teachers of both colleges for all possible support extended directly and indirectly.

We are grateful to Prof. Dr. Sunita Magare for being chief guest of conference. We are also appreciative to Prof. Dr. Sunayana Kadle who delivered excellent talk as keynote speaker, Dr. Meena Kute and Dr. Pratima Pradhan who served as chairpersons, without their expertise the conference could not have been the success that it was. We also acknowledge the authors, without whose expert input there would have been no conference.

We also recognize the important association of Dr. Rakesh Ramraje, Author Global Online Electronic International Interdisciplinary Research Journal (GOEIIRJ) by publishing conference papers in international and peer reviewed journal with high Journal impact factor journal.

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INDIAN NATIONAL EDUCATION POLICY 2020 - AUGMENTATION OF SCHOOL EDUCATION

Dr Anjali S Jadhav
Satish Pradhan Dnyanasadhana College, Thane

ABSTRACT

Education liberates the intellect, unlocks the imagination and is fundamental for self respect. It is the key to prosperity and opens the world of opportunities, making it possible for each of us to contribute to a progressive, healthy society. The National Education Policy 2020 has therefore been transformed into the framework of this reform, which could help to build new education system in the country. The gap between current state of learning outcomes and what is required must be bridged through undertaking major reforms that bring the highest quality, equity and integrity into the system. This paper outlines the salient features of NEP 2020, its merits and demerits. Finally some suggestions are proposed for its effective implication towards achieving its objectives.

KEYWORDS - Education, Opportunity, Quality.

INTRODUCTION

Education is a self enlightening process. School is a holy institution where the minds of the students are cultured. The self confidence of the students should be raised through education and the students should not lose their self confidence at the time of examination or using the learned skill.

OBJECTIVES

The National Education Policy 2020 has many initiatives to improve the quality and the broadness of the education system in India. The objectives of this study on National Education Policy 2020 are :

1. To highlight and overview the policies of the newly accepted school education system (NEP 2020).
2. To discuss the merits and demerits of school Education Policy 2020.
3. Suggestions for further improvements for the effective implementation of NEP 2020 to realize its goal.

METHODOLOGY

The methodology consists of a conceptual discussion on highlighting the National Education Policy framework and various sections of NEP 2020. Identifying the innovations made

using the focus group discussion method. The implications of this policy are analysed using the predictiveanalysis technique. Many suggestions are given based on Focus group analysis.

HIGHLIGHTS OF NATIONAL EDUCATION POLICY 2020

This policy is modified with a new pedagogical and curricular restructuring of 5+3+3+4 coveringages 3-18.

1. **Foundation stage : Early childhood care and education.**

   Five years foundation stage which starts from third year of child's development provides flexible, play-based, activity-based and inquiry based learning. This comprises of alphabets, languages, numbers, colours, shapes, logical thinking , problem solving, drawing, painting, drama, music etc. It also includes developing social capacities, sensitivity, good behaviour, courtesy, ethics, personal and public cleanliness, team work and cooperation. The aim of this stage is to attain physical and motor development, cognitive development, cultural development and development of communication.

2. **Preparatory stage**

   Three years preparatory stage consists of activity based learning. This stage gradually introduces classroom learning with textbooks.

3. **Middle school education stage**

   The middle stage will comprise three years of education building with the introduction of subject teachers for learning and discussion of the more abstract concepts in each subject like Science, Maths, Arts, Social Science and Humanities. Experimental learning within each subject, and explorations of relations among different subjects will be encouraged and emphasized.

4. **Secondary education stage**

   Four years of multidisciplinary study, building on the subject oriented pedagogical and curricular style with greater depth, greater critical thinking, greater attention to life aspirations, and greater flexibility with students choice of subjects. Students would continue to have the option after grade 10 and re-entering in the next phase to pursue vocational or any course available in Grades 11-12 ,including a more specialized school, if so desired.

IMPORTANT POINTS IN THE NATIONAL EDUCATION POLICY 2020

The 10+2 structure will be modified to 5+3+3+4. This consist of three years of preschool and 12 years of school. Preschool will be from third to six years of age. Class 1 and 2 at the age from six to eight years. For Class 3 to 5 the age group is 8 to 11 years. Class 6 to 8 age group will be 11 to 14 and for class 9 to 12 age group will be 14 to 18.

1. Young children learn and grasp nontrivial concepts more quickly in their home language /

mother tongue. Hence medium of instruction at least up to grade 5 or preferably till grade 8 should be the home language / mother tongue / local language. This will be followed by both public and private schools.

2. Research shows that children learn the languages quickly between the ages of 2 to 8 and multilingualism has great cognitive benefits to young students. Children will be exposed to different languages starting from the foundational stage onwards but with the particular emphasis on the mother tongue.
3. All the curriculum and pedagogy, from the foundation stage onwards, will be redesigned to be strongly rooted in the Indian and local context and considering the culture, traditions, heritage, language etc. in order to ensure that education is maximally relatable, relevant, interesting, and effective for our students.
4. Reduction in the content and increase flexibility of school curriculum and emphasis on constructive rather than rote learning. All the textbooks shall aim to contain the essential core material with discussion, analysis examples and applications which is important on national level but at the same time contain any supplementary material as per local contexts and needs.
5. Students from age group 6-8 has to learn extra-curicular activities such as Gardening, Carpentry, handling Electrician's art, Blacksmith's art, Cermist art, etc. For this the school will assign 10 days of leave from curriculum. During the vacation the students can be engaged in activities like Art, Quiz programme, Crafts, Sports. The students can visit historical places, places which are rich in culture and tourism. They can meetvarious artists known in their fields and also visit Higher educational institutes in their area. Such activities will encourage students to recognize their interest and ability and generate enthusiasm.
6. Assessment of the students should be based on Continuous Comprehensive Evaluation. It should be Formative and not Summative. The student should develop scrutinizing attitude with rational and logical thinking ability. This is required for the overall development of the students.
7. For standard 10^{th} and 12^{th} board exams will be continue but even these will be re-designed with holistic development.
8. Large number of merit based scholarships shall be instituted across the country for studying 4-years integrated B.Ed. programmes. A key incentive for teaching in rural schools will be the provision of local housing near or on the school premises or increased housing allowances.
9. Teacher eligibility tests will be strengthened to inculcate better test material, both in terms of content and pedagogy.

10. The harmful practice of excessive teacher transfer will be halted, so that students have continuity in their role models and educational environments.
11. Teachers will be given continuous opportunities for self improvement and to learn thelatest innovations and advances in their profession. Each teacher will be expected to participate in at least 50 hours of continuous professional development (CPD) opportunities every year for their own professional development.

NATIONAL EDUCATION POLICY -- MERITS

1. The government aims to make schooling available to everyone .
2. For children up to age of 8. A National Curicular and Pedagogical Framework for Early Childhood Care and Education will be designed and developed by NCERT.
3. The Education Ministry is to set up a National Mission on Foundation Literacy and Numeracy. The responsibility for successful implementation for achieving the foundation of numeracy and literacy for all students till class three falls upon the states of India.
4. Appropriate authorities will conduct the school examination for grades 3,5,8. The board exams for grades 10 and 12 will continue but the NEP 2020 aims to re-design the structure with holistic development. By the year 2030, it will be mandatory to have at least a four year B.Ed. degree for joining the occupation of teaching.
5. For making the students prepared for future pandemic situations, online academic willbe promoted on a larger scale.
6. Allows mid-day meal for pre-school children right from the age of three.

NATIONAL EDUCATION POLICY – DEMERITS

1. According to NEP 2020 , students willing to complete their graduation have to studyfor four years while one can easily complete diploma degree in two years. This might encourage the pupil to leave course midway.
2. The concept of learning in mother tongue though psychologically sounds appropriatebut can be a hurdle in the higher education, especially if the student is migrating to various places due to the parents job profile.

CONCLUSION

1. The variousideas proposed to improve the education system will require through brain storming session so that whole thing will be organized properly.
2. Using artificial intelligence in the curriculum though look lucrative is actually expensive and require good infrastructure.
3. Presently teachers are appointed on contractual basis they receive minimum salary. Under such circumstances it will be difficult for them to participate in the various activities

wholeheartedly. All the teachers should receive incentive when they get involve in the extracurricular activities (Putting extra efforts in various activities).

4. Regular workshops should be conducted for teachers regarding the teaching methodology and various innovative ideas related to it.
5. For all the concern activities finance is essential. About 6% of GDP budget was allocated for education by previous Education Commissions, but the fact is it was hardly implemented or was not sufficient. Though the government is going through financial problems it should allocate more budget for the education in order to haveknowledgeable generation.
6. The syllabus of 11th and 12th std. should be same throughout the country for the respective education board. The same syllabus and textbooks should be applicable for the competitive examination (NEET,JEE etc.) after 12th std.

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A STUDY OF THE DEVELOPMENT OF INTERVENTION PROGRAMME FOR IMPROVING MATHEMATICS VOCABULARY AMONG STUDENTS OF MIDDLE STAGE.

Anushca D'sa
Designation: B.Ed teacher trainee

Dr. Sachin Salgar
Assistant professor

ABSTRACT

In this action research study of my classroom of 8th standard mathematics, I investigated "the study of the development of intervention programme for improving mathematics vocabulary among students of middle stage". I discovered that knowing the meaning of the vocabulary did play a major role in the students. It is my belief that mathematics is a language, and to be fluent in that language one must be able to use and understand vocabulary. With the use of vocabulary quizzes and mathematically-centered vocabulary activities, student scores andunderstanding of mathematics concepts can be increased. I discovered that many of the students had never been exposed to consistent mathematical terminology in their elementary education, which led many to an unfavorable impression of mathematics. As a result of my research,I plan to incorporate vocabulary as a regular part ofmy mathematical teaching. As the students understood the language of mathematics, their confidence, attitudes, and scores all began to improve.

Keywords: Intervention program, Mathematics vocabulary, Middle stage

INTRODUCTION

Mathematics vocabulary is a set of words used in mathematics subjects, just like English words. Mathematics vocabulary includes words like decimal, reciprocal, fraction, determinant, quotient and dividend, and many others. Teachers need to strengthen students' mathematical vocabulary along with teaching concepts. As we teach important early mathematics skills we need to use mathematics vocabulary to show how these skills relate to our everyday life. By making this connection with our learners early in their education we are building a strong foundation for them to be confident and effective with mathematics in their future.

To better understand mathematics one cannot survive on numbers alone; there has to be meaning and reason that goes along with the calculations and formulas. Mathematics is a language that is written using numbers and symbols that can often confuse those who do not understand its detail and intricacies.

The importance of Understanding mathematics vocabulary has a correlation to better

problem- solving and conceptual understanding of mathematics itself. It is important for children to use correct mathematical vocabulary and have an understanding of what these terms mean. Simply, before a student can start to solve a problem, they must first understand that problem. Understanding can take many forms, but the most basic is understanding the language used. Mathematics concepts and vocabulary are not easy to understand for every student. Mathematical vocabulary can be tricky because some general English language words have different meanings in mathematics.

With the implementation of a vocabulary program, which is a program where the researcher develops a list of essential words they believe the students need to know for their class, and the struggles the students have had on their problem-solving notebooks, I was led to create an action research project that would focus on whole-group direct instruction of mathematics vocabulary. I hoped the direct instruction and use of different teaching strategies for

The vocabulary would increase the students' knowledge of the mathematic concepts. With this increase of knowledge, I believe the students' daily homework assignments, problem-solving skills, and test scores would improve.

A) STATEMENT OF PROBLEM

The purpose was to study the development of intervention programme for improving mathematics vocabulary among students of middle stage.

B) OPERATIONAL DEFINATIONS

- **Intervention program –**An intervention is a combination of program elements or strategies designed to produce behaviour changes or improve health status among individuals or an entire population. It provides targeted instruction in a specific skillor set of skills to students who are at risk for poor learning outcomes.
- **Mathematics vocabulary** - In mathematics, it is a list or collection of words or ofwords and phrases usually alphabetically arranged and explained or defined
- **Middle stage-** Middle stage of education covering 3-4 years of academic study isformed by 5^{th}-8^{th} class consisting of students aged between 12 to 14 years.

C) OBJECTIVES OF THE STUDY

i. To determine the current status of performance of the students using mathematics vocabulary.
ii. To determine the difficulties faced by students in learning mathematics vocabulary.
iii. To develop different strategies for teaching mathematics vocabulary.
iv. To study the effectiveness of innovative methods of teaching mathematics vocabularyon solving problems.

v. To give appropriate suggestions based on the findings

A) VARIABLES OF THE STUDY

Dependent variables	Student's performance in std VIII
Independent variables	Intervention program to improve mathematics vocabulary
Intervariant	Mathematics vocabulary

D) ASSUMPTIONS OF THE STUDY

- The researcher had difficulty in carrying out the action research project.
- The students have difficulty in learning mathematics vocabulary.
- The teachers do not pay much attention on mathematics vocabulary.
- The intervention program helped the students to improve their mathematicsvocabulary.

E) HYPOTHESIS OF THE STUDY

❖ **Research hypothesis (H1)**

There is a significant difference in between the mean performance of pre-test and post-test.

❖ **Null hypothesis (H0)**

There is no significant difference in between the mean performance of pre-test and post-test.

F) SCOPE OF THE STUDY

The research has been carried out in Holy Spirit Institution, Margao -Goa for the students ofstandard VIII division C on the topic "Mathematics Vocabulary". This will help the teachersto adopt different methods in teaching mathematics.

G) LIMITATIONS OF THE STUDY

- The sample size selected was 39 students.
- The study was limited to std VIII C only.
- The study was only restricted to Holy Spirit Institute, Margao - Goa.

The researcher could not give personal attention to each student in the class due totime constraint

REVIEW OF LITERATURES

Winsor (2007) conducted action research in his ELL classroom along these same lines of thinking. While teaching at a High School in Southern California, Winsor began searchingfor

ways to help his students learn mathematics. Winsor used Word Squares, among other techniques, to help students learn and understand mathematical terms. A Word Square is a note card that has been divided into four parts: one part containing the mathematical term in a student's primary language, another part containing the term written in English, a third part containing the definition writing in either language in the student's own words, and a fourth part containing an example of the term. Winsor found that using Word Squares "required more of them (the students) than just memorizing a definition" (p. 374). Winsor stressed the importance of not only having a space for the term and definition but also making sure the students have an example that is directly related to the term to help make the connection.

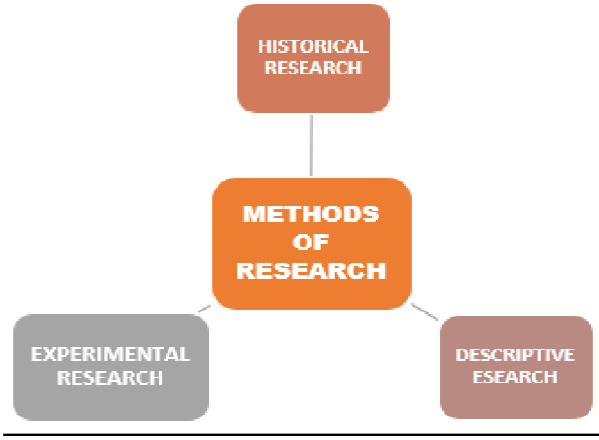
Harmon, Hedrick and Wood (2005) provided research in the area of content vocabulary and the role it plays within a mathematical classroom setting. Their work provides understanding that influences learning across different disciplines. "In content area reading, students need a thorough understanding of vocabulary because the words are labels for important concepts" (Harmon, Hedrick, Wood, 2005, p. 265). To be a good mathematics student one needs to be able to read mathematics, and more importantly, understand what he/she is reading. However, since many students do not possess a good mathematics vocabulary, they have difficulty reading and understanding mathematical content. "Mathematics presents challenging reading because this content area has more concepts per word, per sentence, and per paragraph than any other area" (Harmon, Hedrick, & Wood, 2005, p. 266)

Orme and Monroe (2002) discuss in their research the importance of vocabulary and how it affects learning. They note that proper vocabulary is critical to any experience involving language. "Many terms have meanings in the realm of mathematics that differ from their meanings in everyday usage" (Orme & Monroe, 2002, p. 140). I have had some of my students get confused when I ask for the product of two numbers because their first impression of a product is something that you buy from a store, not two numbers that are multiplied together.

RESEARCH PROCEDURE OF THE STUDY

A) METHOD OF RESEARCH

Mixed research is a purposeful mixing of methods in data collection, data analysis and interpretation of the evidence.



The methods of research are of three types :

Historical research-

Historical research is a process of collecting and interpreting data aboutpast events or ideas in order to find how they affected the present events and ideas.

Descriptive research-

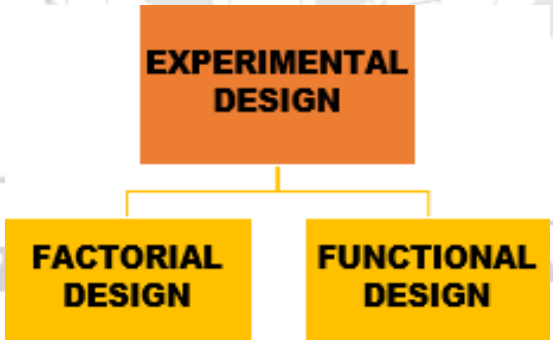
The descriptive research design involves observing and collecting data on a given topic without attempting to infer cause-and-effect relationships.

Experimental research-

Experimental research is a kind of study that rigidly follows a scientific research design. It involves testing or attempting to prove a hypothesis by way ofexperimentation.

The researcher has adopted Experimental research method to check the effectiveness of mathematics vocabulary on students learning and achievement performances. It involved the sampling of pre-test and post-test.

A) **EXPERIMENTAL DESIGN**



The researcher has adopted Pre- test and post-test single group design. Experimental research method was used to check the effectiveness of mathematics vocabulary on students learning and achievement performances.

Experimental designs can be of various types. The selection of the particular design dependsupon the factor like nature, the types of variables and purpose of the experiment.

Single Group Design - this design involves a single treatment with two or more levels. In which a group of subjects are administered a treatment and then are measured or observed. Itdoes not have an experimental group or design group.

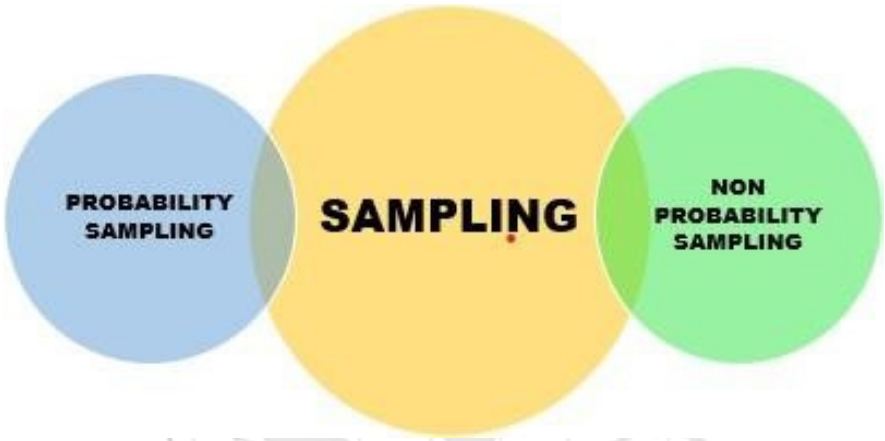
Pre-Test- It is an assessment measure given to participants before they have undergone sometype of treatment as part of a research study.

Post-Test- It is an assessment measure given to participants after they have receivedtreatment as part of a research study.

EXPERIMENTAL METHOD

- Step 1, the pre-test was given.
- Step 2,the intervention program was held.
- Step 3,a post-test was given.

B) SAMPLING OF THE STUDY



Here are several types of sample design that fall into two main categories:

- **Probability sampling-** This sampling method uses a random sample from the pool of people or items you're interested in, called the population, and is random or chance sampling
- **Non probability sampling**– This sampling is not random, as the researcher deliberately selects people or items for the sample.

39 students were selected from Standard VIII Division C from Holy Spirit Institute, Margao -Goa. Sampling was done purposively by using Non probability sampling method.

A) TOOLS OF DATA COLLECTION

Different tools that can be used for data collection are interview, observation, checklist, ratingscale, questionnaire, survey and rubrics.

The tools that were used in this study was

- Before the program, a Pre-Test was given
- During the program, an Intervention Program was held where different strategies and activities like mathematics journals, mathematics vocabulary bulletin, words of the day, Pictionary, and fill in the blanks and it will help in boosting mathematics vocabulary and in solving mathematics problem.
- After the program, a Post-Test was given.

Innovative methods

Teacher taught the mathematics vocabulary by using innovative methods of teaching. Somemethods are with the help of a textbook and chalkboard, charts, games, activities and vocabulary quiz. Post-test was given to check the effectiveness of the lesson.

A) STASTICAL TOOLS FOR DATA ANALYSIS

The statistical tools used by the researcher were t-test (paired two samples for mean) and Pearson's coefficient of correlation (r). Besides these statistical tools, mean ad standard deviation were used.

OBJECTIVE WISE DATA ANALYSIS

OBJECTIVE 1: To determine the current status of performance of the students using mathematics vocabulary.

Pre-test was conducted on mathematics vocabulary to assess student's present status of performance on mathematics vocabulary. The test of 10 marks was carried out. Here were 10closed ended questions. It was found out that the students did not achieve a good score in thetest.

PARTICULARS	N	MEAN	STANDARD DEVIATION
Pre-test	39	5.28	1.57

Table4.2 (a): Descriptive statistics of pre-test

In the table **4.2 (a)**, it can be seen that 39 students participated in pre-test. The mean (M) ofthe pre-test is **5.28**.The standard deviation of the pre-test is **1.57**.

OBJECTIVE 2: To determine the difficulties faced by students in learning mathematics vocabulary.

To assess student's performance a Pre-test was conducted on mathematics vocabulary The test of 10 marks was carried out. It was found out that the students did not achieve a good score in the test. From this we come to know that the students are poor in their mathematics vocabulary. The students were facing difficulty to solve mathematics problem.

OBJECTIVE 3:To develop different strategies for teaching mathematics vocabulary.

It was found out the researcher conducted a number of activities in the intervention program.The activities were planned in such a way that it would improve and boost the student's mathematics

vocabulary to solve problems. later an achievement test was conducted on the mathematics vocabulary.

Students can improve their mathematics vocabulary by using different strategies like mathematics journals, mathematics vocabulary bulletin, words of the day, Pictionary, wordpuzzles and fill in the blanks.

Mathematics journal: adding word and definition to the journal helped students tomemorise the mathematics vocabulary.

mathematics bulletin boards: It is dedicated to vocabulary, a great start as visual reminders toreinforce mathematics vocabulary lessons.

words of the day: To reinforce specific concepts, one student has to come up with a word ofthe day or week, during the lesson.

Pictionary: Students draw a vocabulary word and their teammates have to guess it correctly.

Fill-in-the-blanks: Students come up with a fill-in-the-blank sentence for their teammates to compete or race to identify which vocab word is being defined or described.

OBJECTIVE 4: To study the effectiveness of innovative methods of teaching mathematics vocabulary on solving problems.

Here the researcher is testing null hypothesis

MEAN, STANDARD, R AND T SCORES OF PRE-TEST AND POST-TEST

PARTICULARS	N	MEAN	STANDARD DEVIATION
Post-test	39	7.64	1.32

TABLE4.2 (b): Descriptive Statistics of Post-Test

In the table4.2 (b), it can be seen that 39 students participated in post-test. The mean (M) of the post-test is **7.64**.The standard deviation of the post-test is **1.32**.

TESTING OF NULL HYPOTHESIS

Particulars	N	Mean	S.D	df	r	LOS	Cal 't'	Table T	Result
Pre-test	**39**	5.28	1.57	38	0.56	0.05	6.20	1.46	**Null hypothesis rejected**
Post-test	**39**	7.64	1.32						

TABLE 4.2 (c): t-test results of Pre-Test and Post-Test (Testing Of Null Hypothesis)

In the table **4.2 (c)**, it shows that the pre-test and the post-test was conducted on a total sum of**39** students. The degree of freedom (df) shown in the above table is **38** for the pre-test as wellas the post-test. The mean (M) found for pre-test was **5.28** and the mean (M) found for the post test was **7.64**. The level of significant shown was **0.05**. Pearson's correlation was found to be **0.56.** Therefore, it shows that variables i.e scores of Pre-Test and Post-Test is having a high positive correlation.

It is interpretated that since calculated 't' value **6.20** is greater than table 'T' value **1.46** (t > T) at level of significance **0.05** , Therefore we can say that null hypothesis HO is rejected atlevel of significance **0.05** and the research hypothesis is accepted.

It is interpreted but there is a significant difference between the test scores of pre-test and post-test. As we can see that after the administration of interventions the post test scores increased and there was hence an improvement on the test scores of the students.

Objective 5: To give appropriate suggestions based on the findings

Based on the result of the pre-test and the post-test it can be suggested that

- The teacher can use more innovative strategies to improve mathematics vocabulary.
- The teacher can use more innovative strategies activities like word puzzles,

CONCLUSION AND DISCUSSIONS

The researcher found out that instruction in the vocabulary improves the students' understanding of the mathematical concepts. The instructions and use of the vocabulary activities, the students asked fewer questions and the majority improved their daily homework and test scores. Also, the use of different teaching strategies allowed for the range of learning styles in the classroom and allowed mathematics class to be "fun", even if for a little while. Once the students were more aware of the vocabulary they were using and how it played an integral role in their lessons, they started to comprehend the concepts better.

For the pe-test the students were nervous and not confident while answering. The performance of the students in the pre-test was poor. After the intervention program on mathematics vocabulary the students were more confident in answering the post-test. The performance of the students in the post-test was higher as compared to the pre-test. Therewere lot of difficulties while carrying out the research project. The result of the present studies were having a resemblance with the researches done by Orme And Monroe (2002), Winsor (2007) and Harmon, Hedrick And Wood (2005)

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A STUDY ON AGENCIES OF TEACHER EDUCATION

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Abstract

The future of any society rests heavily on the shoulders of competent teachers. Civil civilization can only advance in education with the help of dedicated teachers. Contemporary teachers require access to state-of-the-art training to improve educational systems on a global scale. The United States is only one of many countries with schools devoted solely to teacher training and development. The government at all three levels in India provides funding for the continued education of teachers. Teachers can join any number of regional, state, national, or even international agencies. While their primary mission is to improve teacher education (TE), these groups aim to increase collaboration between top researchers worldwide and their global university peers. This study examines the regional, national, and international institutions in charge of educator preparation. There have been many efforts at the international, national, state, and local levels to ensure and improve the quality of TE worldwide. Various federal agencies have been established to coordinate and advance TE across the country; each has its mandate, priorities, and activities. They also facilitate collaboration between academics from different fields and prestigious institutions worldwide. The main goal is to give a comprehensive list of TE's main and affiliate agencies on a global, national, regional, and local scale. There are many TE institutions at the state, municipal, and federal levels of government, and we have discussed roughly a dozen. The primary goal of any TE program should be to give future teachers the tools they will need to be successful in their chosen fields. The Goods Dictionary of Education describes TE as all those activities and experiences, formal or non- formal, that may assist a person in taking responsibilities as part of the teaching profession or empowering him to discharge his duties more efficiently and competently. Teacher and administrative leadership development have the attention of more groups, agencies, and governments than ever before. The State Board of Teacher Education, the State Institute of Education, the State Council of Educational Research and Training, and the University

Departments of Education are only some examples of state agencies involved in TE. Each state also has its own National Institute of Educational Planning and Administration (NIEPA/NUEPA) and the national-level National Council for Educational Research and

Training (NCERT). This task has been assigned to UNESCO, an international group. Their significant aim is to improve the current TE system.

Keywords: Study, Agencies, Teacher Education, NCERT, and UNESCO

Introduction

The people who taught us as children profoundly impacted our development. Teachers shape the minds of future generations. Teachers in today's varied culture require consistent professional development to meet the demands of their students. Therefore, greater teacher preparation is essential for improving educational systems. Teachers with adequate training can better accommodate their pupils' diverse learning styles, ages, and cultural backgrounds (Aggarwal, 2010). Even the broad acceptance of recognized best practices and the development of novel teaching methodologies have substantially affected the educational system. Teachers can work together and develop their careers through TE organizations. This is especially true for creative methods that can evolve to meet the changing demands of the academic world. More local and national government departments exist today than ever before. The above organizations have made it their mission to reform educational methods and policies. Improving educational institutions requires a thorough investigation of available technological possibilities. A rise in the total number of institutions can be seen not just in India but worldwide as an outcome of the free flow of information. As an outcome, people's support requirements have changed. Teachers' pedagogical understanding must be up-to-date to respond to these changes. Several groups cover the bases when it comes to educational opportunities. Here, we will investigate the various regional, national, and worldwide groups that support and profit from TE. Even the government and non-government entities contribute to teachers continued professional development in India. TE organizations serve multiple purposes, such as fostering international academic cooperation and providing professional development opportunities for teachers. Everyone needs to be well-versed in many different areas. A growing number of Indian students is rising due to government initiatives.

Each state has its own set of laws. These groups emphasized developing both students and educators. Training future educators is a priority for federal, state, and municipal governments. Teacher preparation was highlighted as a priority in the NPE 1986 and 1992 Program of Action for Improving Educational Outcomes from the National Board for Professional Teaching Standards. The main purpose of TE organizations is to disseminate information. Teachers in these areas have greater access to the resources needed to adapt to modern classrooms' dynamic nature. Training and education programs in TE are supported by funding from the various Indian governments. The extent to which the government is involved in TE might vary from local to global.

Agencies of Teacher Education in India

In current culture, teachers are frequently among the foremost in their disciplines. A school's success depends on the quality of its teachers. A teacher must be well-trained to deal with today's quickly altering cultural milieu while satisfying each student's unique requirements. The educational infrastructure of any country must thus be enhanced by increasing the TE program. This man is well-versed in how children learn and grow, with his extensive educational background and teaching experience (Aggarwal, 2010). Teachers are essential to the functioning of every community or culture. Teachers are vital to the success of a well- functioning educational system. Teachers must be adequately trained to progress in a state's educational system. Several agencies around the country provide TE. At the state, regional, and national levels, in-service teachers in India are provided with training. An in-service TE program includes a variety of functions and procedures that must be considered at each stage. The fundamental objective of all three levels of government is to improve educational quality through various methods and approaches. Several agencies in India handle TE and professional development, as they are in many other nations. These agencies primarily concern international academic cooperation and instructor training (Kapur, 2018). There are TE agencies at the state, national, and worldwide levels.

All of these agencies are focused on making improvements to how TE works. Several TE agencies at the state, federal, and international groups have been considered in this study. More than just the national government has educational research and training bodies like the National Council for Educational Research (NCERT) and the Central Board of Secondary Education (CBSE). Diversity of academic practice is necessary to keep teaching methods current and to encourage educational innovations to enhance both the quality of instruction and the quality of institutions of TE. As a result of this, several training institutions have changed their titles to District Institutes of Education and Training (DIET), Colleges of Teacher Education (CTE), and Institutes of Advanced Studies in Education (IASE) (Azad &Kumar, 2016). Since then societal demands have brought about numerous changes. Continuing education is a responsibility that teachers have to themselves and the students they educate.

Agencies of Teacher Education at the District Level

Education councils and institutions have been established in every area to conduct various study programs to strengthen educational institutions, update education techniques, and stimulate TE innovations.

District Institute for Education and Training (DIET)

The Indian government established the District Institute for Education and Training (DIET) to enhance teacher preparation nationwide. As part of DIET's efforts to improve elementary school in-service teaching, several public services are being planned and implemented at the district level.

Teachers who want to enhance their skills and learn new things would benefit from DIET. Teachers employed can benefit from DIET instruction based on the most recent encounters in technical study and practice guidelines for classroom management. School teachers can use new technology techniques to assist students in learning. DIET focuses on the training of teachers for educational purposes.

- DIET offers a variety of programs for in-service teacher training and coaching to ensure that schools foster a culture of happy learning that encourages students to attend a class every day.
- The DIET offers several workshops and seminars for in-service teachers.
- The DIET advises the education department of the district on TE concerns.

- As a teaching and learning center for teachers and trainers, DIET may be used successfully.
- Since DIET, TEs have many career opportunities at their disposal.

Agencies of Teacher Education at the State Level

To enhance educational standards, update teaching methods, and disseminate discoveries in TE, every state has a variety of agencies dedicated to doing work in this field. These are the agencies at the state level that are responsible for teacher in-service training:

State Institute of Education (SIE)

High-quality education necessitates both Teacher preparation and the availability of relevant educational resources. The Maharashtra government responded to this issue by establishing the "State Education Institute" (SIE). At its inception, SIE primarily aimed to improve educational opportunities for lower-grader children. This policy includes higher education institutions. The "Maharashtra State Council of Education Research and Training (MSCERT)" was the name given to the organization after it was granted constitutional recognition in 1984.

State Council of Educational Research and Training (SCERT)

As per the State Council for Educational Research and Training (SCERT), you can find a betterteacher no matter where you live in India. In-service teachers from kindergarten through high school are all subject to the scrutiny of SCERT, an independent agency. Planning, management, research, evaluation, and teaching are the primary concerns of these professions (Kapur, 2018). Before their first day at work, small groups of pre-service teachers get training and orientation.

- Teachers in service are responsible for conducting individual and small-group activities.
- SCERT provides in-service teachers with workshops, lesson plans, curriculum development, and more.

- SCERT's education of educators improves teaching in new themes like ICT, health education, and adult pre-primary education.
- All teachers and regulators can use SCERT's in-service training programs.
- The SCERT's mandate includes the preparation of textbooks for teacher traininginstitutes.
- For those interested in becoming teachers, SCERT produces educational materials.
- This study aims to incorporate technology into TE programs for existing teachers.
- Support state governments in developing academic policy, enhancing school quality,and enhancing teacher training.
- SCERT designed an in-service TE curriculum in compliance with the NCTE'sstandards.

State Board Teacher Education (SBTE)

The Indian Education Commission (1974-66) should create a State Board of Teacher Education(SBTE) in each state to oversee the proper development of TE. In 1967, Madhya Pradesh's first SBTE was formed. It has recently been created in other states; however, West Bengal still needs to introduce SBTEs. As an outcome, the NCTE emphasized establishing this state board.

- Everything is considered by the SBTE when it comes to TE.
- With support from the SBTE, educational institutions around the state are working to develop and execute cutting-edge teacher preparation programs.
- Find out the basic standards for TE schools.
- The improvement of educational materials and the TE curriculum in the state.
- Requirements that TE institutions meet to be regarded
- Creating a framework for TE institutions to support one another.
- Admissions requirements for the TE program
- Effective development and assessment of student teacher
- Making a strategy to increase the amount and quality of TE
- Making changes to the TE curriculum, textbooks, and evaluation system in universitiesand public institutions.
- Departments within universities and other educational institutions must work togethermore closely.

Agencies of Teacher Education at the National Level

At the national level, TE agencies have been founded. Moreover, these bodies enable the exchange of ideas between national academics and world-renowned intellectuals. TE agenciesat the national level were examined as part of this study. Besides universities, the National Council for Teacher Education (NCTE), the University Grants Commission (UGC), and the National Institutes of Education Planning and Administration (NIEPA) are all higher educationinstitutions.

University Grants Commission (UGC)

University Grants Commission (UGC) was founded in New Delhi, India, on December 28, 1953. The Indian government handed up its authority to it in 1956. Providing financial aid to higher education schools is one of its primary responsibilities, as distributing federal and state funding. Existing colleges and universities in the state will get five-year grants, as well as newones. The UGC wants to raise the country's educational standards with TE committees. Each TE committee had seven members for two years. Attending conferences and seminars worldwide is possible for students accepted into exchange programs, thanks to various fundingoptions. Funding from the UGC enables faculty at institutions to carry out their research. In 1953-54, the Government of Education established a scholarship program for universities and colleges to investigate and assess educational themes chosen by teachers and approved by thecentral ministry (Howard, J. B.,2003).

- Assisting educational institutions in meeting their financial obligations.
- There should be guidance for the federal and state governments on distributing funding to institutions.
- University building and maintenance necessitate additional funding.
- The state must approve a five-year financial plan before the University may begin anew academic program or department.
- Over the following five years, funds for constructing a new public university will be given.
- Scholarships for university and college teachers are an important part of this effort.
- Providing financial aid to encourage the best level of research and teaching.
- With direct money transfers to universities and colleges, this technique is innovative.

National Council of Educational Research and Training (NCERT)

India's Ministry of Education established the National Council for Educational Research and Training (NCERT). The Indian Ministry of Education oversees the NCERT. In compliance with the Society Registration Act of 1961, the Central Government of India set up the NCERTon September 1, 1961. The NCERT, the academic branch of the Ministry of Education, is self-governing. Education programs and policies are developed and implemented by the Ministry of Education with the support of this agency. As an outcome, everyone interested in becoming a teacher or training future teacher must return to school. Thus, four regional educational institutes were established: Ajmer, Bhopal, Bhubaneswar, and Mysore. It also works with government agencies, academic institutions, and various other agencies to further the educational objectives of local public schools. In addition, the agencies collaborate with equivalents in other countries at national and international levels. Publications like books and journals convey research results to a

large audience. NCERT's websites have made it easier for the public to discover more about the institution. The NCERT has a department called the Department of Teacher Education (DTE). NCERT's Teacher Education Section plays a vital role in training teachers in the country. India is one of many countries reaping the benefits of the global information boom. As an outcome of this transition, societal norms have changed. To keep up with the latest developments in education, it is required that all teachers take annual specific training. Both the NCTE for the Recognition of TE and NCERT can meet these standards.

- Educating teachers by providing them with a curriculum and teaching techniques is possible.
- The department's primary goal is to provide TE education and outreach services to the community.
- There is also a list of programs for continuing education for teachers.
- The goal is to educate and develop school teachers.
- New teachers might take classes to understand the basics of classroom management.
- To begin educating on the TE in primary and secondary schools.
- Our goal is to create a concise overview of our instructional strategies.
- A state board meeting, as well as the SCERT conference, are held yearly.
- NCERT helps administer government-approved teacher training programs.
- An agency like the NCERT collaborates with various agencies to promote education.
- Numerous teaching and training methods are possible using NCERT's paradigm for education.

National Council for Teacher Education (NCTE)

Teacher development is crucial to the 1986 National Education Policy and the 1992 Program of Action for enhancing public school education. Key goals of the National Council for Teacher Education (NCTE) include planning and managing the extension of the TE system across the country and ensuring that standards and norms in the TE system are effectively maintained. That associated problems are adequately addressed (Dhull & Sharma, 2017). The NCTE was created by revising the Amendment Act of 1993 on August 17, 1995. India's Union Ministry of Education founded the NCTE in May of 1973. Since its inception in 1993, it has regulated all aspects of teacher training in India as a constitutionally-compliant legal agency. It is the NCTE's role in TE.

- NCTE is tasked with advancing standards in the United States under a 1993 law.
- NCTE is charged with compiling an annual report on the state of TE study, one of their most essential tasks.
- As part of its goal, NCTE advises the federal and state governments and the UGC on the

most effective ways to manage in-service TE.

- The NCTE is responsible for overseeing and coordinating all in-service teacher training programs.
- To be eligible to teach in a public school, a candidate must regularly satisfy NCTE requirements.
- The NCTE serves as the government's official provider of in-service teacher training.
- In-service teachers can brush up on their skills through NCTE's selection of courses.

National Institute of Educational Planning and Administration (NIEPA)

The creation of the National Institute of Educational Planning and Administration (NIEPA) bythe Ministry of Human Resource Development (MoHRD) has enabled this essential South Asian organization to concentrate on educational capacity building and research (Deemed to be University). The Indian government granted Deemed University status in August 2006 for its pioneering educational planning and administration efforts. NIEPA, like all of India's central institutions, receives funding from the Indian government. The agency's name has been changed to NUEPA to reflect its expanding responsibilities in government capacity building, research, and professional support services. To better represent their strategy, the building wasrenovated in 1979.

- Training in state and regional public education policy and administration.
- Educative research and study require integrated management and planning.
- To provide national and state-level administrative and planning guidance.
- Studying other countries' educational administration and planning can help us addressour educational issues.
- We are convening workshops and seminars on educational planning and administrationto motivate educators to develop creative ideas.
- We educate school officials on current educational trends and advances by holding orientation seminars.
- These include instructional technology, computer science, and the fine arts; these arejust a few instances.
- The publishing division hosted seminars and workshops to combine theory and practiceto develop research reports.

Rehabilitation Council of India (RCI)

It is recommended that children with moderate impairments get an integrated education whilethose with severe disabilities are placed in a SE program, as per the 1986 National Education Policy. The Rehabilitation Council of India (RCI) was founded as a statutory organization in 1992 to regulate rehabilitation training programs to ensure that the country's disabled population

receives the best care. A Memorandum of Understanding (MOU) has been signed between INCTE and RCI under their respective bylaws and processes in the following:

- Minimum criteria for the provision of TE preparatory courses with disability-specific expertise.
- Courses on special education are being developed for inclusion in general teacher preparation programs.
- Quality improvement in special education teacher training programs may be achieved by setting up joint inspection committees (JIC).
- We provide professional development opportunities for general and special education educators.

This means that the NCTE and the RCI are working together to create a special educationcurriculum that will have its inclusion in general teacher preparation programmers.

Agencies of Teacher Education at the International Level

In today's global economy, a country's higher education system, including its colleges and universities, is more critical than ever. The World Conference on Higher Education Partners was held in June 2003 in San Diego, California. To enhance the lives of the world's poorest people. Since this plan emphasizes quality assurance and cross-border mobility in higher education, students and other partners will be safeguarded against low-quality higher educationsupply.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

A country's higher education system and institutions have never been more closely linked to its success and development than they are currently. The World Conference on HigherEducation Partners was held in June 2003. Higher education is the only emphasis of the United Nations Educational, Scientific and Cultural Organization (UNESCO) because of the Millennium Development Goals and poverty reduction efforts. To benefit students from low- income and underrepresented groups, agency officials strive to increase the number of studentseligible to pursue higher education. Cross-border education and quality assurance are the focus of this initiative, designed to protect students and other participants against substandard educational services. UNESCO encourages international cooperation in higher education, research, and information exchange. It is the mission of UNESCO, a non-governmental agency,to protect and promote human rights and cultural diversity across the globe (International Decade for People of African Descent, 2014). They say educating society's most disadvantaged and disenfranchised populations is necessary to eradicate social stigma. UNESCO's principal mission is to promote peace and security across the world. Research, cultural exchange, education, and information sharing are just a few of how international collaboration may be developed. Equal access to justice and fundamental rights

for everyone, regardless of race, religion, or economic circumstance, is necessary (UNESCO - United Nations Educational, Scientific and Cultural Organization.). The use of academics qualified in their disciplines is encouraged by UNESCO. Instructors were responsible for teaching children about the world around them. It is widely accepted that young people are the country's future. They might significantly impact education and its delivery if they are in the right hands. The presence of qualified teachers is essential for high-quality education. Every day, teachers have a significanteffect on the world. Developing children's potential and inspiring a desire to study are all madepossible by this method. Teachers who have not received proper training are unlikely to meet the 2015 target for Education for All (Education of Teachers, n.d.). When the United Nations and UNESCO concentrate only on higher education, the Millennium Development Goals can be achieved, and poverty may be eradicated based on evidence-based policy responses to newtrends and advances in TE.

UNESCO and Teacher Education

- Open and remote learning, e-learning, and ICT integration with TE will be establishedas part of this effort.'
- To achieve national objectives, education policy and teacher training are essential.
- HIV/AIDS and life-skills training should be included in a national TE policy.
- Improved TE and training are the ultimate goals.
- Why guarantee that our students receive the personal touch, understanding, andjudgment they will need in the future from our teaching staff?
- A vital component of this effort is establishing connections and exchanging informationwith teachers in other nations with similar aims.

Conclusion

Preparing future teachers with effective tools is a central focus of TE. Teachers of now and tomorrow need preparation in various pedagogical methods to assist their pupils in meeting today's and tomorrow's problems. Therefore, TE groups place a premium on education, push for stricter guidelines within TE programs, and work to improve the quality of schools. Resources should be allocated to those who can have the most impact on improving the standard of education. Although each organization is distinct, they have a common goal of improving education quality. Teachers are highly regarded because of their positive impact ontheir student's lives and the educational system's performance. TE places a premium on ensuring that future educators have access to high-quality resources. Today's and tomorrow's teachers must be well-versed in various instructional approaches to guide students through thechallenges they will face effectively. As an outcome, TE organizations value education highly,seek greater oversight of TE initiatives and strive to improve

classroom practices. To the greatest extent possible, funding should go to those who can significantly enhance the quality of education. However, this study has attempted to define TE, its goals, its brief history in India, the organizations responsible for TE in India, its structure in the twenty-first century, and its funding sources. It shows that traditional studies of teaching and higher and professionaleducation need to be fused with TE work if we are to handle the complexities of the teaching profession and teacher preparation.

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DEVELOPMENT OF CAREERS POST-COMMERCE HIGHER SECONDARY SCHOOL PROGRAMME AND ITS EFFECTIVENESS ON STUDENTS

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Abstract

In the fast-changing and competitive climate of the twenty-first century students should be prepared by selecting the path they want to take and the goals they want to achieve in life, as both will contribute to their success. It is vital to organise career awareness sessions that will steer the potential of Students in the direction of their interests. The goals of this study were to learn about Students' understanding of careers post-high secondary school, to identify careers post-commerce high secondary school, and to create a career awareness programme - CPCHSS.A group of 72 Students from Fr. Agnel Multipurpose Higher Secondary School Verna Goa, batch 2022-23, were chosen using convenience sampling. A questionnaire was used to test Students' knowledge of career possibilities, and the results were reported in percentages. Data about careers post-commerce higher secondary school was gathered and analysed qualitatively using online resources. Meanwhile, the effectiveness of the CPCHSS programme was assessed using a teacher made test. The sample yielded quantitative data, which was evaluated using mean, standard deviation, t-test, and effect size. The findings demonstrated that students are unaware of career options post-commerce high secondary school, commerce and the CPCHSS programme design showed a significant change in pre-test and post-test scores on Students' awareness of career prospects. As a result, the CPCHSS program has proven to be beneficial.

Keywords : Career prospects, career awareness, Students.

Introduction

Commerce is defined as the trade of products and services between individuals or businesses. Any transaction in which money is exchanged for goods, services, or information is referredto as a commercial transaction. Because of the Internet and an efficient postal system, both firms and individuals may now conduct business easily. (Deswal, 2017). Students who study commerce gain the information, abilities, and attitudes required to successfully manage trade,

company, and industry. In response to the demands of business and society, independent professions such as Chartered Accountant, Cost and Work Accountant, Company Secretary, and Business Administrator (MBA) have evolved. (Shyju, 2016).

Table 1 The pattern of Commerce Education in India and Goa

School Education		Higher Education		Professional Education
Primary & Secondary level	Higher Secondary level	Under Graduate	Post Graduate and continuing education	Specialized and expertiseeducation
Class I to X under state/central board	Class XI to XII Science Arts Commerce Vocational	B.Com. and other specialization in B.Com.	M.Com MBA M.Phil. PhD	CA/CMA/CS/ Actuaries/Law/MBA

As shown in the table, all commercial activities fall under the purview of traditional commerce education. Commerce education is economic education. It is a technique of teaching that directly and indirectly conveys knowledge of business and management, banking and insurance, transportation and communication, economics and statistics, marketing and e-commerce, trade and industry, and other areas. Modern commerce education has opened up new disciplines such as e-commerce, e-media, internet, and management in response to the demands of the newly developing corporate world. This has recently been incorporated into commerce education. (Somani & Seema M, 2014; Gupta, 2021)

Furthermore, present curriculum does not effectively prepare Students for competitive assessments. The existing commerce education system does not educate Students for jobs demanding general knowledge or positions requiring specialised or specialist competence. It has now come to the point where a commerce graduate cannot even work as a qualified bookkeeper. As a result, he is trapped in a "no man's land" in which he cannot be both a generalist and a specialist. In such a case, it is understandable that the course's popularity would decline. (Rana, 2015)

Lastly, Students do not get proper guidance about, which course they should select post commerce higher secondary school and so is the reason for the researcher to choose this as the research problem.

Need of study

According to the researchers' need-based study, Students have trouble making decisions while choosing a career following the XII standard commerce. Thus, providing counselling to commerce Students regarding the syllabus through programmes, career counselling, or courses post XII standard commerce can assist Students in deciding their professional objectives and planning their future in the respective subject of their interest.

Objectives

1. To find out Students' awareness about career prospects post-commerce higher secondary school.
2. To identify career prospects post-commerce higher secondary school.
3. To test the effectiveness of careers post-commerce higher secondary school(CPCHSS) programme among Students.

Research questions

1. How many Students are aware of the different careers post-commerce higher secondary school? (Objective 1)
2. Which are the careers post-commerce higher secondary schools? (Objective 2)

Hypothesis

Null Hypothesis (H0) - There will be no significant difference in the mean scores of pre-tests and post-test on Students' awareness about the careers post-commerce higher secondary (CPCHSS) programme. (Objective 3)

Research Hypothesis (H1)- There will be a significant difference in the mean scores of pre- tests and post-test on Students' awareness about the career prospects post-commerce higher secondary school after implementation of the careers post-commerce higher secondary school (CPCHSS) programme. (Objective 3)

Scope

The scope of this research includes higher secondary schools affiliated with the Goa StateBoard.

De-limitations

The study was de-limited to Students of XI Commerce A and B of Fr. Agnel MultipurposeHigher Secondary School Verna Goa, batch 2022-2023.

Limitations

The limitation of the study was participation and the response of the Students to the questionnaire, CPCHSS programme and teacher-made pre-test and post-test.

METHODOLOGY

Research method and design

A descriptive method with survey design (Objective 1)

Experimental Method with Pre-Experimental one group pre-test post-test design. (Objective3)

Variables

Independent variable: careers post-commerce higher secondary school (CPCHSS)programme.

Dependent variable: Awareness of Students about careers post-commerce higher secondary school.

Population

All Students of XI standard of Commerce stream of batch 2022-23 affiliated to Goa Board ofSecondary and Higher Secondary Education.

Sample

For the study 72Students of XI Commerce A and B from Fr. Agnel Multipurpose Higher Secondary School of batch 2022-23 were selected for survey and 36 Students for experiment.

Sampling method

Convenience sampling was used to select the sample for the research since, the researcherwas doing internship in the selected school.

Data collection tools

Data Collection tools were closed ended questionnaire and teacher made pre-test and post-test.

Data analysis tools

The data obtained was analysed with the help of content analysis, percentage, mean, standard deviation, t-test and effect size.

Findings

Table 2: Students' awareness about career prospects post higher secondary commerce.

Q. No.	Questions	Yes	No
Q1	Do you know about commerce?	100%	0%
Q2	Do you know what B stands for in B.Com.?	73%	27%
Q3	Do you know anything about B.B.A.?	11.5%	88.5%
Q4	Do you have idea or plan about how to become a C.A.?	2%	98%
Q5	Do you know the role of C.S. in a company?	0%	100%
Q6	Do you know about programming languages?	5.5%	94.5%
Q7	Do you know the degree which provides knowledge about Indian constitution and law?	8%	92%
Q8	Do you know which course will help enhance your knowledge on humanities and literature?	6.5%	93.5%
Q9	Do you know anything about hotel management?	43.5%	56.5%
Q10	Did you plan on which course you want to take up post XII standard commerce?	16%	84%

Majority of the Students are unaware about the career prospects post-commerce higher secondary school.

Table 3: Career prospects post-commerce higher secondary school.

Selected career prospects for Students post-commerce higher secondary school	
Careers in commerce field	**Careers in non-commerce field**
• Bachelor of Business Administration • Bachelor of Commerce • Bachelors in Economics • Chartered Accountant • Company Secretary	• Bachelor of Computer Applications • Bachelor of Legislative Law • Bachelors in Culinary Arts

(Gurmukhani, 2023; Yeasmin & Saluja, 2018; Kocha, 2018; Team, 2023)

Effectiveness of careers post-commerce higher secondary school(CPCHSS)programme among Students.

To analyse the result of post-test by inferential data analysis, the null hypothesis was statedand the level of significance (0.05%) was decided.

Null Hypothesis (H0)- There will be no significant difference in the mean scores of pre-test and post-test on Students awareness about the career prospects in commerce after implementation of the careers post-commerce higher secondary school (CPCHSS) programme.

Table 4: t-value

Test	N	Mean	S.D.	t value calculated	t value table	Degreeof freedom	Sig. (one tailed)
Pre-test	36	9.22	1.79	7.14	2.03	35	Significant
Post-test	36	13.52	3.13				

Interpretation

Since the calculated t-value is greater than table t-value at 0.05 level of significance. Hence,the null hypothesis is rejected and therefore the research hypothesis is accepted. Thus, it canbe interpreted that there is a significant difference in the mean scores of pre-tests and post-test on Students' awareness about the career prospects post commerce higher secondary school post implementation of the careers post-commerce higher secondary school (CPCHSS) programme.

Table 5: Effect size

Test	N	Mean	S.D.	Cohen's d	Glass's delta	Hedges' g
Pre-test	36	9.22	1.79	1.68	2.40	1.68
Post-test	36	13.52	3.13			

Interpretation

Since the observed Cohen's d and Hedges' g is 1.68 and Glass's delta is 2.40 the magnitude ofdifference between the mean scores of pre-test and post-test is large.

Discussion on Findings

Present research identified in the findings that Students do not have adequate knowledge about career prospects in commerce and they should be sensitised about the same. On similar lines **Gupta & Oza, 2020** in their research paper mentioned that, commerce Students

face many challenges and problems one of them is in career selection, but there is a wider scope for commerce stream Students in future and they should be updated about the same. In this research, implementation of careers post-commerce higher secondary school (CPCHSS) programme showed improvement in career awareness of higher secondary Students. Similarly, **Stephen, 2020** stated that the career decision making ability of both boys and girls improved post receiving career counselling.

CONCLUSION

The study concluded that majority of the Students are unaware about career prospects post higher secondary commerce, there are career prospects post commerce higher secondary school in commerce and non-commerce field and careers post-commerce higher secondary school (CPCHSS) programme was effective to sensitize Students about career prospects post- commerce higher secondary school.

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DEVELOPMENT OF AWARENESS PROGRAMME ABOUT E- BUSINESS AMONG XI STANDARD COMMERCE STUDENTS

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Abstract

This study is an attempt to find out the present status about Online Shopping among XI standard commerce students and to develop an awareness programme for e-business.The researcher has used experimental method for this study. 43 students from Kamakshi Higher Secondary School of class XI Commerce have been selected by using purposive sampling method.The various tools that were used to collect data were Questionnaire, Observation method and Interview method. The Questionnaire consisted of 24 questions from which 18 questions were close ended questions and 6 questions were open ended questions.To analyse the collected data the researcher used graphs, tables for quantitative data analysis and for qualitative data tools like coding and decoding were used.

INTRODUCTION

With the advent of the 21st century, the world has entered in an "e - generation" era. Internet technology has revolutionized communication across the world and has transformed it into a global village. Internet has generated a tremendous level of excitement through its involvement with all kinds of electronic businesses and procedures ranging from e - commerce, e - business, e - CRM, e – supply chain, e - market place, e – payment, e – entertainment, e – learning to e – citizen and e – governance.

Internet has revolutionized marketing which is often defined as the exchanges between individuals and firms. It has totally changed the way consumers shop and buy goods and services and has rapidly evolved into a global phenomenon.

Besides shopping at physical stores, with the aid of information and communication technologies (ICT), consumers are able to shop through internet.Online shopping is an act of purchasing the products or services over the internet. It is a network of linked computers enabling millions of people to communicate and search for information as well as to sell and buy products.Online shopping is a recent phenomenon in the field of e – business and is definitely going to be the future of shopping in the world.The declining cost of personal computers, development of search engines and consumers growing interest in the internet has enabled online shopping to gain significant attention in recent years.

Online shopping is becoming a well-accepted way to purchase a wide range of products and services. Customers use internet not only to buy the product online, but also to compare prices, product features and after sales service facilities that they will receive if they purchase products and services from a particular store.These stores are also known as e – web store, e – shop, e – store, internet shop, web – shop, web – store, online store, online store front and virtual store. These stores offer a new environment distinguished from the traditional ways of doing business. It allows shopping for required products without going to the store physically.

Internet shopping is useful as people are able to shop 24 hours a day without having to leave their home or work place.Initially, the customer base for online shopping activities was therich class with a lot of purchasing capacity.However, now, with the passage of time, more and more people are switching over to make purchases online, thus getting a massive change in the online shopping scenario.Online shopping has become a major outbreak in the world of information technology. In today's globalized world, business can get access to customers worldwide using internet technology.Online shopping uses B2C technology where there is a direct approach by the business units to its customers.

Technological advances and social networking continues to transfer online shopping experience. Most of the customers' expectations are set by the best websites they frequently visit. At the same time, these websites face mounting pressure to attract new customers, convert browsers into buyers, increase the size of each transaction and retain customer loyalty.

The online shopping store is a recent development in the life style of the people with the moving time and the demand of the hour.The online shopping stores are increasing in number. People hesitatingly but have now started to shop their needs and wants.

Considering all above needs researcher had selected this particular topic for study.

REVIEW OF RELATED LITERATURE

S. Saravanan and K. Brindha Devi (2015) conducted a study on the topic**"Online BuyingBehaviour in Coimbatore city"**. The main objective of the study was to discover the order of preference given by the online buyers for different online websites and assess the most frequently bought product through online shopping. The sample size for this study consisted of 150 respondents from Coimbatore city. The study revealed that about 44% of students use internet in India and overall 72% of young people access internet on regular basis. It also showed that online shopping is a convenient method of shopping provided fraudulent use of internet is avoided by proper security norms. Higher computer literacy along with proper awareness about internet would make internet shoppers smarter and enable them to makewise decision about various products and services.

Achut P. Pednekar(2014) published an article on the topic **"An Empirical Study of**

Consumer Preferences towards Online Shopping". The study aimed to assess the implication of online shopping on the buying behaviour of the consumer. The sample size for this study comprised of 50 respondents from Mapusa city. The collected data was interpreted using percentage. The study revealed that majority of the consumers preferred online shopping for personal purpose except few who still adopt traditional and local method of shopping due to loyalty towards each other.

Achal Hardia and Kapil Sharma (2013) conducted a research on the topic **"Empirical Study of Factors affecting Online Shopping amongst Youth"**. The research made an attempt to study the impact of demographic on factors of online buying behaviour of youths. The study was carried out by distributing questionnaires which had scale labels and the reliability was computed using Cronbach's Coefficient alpha. SPSS statistical tool was also used in this study. The demographic variables considered for the study were gender, age, educational background and pocket money. The study revealed that online shopping is gaining momentum hence organizations can apply the relevant variables and factors, to create their strategies and tactics. They can prioritize the customer inherent in the online shopping environment. Also the results of the study can be used to focus attention on target customers like ladies who comparatively shop more online.

STATEMENT OF PROBLEM

"Development of Awareness programme about e-business among XI standard commerce students"

DEFINITION OF TECHNICAL TERMS

1. **Awareness Programme**

   In the present study awareness programme refers to the use of strategies like demonstration,competition, quiz etc. to enhance the awareness about e-business.

2. **E-business**

   In the present study E-business refers to buying, selling and ordering of goods and servicesusing the internet.

OBJECTIVES OF THE STUDY

1. To find out the present status about Online Shopping among XI standard commerce students.
2. To identify the problems regarding Online Shopping among XI standard commerce students.
3. To develop an awareness programme for e-business.

4. To study the effectiveness of developed awareness programme.
5. To give appropriate suggestions based on results.

VARIABLES OF THE STUDY

Dependent Variable

The dependent variable of the study is the achievement of XI standard commerce students.

Independent Variable

The independent variable for the study is the awareness programme.

Extraneous Variable

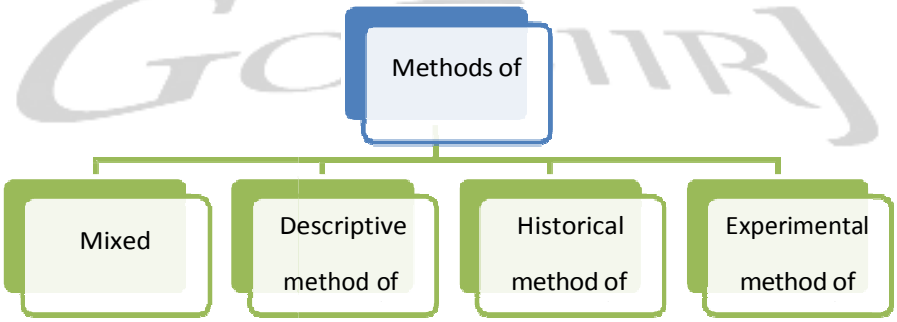
The extraneous variable of the study are age, gender, intelligence, time, etc.

LIMITATIONS OF THE STUDY

1. The study was limited only to Class XI Commerce of Kamakshi Higher Secondary School,Curti–Ponda.
2. The study was limited only to Online Shopping.
3. The research was done for the academic period of 2018 -19.

RESEARCH PROCEDURE

Methods of Research



Research Methodology: -

The present study is experimental in nature. Thus the researcher has adopted experimentalmethod for the study.

Experimental Design:-

For this study the researcher selected Pre- test and Post- test single group design from thefactorial design of the experimental study.

Sampling:-

For the purpose of this study, 43 students from Kamakshi Higher Secondary School of

classXI Commerce have been selected by using purposive sampling method.

Tools for Data Collection:-

The various tools that were used to collect data were Questionnaire, Observation method and Interview method. The Questionnaire consisted of 24 questions from which 18 questions were close ended questions and 6 questions were open ended questions.

Statistical tools for Data analysis

To analyse the collected data the researcher used graphs, tables for quantitative data analysisand for qualitative data tools like coding and decoding were used.

OBJECTIVEWISE DATA ANALYSIS

Objective No. 1:-To find out the present status about Online Shopping among XI standard commerce students.

Inorder to achieve the objective researcher conducted a pre test and researcher made questionnaire was used to collect the data.

Objective No. 2:- To identify the problems regarding Online Shopping among XI standard commerce students.

Researcher analysed the collected data and found that most of the respondents faced the problem of delay in delivery. While some faced the problem of Inferior quality and product damage. However very few respondents faced the problem of non-delivery, limited choice and over pricing.

Objective No. 3:- To develop an awareness programme for e-business.

To enhance the awareness about e-business strategies like demonstration, competition and quiz were used.

Objective No. 4:- To study the effectiveness of developed awareness programme

Researcher conducted a post test and the results of post test are as follows:

- Almost all the respondents preferred to shop from online stores.
- Majority of the respondents preferred Flipkart.com for online shopping.
- It was observed that most of respondents spend less than Rs. 500 for per purchase while shopping online.
- Cash on delivery is mostly preferred as a payment mode.
- Mostly respondents preferred to shop online depending upon their mood or desire. However, some respondents preferred to shop only during heavy discount time period.

Conclusion and Discussion

Online shopping has truly revolutionized and influenced the society as a whole. The use of technology has opened new doors and opportunities that enable a far better convenient lifestyle today. The study revealed that online shoppers are young, highly educated, active, intensive and are expert users of internet. The generalized results obtained through data analysis have given a clear indication of increasing significance of online stores in the life ofthe Youth.

It was also observed that most of the websites offered Cash on Delivery option for making payments which encouraged the youth to shop online as they can inspect the goods before making payment.

Through this study it was observed that most of the youth preferred online shopping. However wide variety and reasonable price products was the main reason for the youth to shop online. The study also revealed that most of the youth preferred to shop depending on their mood or desire. It was also observed that Flipkart.com was the most preferred online store and Clothing and its accessories were mostly purchased by the youth.

Many think that online shopping will eventually supersede traditional shopping. However, some youth still shop at conventional stores because of safety and privacy concerns. Nevertheless, there are many youths who shop online as it provides them with tremendous benefits. With the improvement in technology, the trend of online shopping will continue and there will be an increase in its usage.

National Education Policy 2020 has also emphasised the use of technology in multiple waysto enhance the teaching learning experience and also to make quality education accessible for masses. As per the NEP the use of technology will be taken to the next level and to promote Online Education and Digital Education a dedicated unit will be set up to facilitate buildingof digital infrastructure, digital content and also to look after the e-education needs at the level of both school and higher education

The government will also set up an autonomous body – National Educational Technology Forum (NETF), which will work as a platform for free exchange of ideas on the use of technology to enhance learning, assessment, planning and administration.

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A COMPARATIVE STUDY BETWEEN SELF-LEARNING AND SYLLABUS-WISE CLASSROOM LEARNING

Haldankar Chanda Vishwas

Abstract:

The basic research paper throws light on the major objective of the study entitled: A comparative study between "The effectiveness of Self-Learning and Syllabus-wise Classroom Learning." The researcher studied the case using Experimental Design one where a group, or class was kept under observation after implementing cause and effect factors with the help of One-group Pre-test-post-test Research Design. Total of 40 students were taken for this action research study from commerce batch of students studying in P.E. S's Shri Ravi S. Naik Higher Secondary School, Farmagudi, Ponda-Goa by using purposive sampling method. The researcher used questionnaire as a statistical tool for data analysis. Questionnaire which consists of 20 questions of which some were based on likert scale survey questions & rating scale survey questions either in a form of closed-ended or open-ended format to collect answers from individuals. Through this action research, it is observed that self-study in addition to syllabus wise classroom learning is an important part of learning which should happen apart from classroom environment.

Keywords: Self-learning, Syllabus wise Classroom Learning

Introduction:

Learningis the process of acquiring new understanding, knowledge, behaviour, skills, values, attitudes and preferences.Learning is a challenge and self-learning a step higher as the learner will require more patience and discipline than a general student who has enough material at his tips to study it without the extra effort. Self- learning is considered enriching and worthwhile because the learner can set a pace that is convenient and affordable. All learning involves activities. These activities involve either physical or mental activities. For example, habits, skills, facts, etc. The individual is constantly interacting with and influenced by the environment. This experience makes him to change or modify his behaviour in order to deal effectively with it. Therefore, learning is a change in behaviour, influenced by previous behaviour.Self-learning is an approach to learning where the individual makes the effort to identify their own learning needs, set learning goals, find the necessary resources, and evaluate their own knowledge. Self-learning is an approach to learning where the individual makes the effort to identify their own learning needs, set learning goals, find the necessary resources, and evaluate their own knowledge. Self-learning is anything you learn outside a classroom environment by yourself without a set curriculum or

examinations. This makes it all about pure learning. self-learning also helps in developing your skill levels and enriching your experiences through practical applications.A classroom or schoolroom is a learning space in which both children and adults learn. The classroom provides a space where learning can take place uninterrupted by outside distractions. Classroomlearning is a traditional mode of learning in which the learning environment is created within the physical wallsof a classroom. Wherein both the teacher and student need to be present physically inside the classroom.Classroom learning is a complex, multi-layered, and social experience. A syllabus lets students know what the course is about, why the course is taught, where it is going, and what will be required for them to be successful in the course (Altman & Cashin, 2003). The purpose of the syllabus should drive the decision as to what content to include. Three major purposes that a syllabus should serve are as a contract, a permanent record, and a learning tool (Parkes & Harris, 2002).

REVIEWS

Matejka & Kurke (1994) A syllabus is generally defined as a plan that states exactly what students at a school or college should learn in a particular subject. It is not only about the knowledge to be gained, but also it helps the students to meet the desired expectations which make them feel secure although it seems that the syllabus is apiece of written document of the assignments, readings, activities.

As Mark Twain once remarked, "The Best Education Happens outside the Classroom" which means that self- learning that takes place outside the formal channels can be both informative as well as educational. To explain, self-learning ensures that learners learn outside the formal systems thereby giving them more flexibility and freedom to explore new avenues of learning.

Self-Study connects with these approaches but it is characterised by its focus on one's own practice and one'sown role in it, and looking more deeply to identify motivations, beliefs, and concerns around an aspect of practice. Characteristics of self-study are: the involvement of critical friends (Schuck & Russell, 2005); the use of theory to help to gain wider perspectives on practice; and methodological rigour (LaBoskey, 2004). Self-study aims not only to enhance the quality of practice, but also to open up the self-study to public debate in the academic community, contributing to the knowledge base of teacher education (Vanassche&Keltchermans, 2015).

OBJECTIVES OF THE STUDY

- To determine the current status of the students of higher secondary section towards syllabus-wiseclassroom learning.
- To find out the effective style of learning for the students of higher secondary section

with respect toclassroom learning

- To determine the impact of classroom learning in addition to the syllabus-wise learning technique.
- To develop the effectiveness of self-learning over syllabus-wise technique of classroom learning.
- To show the relationship between self-learning and syllabus-wise technique of classroom learning.

ASSUMPTIONS OF THE STUDY:

The students of XI Std are using variety of learning strategies to boost up their understanding level.Reference books, videos, online pdf files and related search, self-study and preparing notes using syllabus can help the students understand the concepts easily students' skill is developed and ensures flexibility thereby increasing their level of understanding.Self-learning in addition to the content taught as per syllabus in classroom will enhance student's performance.Not all will be dependent on classroom notesto study from exam point of view.ie. Rare chances of students preparing themselves through self- learning.

HYPOTHESIS OF THE STUDY

H1: RESEARCH HYPOTHESIS-

There is a significance difference between the mean performances of pre-test and post-test for self- learning and syllabus-wise classroom learning among students of Std XIth of P.E.S. Higher Secondary School, Farmagudi, Ponda-Goa. It means there is a significance difference between the mean performance of pre-test and post-test.

H0: NULL HYPOTHESIS-

There is no significance difference between the mean performances of pre-test and post-test for self- learning and syllabus-wise classroom learning among students of Std XIth of P.E.S. Higher Secondary School, Farmagudi, Ponda-Goa. It means there is a no significance difference between the mean performance of pre-test and post-test.

PROCEDURE OF THE STUDY

METHOD:

The researcher studied the case using Experimental Design one where a group, or class was kept under observation after implementing cause and effect factors with the help of One-group Pre-test-post-test Research Design. Experimental research also establishes the cause and effect of a phenomenon. It thus seeks to determine the relationship between the two variables- the dependent and the independent variables. The research design used by the researcher was pre-test, post-test single group design. In this study I have adopted the pre-test and post-test experimental

design the learning methods used are through syllabus-wise classroom learning & self-study or self-learning. In this research the survey method was used. Survey methodology studies the sampling of individual units from a population. A tool used for survey is a set of predetermined questions for all respondents. It serves as a primary research instrument in survey research.

EXPERIMENTAL DESIGN:

A pre-test observation of dependent variable is made after syllabus-wise classroom learning was done and pre-test scores were taken from the achievement test of students. The observation of dependent variable is carried out to compare the benefit of self-learning method study technique in addition to classroom learning during the sessions held by the subject teachers. The focus to deliver the results was done taking into consideration the methods of learning. The post-test scores were taken from the achievement test. In this method, the researcher compared the result of pre-test and post-test methods of learning in higher secondary section of the school.

SAMPLING FOR THE STUDY: (PURPOSIVE SAMPLING METHOD)

A research method is a systematic plan for conducting research. Research methods are a variety of techniques that people use when studying a given phenomenon. In this method, a particular portion of the population is segregated; this method is cheaper and quite practicable. Purposive sampling is a form of non-probability sampling in which researchers rely on their own judgement when choosing members of the population to participate in their study. It requires researchers to have prior knowledge about the purpose of their studies so that they can properly choose and approach eligible participants. Researchers used purposive sampling when they want to access a particular subset of people, as all participants of the study are selected because they fit a particular profile.

POPULATION AND SAMPLE:

Total of 40 students were taken for this action research study from commerce batch of students studying in P.E. S's Shri. Ravi S. Naik Higher Secondary School, Farmagudi, Ponda-Goa by using purposive sampling method. The learning strategies targeted were self-learning and syllabus-wise classroom learning in Higher section of the school.

TOOLS FOR DATA COLLECTION

The tool that was used in this study was achievement test:

Achievement test (pre-test) for assessing student's knowledge gained through syllabus wise classroom learning. Achievement test (post-test) for assessing student's knowledge gained through self-study in addition toclassroom learning.

STATISTICAL TOOLS FOR DATA ANALYSIS:

The students are given knowledge on each subject as per syllabus pattern in syllabus wise classroom learning strategy. They are asked to prepare subject notes to the topics for further reference. Students are taught as per syllabus in regular classes and after their completion of every lesson test is given to measure their level of attention in class. Focuses on the highlighted content and the percentage of learning and grasping information. After providing suggestion and remedial measures a post-test was conducted specially for those selected students who could not perform well in the pre-test.The purpose of this test is to find out the improvement of performance and level of understanding in students with respect to self-study technique in addition to classroom learning. After post-test, intervention was done to test their level of understanding towards each topic taught in class. First, Questionnaire which consists of 20 questions provided to the students assessing the students' Opinion about their learning skill. Second, was the observation method. With the help of observation, the researcher tried to identify the problem of the students during classroom interaction.

OBJECTIVE WISE DATA ANALYSIS

OBJECTIVE1:

To determine the current status of the students of higher secondary section towards syllabus-wise classroom learning.

The researcher conducted pre-test to find out the current status of learning techniques used by the students during the year. Achievement test (pre-test) for assessing student's knowledge gained through syllabus wise classroom learning.

OBJECTIVE 2:

To find out the effective style of learning for the students of higher secondary section with respect to classroom learning.

To understand the difficulties faced & find out the effective style of learning for the students of higher secondary section through syllabus-wise classroom learning discussions were done with the class taking into consideration the least talkative, backbenchers and average students.Through syllabus-wise of classroom learning method, teachers teach students to learn from text books or notes and make students to memorize the content. Hence it does not help in developing student's creative and critical thinking, problem solving and decision-making skills. Here teacher provides information by only talking on the content included in the syllabus & sharing the slides at times, therefore individual practice can make the students learn with better understanding when they see, hear, and do.

OBJECTIVE 3:

To determine the impact of classroom learning in addition to the syllabus-wise learning technique.

For the development of better understanding of the lesson, Researcher has implemented strategies using **ADDIE MODEL**, The researcher have conducted an in-depth study through my research to help you identify the gaps of standard XIth Commerce trying to solve their problem with respects to study technique and its effect on the performance. The audience i.e., the class already knows the benefit they gain through classroom learning further trying to upgrade their knowledge through self-study as an addition to syllabus wise classroom learning. In design phrase the researcher has set paper at a level where everyone can give their best and score well. The researcher in development phrase has completed a lesson giving them test in Economics subject for20 marks to note if pre-test can give adequate result for the better performance of the class. During the Implementation process, the researcher tried to find out the exact settings preferred for tracking the records of40 students in class. Post-test were given after students had actually inherited the technique of self-learning while studying for the Economics test or other relevant time period. The Evaluation phase is final phrase dealing with gathering important information to see if the techniques are beneficial to be revised and improved or proved to be sufficiently accurate to keep the students going in their education sector. Achievement test (post-test) was conducted for assessing student's knowledge gained through self-study in addition to classroom learning. Moreover, the strategy helps the individual in overall development, deal in improved communication skill and effectively deliver their lessons leading to high grades.

OBJECTIVE 4:

To study the effectiveness of self-learning over syllabus-wise technique of classroom learning.

OBJECTIVE 5:

To study the relationship between self-learning and syllabus-wise technique of classroom learning.

TESTING OF NULL HYPOTHESIS*: T-Test Statistical Analysis*

T-test: Paired two sample for means	***PRE-TEST***	***POST-TEST***
Mean	7	10.4
Variance	5.692307692	9.015384615
Observations	40	40
Pearson Correlation	0.812502932	
Hypothesized Mean Difference	1	
Df	39	
t Stat	-15.89093261	
P(T<=t) one-tail	6.26376E-19	
t Critical one-tail	1.684875122	
P(T<=t) two-tail	1.25275E-18	
t Critical two-tail	2.02269092	

The researcher performed research study on t-test and descriptive statistics of pre as well as post-test from the dataof 40 samples. The correlation for our 40 cases is in the research study is 0.81, which is a fairly strong positive relationship between two variables. Hence, there is a relationship between self-learning and syllabus-wise classroom learning techniques. In the following observation, the t-stat value is 15.90 and the T-critical two-tail value in t-test table indicates 2.02. Since the calculated value is more than the tabulated value the researcher would reject the null hypothesis with hypothesised mean difference of 1 and alpha at 0.05. The researcher accepts the research hypothesis stating there exist a significance relationship between the mean performances of pre-test and post-test for self- learning and syllabus-wise classroom learning among students of Std XIth of P.E.S. Higher Secondary School, Farmagudi, Ponda-Goa.

DISCUSSIONS OF THE STUDY:

In this action research project, the name of the topic or problem is "A comparative study between self-learning and syllabus-wise classroom learning" in which the investigator studied and did research on this topic and find out the certain solution to improve the attention level and performance record of the students. The research was done by applying various methodologies, tools and by merely observing the behaviour of few students of class-IX. The investigator may also apply such kind of strategies in solving other kinds of similar problem such as irregular homework, lack of motivation, low attendance rate, problem of language learning hesitation to express their views etc. Such kind of research project is helpful in developing attendance rate, attention level, performance and productivity of the pupil's future generation, educated from the very school level. Also, the self -learning strategy will bring about positive desire towards learning and such upgradation of skill will increase in the level of educational sector. Analysis of data collected in this action research has revealed that in some important ways, the time use to revise the lesson taught class has great impact on students' achievement as well as in participation. It is observed that self-studyin addition to syllabus wise classroom learning is an important part of learning which should happen apart from classroom environment. Student can use their own learning strategies of doing self-study if it is effective but if they are not able to find some ways to revise teacher should provide them effective ways to revise. The investigator is highly satisfied with the outcome of this research. The steps that have taken to improve the attention level of the student have given fruitful results. The students understanding and application level have improved. Researcher finds that students actually face difficulty in understanding the basic students have difficulty due to reasons of not attending college and they do not understand what teacher is teaching to them. Teachers are restricted with traditional approach of study; they don't focus on each type of learner in the class. Through lectures students only get theory knowledge of concept and on the basis of their own past experience. They can't connect to the real life. Both the

techniques need to go hand in hand for better understanding and success. Majority of individual's are in the favour of the project.

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ARTIFICIAL INTELLIGENCE: IT'S ROLE IN EDUCATION

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Abstract

Artificial intelligence has transformed many industries, including education. AI has enabled educational institutions to personalise learning experiences, automate routine jobs, and improve their efficiency. Artificial intelligence-powered tools have taken over monotonous chores like grading and evaluation, freeing up teachers' time to focus on more vital aspects of education like class discussion and personalised tutoring. Furthermore, AI systems can analyse student data to detect knowledge gaps and deliver tailored interventions, thereby improving student outcomes. AI's position in education has enabled more efficient and effective learning and it will continue to play an important role as educational technologies progress.

Concept of Artificial Intelligence

Artificial intelligence (AI) is the modelling of human intelligence in devices that have been designed to behave and think like humans. The phrase can also be used to refer to anycomputer that demonstrates characteristics of the human intellect, like learning and problem- solving (FRANKENFIELD, 2022). According to scientists, the creation of machines with a particular amount of intellect is referred to as artificial intelligence. These machines are capable of carrying out human-like tasks such cognitive thinking, learning, making decisions, and environment adaptation. AI is essentially the development of artificial intelligence-capable machines. Understanding AI requires an awareness of a few essential traits and principles.

Although artificial intelligence (AI) is frequently connected to computers, new research reveals that AI is becoming more complex than just hardware and software. AI is now being incorporated into machines, structures, and even robots thanks to emerging technologies like embedded computers and sensors. AI is a theoretical foundation as well as a subject of research. AI is a study area that tries to address issues with learning, problem-solving, and pattern recognition that are related to human intelligence. AI serves as a theoretical framework that directs the creation and application of computer systems with human-like skills, such as speech recognition, decision-making, visual perception, and language translation.

A vast volume of labelled training data is typically ingested by AI systems, which then examine the data for correlations and patterns before employing these patterns to forecast future states. By studying millions of instances, an image recognition tool can learn to recognise and

describe objects in photographs, just as a chatbot that is given examples of text can learn to produce lifelike dialogues with people.

AI has had a huge impact on the education industry, where it is being used to improve student outcomes and learning experiences. Tools with artificial intelligence (AI) can anticipate student performance, offer real-time feedback, and even personalise learning. Although AI is capable of carrying out tasks that normally require human intelligence, it cannot take the place of a person's creativity, empathy, or critical thinking. AI should be viewed as a tool to enhance human capabilities and better our lives instead (LIJIA CHEN, 2020)

Some Characteristics of artificial intelligence

- ✓ **Natural language processing:**

  A branch of linguistics, artificial intelligence, and computer science is known as natural language processing. It makes it possible for computers to comprehend spoken or written words in human language (voice data) much like people do. Regardless of whether the language is spoken or written, NLP employs Artificial Intelligence to process and translate it so that the computer can understand it. Computers use programmes to read and microphones to record audio, much as humans have ears to hear and eyes to see. Additionally, computers process input using programmes and algorithms tailored to the appropriate inputs, just like humans do with their brains. And finally, the input is transformed into computer-readable code.

- ✓ **Intelligent Robotics:**

  Engineering, science, and technology come together in robotics to create programmable robots that can help people or imitate human behaviour. Robots were initially created to carry out repetitive duties, but they are today used for home, economic, and even military purposes. Today's robots range from human-controlled to totally autonomous, each with a varying level of autonomy to complete tasks without any outside help.

- ✓ **Perception:**

  Machine perception makes it possible to process and infer all of the information included in inputs from sensors (such as cameras, wireless signals, and microphones). It is primarily employed in applications like object, facial, and speech recognition. The only source that offers visual input analysis is computer vision.

- ✓ **Automate Simple and Repetitive Tasks:**

  AI is amazingly adept at handling repetitive, tedious jobs without becoming weary. Let's use SIRI as an example, an Apple voice- activated Virtual Personal Assistant, to more clearly grasp. It serves as an assistant, as the name suggests, and may manage several commands in a single day. SIRI can do it all, including take notes for a meeting, reschedule

a calendar event, and use navigation to get people to their destination. Prior to voice-enabled assistants, these tasks required considerable time and effort to complete manually.

✓ **Data Ingestion:**

With each passing day, the amount of data created increases tremendously, and here is where AI comes into play. These data are gathered by AI- enabled devices, which also analyse past events and provide knowledge. Handling massive amounts of data and producing accurate information from it requires a lot of effort, but AI has changed the game. Data ingestion is the process of transferring unstructured data that has been retrieved from many sources to a large database medium so that AI models can be accessed, used, and prepared. Artificial intelligence uses artificial neural networks to analyse vast volumes of data and draw conclusions logically.

✓ **Imitation of Human Cognition:**

It seems impossible to chat to hundreds of clients at once; artificial intelligence can mimic human intellect and respond to some simple customer questions via audio or text input. Chatbots are artificial intelligence-enabled computer programmes that offer a window to hear client complaints and respond to specific commands in real time with solutions. These intelligently designed bots are meant to address customer issues within certain parameters; if not, they can rapidly route you to human executives. Before, you had to be obscenely particular when speaking to these bots, but today they can answer to you with useful advice or even product recommendations because they comprehend language in addition to commands (Vol,2021) (InterviewBit, 2022).

Types of AI

While there are many different ways to categorise artificial intelligence, the two primary classifications are based on the capabilities and the functionalities of the technology.

Based on Capabilities Artificial intelligence can be divided into two categories:

Strong AI: Commonly referred to as artificial general intelligence (AGI) is a term used to

- describe computer programming that can mimic human cognitive functions. An intelligence called general artificial intelligence (GAI) is capable of doing any intellectual job as effectively as a person. The goal of general AI is to create a system that is intelligent enough to think like a person on its own.
- **Narrow AI:** Narrow AI is a subset of AI that is intelligent enough to carry out specific tasks. In the field of artificial intelligence, narrow AI is the most prevalent and readily available AI. Since narrow AI is only taught for a single job, it cannot accomplish tasks outside of its domain or set of constraints. As a result, it is often known as weak AI. If narrow AI exceeds its bounds, it may fail in unexpected ways. Apple Siri is a fantastic

example of narrow artificial intelligence, yet it only does a small set of pre-defined tasks (Mancilla, Understanding Artificial Intelligence: The Basics of AI, 2022).

Based on Functionality Artificial Intelligence is divided into following types:

- **Reactive Machines:** Reactive machines, as their name suggests, are only capable of using their intellect to see and respond to the world in front of them. They operate according to the most fundamental AI principles. A reactive machine cannot store memories hence it is unable to use prior experiences to guide current decisions (Java T Point).
- **Limited memory:** When gathering information and considering options, artificial intelligence with a limited memory has the capacity to store previous facts and forecasts, effectively looking back in time for hints on what might happen next. Artificial intelligence with a limited memory is more complicated and offers more opportunities than reactive machines.
- **Theory of Mind:** It is only speculative to have a theory of mind. The technological and scientific advancements required to reach this higher degree of artificial intelligence have not yet been attained. The idea is founded on the psychological understanding that other living creatures have thoughts and feelings that affect how one behaves, according to researchers and AI experts. This implies that AI computers will be able to understand how people, animals, and other machines feel and make decisions through introspection and determination and will use that understanding to make their own decisions (Mancilla, Understanding Artificial Intelligence: The Basics of AI, 2022).
- **Self – Awareness:** The last step will be for new AI to become self-aware once Theory of mind can be formed in artificial intelligence, which will happen at some time very far in the future. This type of artificial intelligence is conscious on a par with humans and is aware of both its own presence and the presence and emotional states of others. It wouldbe able to comprehend what other people could need based on both what they say to them and how they say it. We are a very long way from accomplishing this (SimpleLearn, 2023).

Some Examples of Artificial Intelligence

- Maps and Navigation
- Facial Detection and Recognition
- Text Editors or Autocorrect
- Search and Recommendation Algorithms
- Chatbots
- Digital Assistants

- Social Media
- E-Payments (Reeves, 2023).

Applications of Artificial Intelligence

- AI is utilised in a variety of fields to provide data-driven suggestions and insights into userbehaviour.
- Google's predictive search algorithm for instance, uses user history to foretell what a user will putnext in the search field.
- To keep users hooked on the service and lengthen watch times, Netflix uses historical user data tosuggest what movie they would want to watch next.
- Using historical user data, Facebook automatically proposes friends to tag based on facialcharacteristics in their images.
- To make users' life easier, big businesses employ AI everywhere.
- The following list includes a few examples of how artificial intelligence is used in dataprocessing:

- Using if-then logic chains to perform a series of instructions based on parameters
- Searching within data and refining the search to return the most pertinent results
- Pattern recognition to find important patterns in massive data sets for novel insights
- Used probabilistic models to forecast future event (Great Learning Team, 2023).

Application of Artificial Intelligence in the Field of Education

AI has been altering how we work and learn over the last few decades. AI has now progressed to the point where it can teach humans. While AI is not come to replace instructors, AI-assisted learning approaches have already had an impact on education. These models serve both teachers and students by automating monotonous work and delivering a personalised learning experience, among other things.

Applications of AI in Education are as follows:-

1. **Personalised education:** AI in education guarantees that educational software is tailored to each individual. Furthermore, with supporting technologies such as Machine learning in education, the system backs up how the learner understands different teachings and adapts to that process to reduce the strain. This AI-education hybrid focuses on each individual's needs through features like as AI-embedded games, customised programmes, and more to help students learn more successfully.
2. **Automation of tasks:** AI in schools and virtual classrooms automates the majority of the value-added jobs. Along with tailoring the teaching process, AI software systems can check assignments, grade tests, organise research pacers, keep reports, and create

presentations and notes, among other administrative activities (Marr, 2021).

3. **Intelligent content production:** Artificial intelligence and machine learning can also assist teachers and researchers in developing new information for easier preaching and learning. When we talk about smart content, we mean many sorts of virtual content such as digitised textbook guides, video conferencing, and video lectures. some examples of AI-powered content creation:

- *Visualisation of data:* AI smart content creation increases the real-life experience of visualised web-based learning environments. The technology aids in 2D-3D visualisation, which allows pupils to interpret information in several ways.
- *Creation of digital lessons:* AI in education can facilitate bit-size learning by utilising low-storage study materials and other digital lessons. This manner, students and specialists can use the whole study material without taking up much system space.
- *Regular content updates:* AI also enables users to add and update information often in order to maintain the courses up to current throughout time. Users are also notified whenever new information is posted, which helps them prepare for impending tasks.

Universal Access:

The knowledge may now be made available to a global audience thanks to AI in the education market. Multilingual support, for example, helps convert information into other languages, making it easier for every native to teach and learn. AI is also useful when preaching to a visually or audibly impaired audience. Presentation

4. Translator, an AI-powered converter tool, provides real-time subtitles for virtual courses. Voice assistants are another AI component that schools are using to improve learning. These voice assistants enable pupils to speak with educational resources without the teacher's involvement. They can be used in both educational and non-educational settings to facilitate interaction with instructional materials or to acquire any further learning help.

5. **Personalised data-driven feedback:** AI in education analyses and calculates work reports based on real-world data. A data-driven feedback system improves student happiness, removes bias from learning, and assists in determining where skills are weak. This feedback is personalised based on the performance of each student as documented in the system.

6. **Learning systems that are both secure and decentralised:** The education industry is producing quick AI breakthroughs but is frequently hampered by concerns such as data confidentiality, alterable data accessibility, obsolete certification methods, and so on. Despite these challenges, AI-based decentralised solutions have the potential to deliver a good technological revolution to the education industry.

7. **Artificial intelligence in exams:** Artificial intelligence software solutions can be actively employed in exams and interviews to detect suspect behaviour and inform the supervisor. The AI programmes track each person using web cameras, microphones, and web browsers, and they perform a keystroke analysis in which any movement alarms the system. This educational AI technology benefit has shown to be one of the most effective online assessment alternatives.
8. **Additional Assistance for Students with AI Tutoring:** AI tutors can provide additional assistance. There are currently a variety of AI-driven tutoring programmes available to assist kids in learning the fundamentals of mathematics, writing, and other topics (Rangaiah, 2020).
9. **Finding ways to improve the course with AI:** Teachers may not always be aware of where their pupils are lacking. AI-powered programmes can assist the educational system in addressing this issue. Instead of waiting for feedback from the professor, students receive an immediate system generated response, which assists them in understanding a topic and remembering their mistakes, as well as how to do it correctly the next time(Sajid, 2023).

Merits and Demerits of Artificial Intelligence in the Field of Education

❖ **Merits of AI in Education:**

✓ Personalised learning has the potential to increase student motivation and engagement, resulting in improved academic achievement.

✓ Teachers can save time and minimise their workload by using automated grading, allowing them to focus on more relevant duties.

✓ Personalised comments can assist students in improving their writing abilities and overalllearning experience.

✓ Intelligent tutoring solutions can boost student engagement and academic success by delivering a more individualised learning environment.

❖ **Demerits of AI in Education:**

✓ There is a risk that pupils will become overly reliant on AI tools, limiting their ability to think critically and independently.

✓ There is a possibility that AI technologies will be less accurate than human graders, resulting in unjust grading and incorrect assessment.

✓ There is a risk that students will become unduly reliant on AI input, limiting their abilityto enhance their writing skills on their own.

✓ There is a risk that students will become overly reliant on AI tutoring systems, limiting their ability to think critically and independently (Bailey, 2023).

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A COMPARATIVE STUDY BETWEEN LECTURE METHOD AND INNOVATIVEMETHOD TEACHING SOCIAL SCIENCE USING COMPUTER ASSISTED INSTRUCTION

Joyanne Sarita De Souza

Abstract:

Education is fundamental to a country's social, political, and economic growth, hence competent teaching is essential. This paper is entitled as: a comparative study between lecture method and innovative method teaching social science using computer assisted instruction. Effective teaching is crucial because it focuses on supporting students in moving from one level to another in a more socially engaged environment. The most conventional method of education is the lecture technique which comprises educating the students aboutthe problem. CAI is the method of teaching in which a computer is used to present the audio- visual material to the students. It is employed to easily and quickly explain charts and numbers, as well as abstract and difficult topics. Pre – test and post – test designs on a singlegroup were conducted by the researcher utilising an experimental questionnaire design. Purposive sampling was utilised by the researcher in this investigation. Questionnaire were used to gather information from a group of students. Result of the research: There is a significant difference between the mean performances of pre – test and post – test. The findings demonstrated that the creative approach of applying CAI is more advantageous thanthe standard method.

Key words: Lecture method, innovative method, computer – assisted instruction

Introduction

"Education is the manifestation of perfection already in man" — Swami Vivekananda

Education is fundamental to a country's social, political, and economic growth, hence competent teaching is essential. Effective teaching is important since it is centred on assisting children in progressing from one level to another in a more social engaging setting, as well as getting the technique right to help students become autonomous learners. Being effective does not imply being flawless or producing a fantastic performance, but rather bringing out the best in pupils. A good teacher is like a candle who consumes itself to light the way of others. A good teacher can inspire hope, ignite the imagination and instil a love of learning and must be able to explain the concepts in order to reinforce verbal experience by using teaching aids. A teacher should perceive each student as possessing unique personality characteristics that can be more polished by using creative and innovative teaching methods. Having an awareness of the process of learning is very helpful for teachers to identify the problems students are facing. The main motive behind

development of innovative teaching and learning styles is that all the students of the class participate and interact in the class instead of just listening and sitting idle so that maximum amount of knowledge is grasped by all the students in minimum amount of time and efforts. The lecture approach is the most traditional mode of instruction. This strategy entails explaining the issue to the pupils. The teacher clarifies the subject matter to the pupil by gestures, simple devices, altering voice, stance, and facial expressions. Lecture method relies mostly on textbooks and material starts with parts and then moves on the whole.

A multi-media learning process is an innovative technique. It is the incorporation of multiple forms of digital media, such as text, graphics, audio, and video, into a multi-sensory interactive application or presentation to deliver knowledge to pupils. In this case, the teacher employs multimedia to alter the substance of the material. This allows the instructor to portray knowledge in a more understandable way by using various media components. The media assets can be digitally transformed. Students can learn better as they employ several sensory modalities, which motivates them to pay greater attention to the material offered and retain it better.

Computer aided instruction consists of three words computer, aided and instruction. Computer is a machine used to present the audio-visual material and instruction is transfer of the knowledge. CAI is the method of teaching in which a computer is used to present the audio-visual material to the students. It is used to teach abstract and complex concepts, explain figures and charts in a very limited time with ease. The students remain attentive and most of the syllabus gets completed in minimum time. Computer Aided Instruction is the direct use of the computer to teaching

Review of the literature Shobhana Puranik (2020)

21st Century is the age of cataclysmic change and creativity. India needs educatedman power in huge numbers. Traditional teaching learning methodology is outdated and best methods are to be identified to improve the required skills of the teachers and students. There exists a strong need to change pedagogy from fact-based traditional lecturing to interactive teaching with the aim of fostering durable and employability skills. To address this problem, innovation in teaching and learning has become essential. Adoption of various methods and strategies as mentioned in the paper will help in getting the desired outcome. The present paper describes innovative teaching methods being adopted by higher educational institutesin the country.

Roohi (2016)

Ancient or Lecture method relies mainly on textbooks while the modern method reliesson hands-on materials approach. In lecture method, presentation of materials starts with the parts, then moves on to the whole while in the modern approach, presentation of materials starts with the whole, then moves to the parts. Lecture method emphasizes on basis skills while modern method emphasizes on big ideas. With traditional / lecture method of teaching, assessment is seen as a

separate activity and occurs through testing while with modern method of teaching, assessment is seen as an activity integrated with teaching and learning, and occurs through portfolios and observation.

Objectives of the study

- To find out the present status of teaching learning in higher secondary school.
- To determine the difficulties faced by students by lecture method of learning.
- To develop innovative approach of teaching learning to overcome difficulties inlearning by lecture method.
- To study the effectiveness of innovative approach of teaching learning over lecture method.
- To study the relationship between lecture method and innovative method of teaching.

Assumptions of the study

- The students are facing a problem learning social science by lecture method.
- Students are unable to think critically about the topic.
- Use of innovative methods while teaching will help student to understand concepts easily.
- Students will perform better when a constructive approach is used.

Hypotheses of the study

H0: There is no significant difference between the mean performances of pre - testand post - test.

H1: There is a significant difference between the mean performances of pre - test andpost - test.

Procedure of the study Experimental design

The researcher has adopted pre – test and post – test design on single group. This design is measured on a dependent variable of interest, exposed to a treatment or intervention, and then measured again to determine the difference or change between the initial (pre) and second (post) measurement. A standardized questionnaire was administered and depending on the results obtained, interventions were conducted and followed.

Sampling study

Purposive sampling is a type of non-probability sampling in which researcher chose people of the population to participate in their study based on assessment. This sampling strategy necessitates that researcher have previous knowledge of the goal of the study in orderto correctly choose and approach eligible individuals. Purposive sampling is used by researcher in order to reach a certain set of people, in which all study participants are selected because they fit a predetermined profile.

The researcher used purposive sampling for the study. The researcher conducted the study in respective higher secondary school, 30 students of class XI were selected as sample size.

A questionnaire, rating scale, checklist, interview, observation, aptitude test, and etc are the types of data collecting tools. The researcher's data collecting instrument is a questionnaire. This is the process of gathering data from individuals using an instrument that consists of a sequence of questions and prompts. Questionnaires are used to gather information from a group of people. Each question is suited to the type and scope of the study. It is intimately connected to the growth and development of students in educational settings. It provides an accurate representation of students' knowledge and abilities in the subject area or domain being examined.

Statistical tools for data analysis

The statistical tools used by the researcher were t test (paired two samples for mean) and Pearson's Coefficient of correlation (r) besides these statistical tools like mean, standard deviation was used.

Objective wise data analysis

Objective 1:

To find out the present status of teaching learning social science in higher secondary school.

The researcher found that the school teachers mostly use lecture method of teaching learning social science subject in higher secondary school. The researcher conducted pre –test to analyse the current status of the students where teacher uses the textbook and mostly use chalkboard for teaching. The researcher conducted post – test to check the difference of using innovative method of teaching learning.

Objective 2:

To determine difficulties faced by students by lecture method of learning.

In lecture method teacher directs students to learn through memorization and recitation techniques thereby not developing their critical thinking, problem solving and decision-making skills. The teacher provides information verbally therefore, students find it difficult to understand the topic because student understand it better when they see, hear and do. There were 30 students participating in the pre – test. The mean of the pre – testconducted is 14.75. The standard deviation of pre – test is 3.53.

Objective 3:

To develop innovative approach of teaching learning to overcome difficulties in learning by lecture method.

The researcher developed an innovative approach by using computer assisted instruction i.e., Power Point presentation. The power point presentation contained images, text, flowcharts

and some videos.

Objective 4:

To study the effectiveness of innovative approach of teaching learning over lecture method.

In lecture method, teacher directs students to learn through innovative approachresearcher developed a Power Point presentation which contained images, text, flowchartsand some videos. There were 30 students participating in the post – test. The mean of the post – test conducted is 21. The standard deviation of post – test is 2.88.

Objective 5:

To study the relationship between lecture method and innovative method of teaching.

Particulars	N	Mean	Standard Deviation
Pre – Test	30	14.75	3.53
Post – Test	30	21	2.88

Table1: Descriptive Indices of Pre – Test and Post – Test

According to data of the above table 1 it can be seen that 30 students participated in pre – test and post – test. The mean(m) of pre – test is 14.75 whereas, the mean(m) of post – test is 21. There is a significance increase in scores of post – test. The standard deviation of pre – test is 3.53 and post – test is 2.88.

Null hypothesis

There is no significant difference between the mean performances of pre – test and post – test.

Particulars	N	Df	M	SD	'r'	'LoS'	't'	'T'	Result
Pre – Test	30	29	14.75	3.53	0.015	0.05	1.67	6.65	Rejected H_0
Post – Test	30	29	21	2.88					

Table 2: t – Test Result of Pre – Test and Post – Test

According to data table 2, it shows t – test result of pre – test and post – test. The df(N-1) is 29. The level of significance is considered to be 0.05 and the Pearson's coefficient of correlation is 0.015. Therefore, it shows that variables i.e., scores of pre – test and post – test is having high positive correlation. It is interpreted that since calculated "t" value 6.65 is greater than table "T" value i.e.,1.67 (t> T) at 0.05 level of significance therefore, we can say that null hypothesis is rejected and research hypothesis is accepted. We accept that there is a significant difference between the mean performances of pre – test and post – test.

Discussion

Education is fundamental to a country's social, political, and economic growth, hence competent teaching is essential. According to data research, the creative way of teaching learning social science is more successful than the standard technique. Post – test results outperformed pre – test scores. These findings demonstrated that the creative approach of applying CAI is more advantageous. Students get greater information and comprehension when they view a presentation and watch videos rather than merely listening to the lecture "chalk and talk method."

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GREEN LIBRARY IN CONTEXT OF NAAC GRADING

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Abstract

The green library, also known as sustainable library, is a new concept and it is gaining popularity among the library professionals. Library can be made healthy and rich by adopting means of ecology and economy. This paper highlights the concept of green library, its Features, Structure and how its application in higher education benefits and aids in boosting NAAC score in criteria 7, resulting in an improvement in the Institute's NAAC grade.

Keywords: Green Library, Sustainability, Environment, NAAC, Green Audit.

Introduction

The conservation of the environment is a necessary aspect of our human being in the modern world, which is affected by several factors, including the greenhouse effect, ozone depletion, global warming, and carbon dioxide. Since time changes from day to day, our natural resources are limited. We are all responsible for preserving a healthy planet to future generations. If the usage of natural resources is not restricted to the point that future generation cannot exist. People are being affected by natural calamities such as floods and droughts. These have a significant impact on human health and life. Our government should take action to protect the environment in all aspects of life. The relevance of green libraries is also included in the ongoing green system since libraries are the major hub for knowledge for future generations, and they require significant amounts of electricity, water, and other resources to thrive and create a stable environment (Saha, 2019).

Green libraries are environmentally friendly libraries that employ all available ways to reduce pollution of any kind. It restricts the use of paper and prevents the use of any type of plastic. It's also known as a sustainable library. Green or sustainable libraries are those that are designed, built, rebuilt, operated, or modified in an environmentally and resource-efficient manner. The main advantage of Green Libraries is that they can serve users' information demands while also helping to save natural resources for future generations (Pagore & Chalukya, 2022).

Concept of Green Library

There is no univocal definition of green library. But most of them have central themes which are managed by all of them, which want to reduce negativity and the building wants to increase the positive effects in the local environment (Hellsten, 2002). Green libraries want to reduce the use of water and energy by building design to increase the use of natural and renewable

organization.

The consideration of humanity role in climate change and the sustainable development nation are core concerns of society, and consequently of libraries (Varatharajan & Chandrashekara, 2007).

According to the Online Dictionary for Library and Information Science, the Green Libraries are "designed to minimize negative impact on the natural environment and the maximize indoor environmental quality by means of careful site selection, the use of natural construction materials like nature and biodegradable products, conservation of resources (water, paper, solar, and energy), and responsible waste disposal (Saha, 2019).

" According to New World Encyclopaedia 'Green Library', also known as a 'Sustainable Library' is, "A library built with environmental concerns in mind. "Here, the sustainable library is one which performs its functions and plays its role in an environment friendly manner. In new construction and library renovation, sustainability is increasingly achieved through Leadership in Energy and Environmental Design (LEED) certification, a rating system developed and administered by the U.S. Green Building Council (USGBC). Basically, green libraries are a part of the larger green building movement. Also known as 'Sustainable Libraries', 'Green Libraries' are being built all over the world, with many high-profile projects bringing the concept into the mainstream. Many people view the library as having a unique role in the green building movement due to its altruistic mission, public and pedagogical nature, and the fact that new libraries are usually high profile, community driven projects. To sum up, it can be said that green library can be characterized as 'Environment Friendly Library' or 'Sustainable Library' (Pagore & Chalukya 2022).

Many librarians and other information professionals are working to make their workplaces more ecologically friendly. This is dependent on collaborating with institutional initiatives or determining what needs to be done and gaining institutional backing for action. Acting to protect the environment can result in significant financial savings (Purohit, 2012).

Features of Green Library

Basically, green library is characterized as environment friendly library or sustainable library. And every green library necessarily possesses certain essential features like -

- Proper location or most suitable site
- Use of natural, recycled and locally available materials
- Use of reflective roof and ground
- Use of insulating windows
- Conservation of resources such as water, energy, and paper
- Use of energy-efficient lighting minimizing consumption

- System for optimized cooling
- Suitable plantation both inside and outside of building
- Circulation of fresh and healthy air
- Use of environmentally friendly technology (Pagore & Chalukya, 2022).

Structure of Green Library

1. Site location:

Before building can start, a site must be chosen. The site selection has a significant impact on how environmentally friendly the library will be. The library should be situated as far as possible in the middle of any campus to save fuel and energy and to make it easily accessible. Restrooms and a cafeteria should be built on-site or within walking distance. It should be away from the noise zone like club, auditorium, entertainment hall etc. to make concentrate on their study. Indian Green Building Council (IGBS) have provided recommendations for developing green libraries, which must be considered. Bherwani, 2020).

2. Water Conservation

It is one of the most important resources required everywhere in houses as well in offices. There are many different ways for libraries to conserve water. Properly designed rainwater harvesting plans can be used for toilets, bathrooms, irrigation, cleaning, and other purposes. Library can save lot of water by having good landscaping and greenery in and outside the library building. Storm water or waste water can be processed and reused for irrigation. Use sensor or automated faucets and dual flush toilets. Installing waterless urinals can significantly reduce bathroom water usage (Pagore & Chalukya 2022).

3. Electricity:

Although energy conservation cannot be avoided, it can be minimised. It can be saved in a library in a variety of ways. A library should have enough windows, glass windows and skylights which allow natural light abruptly in to it and there would be no need of any light generated from electricity during day time. Using low-energy bulbs and lights in non-reading areas at night also indirectly helps the library financially and saves electricity overall. A solar system can also be installed to generate electricity.

4. Constructional material:

The first thing that comes to mind when we think of a green library is the library building. The materials used in the construction of a building can improve the sustainability of the library by reducing the need for mechanical systems to improve the indoor environment quality. While selecting resources for the library, the fundamental responsibility is to contribute as little waste as possible. There are numerous guidelines and

norms in India and outside India to make a green building by using recyclable and environmentally sustainable materials.

IGBC (Indian Green Building Council) is a part of CII (Confederation of Indian Industry) provides a variety of services which include green building rating programs, training programs, certification service program etc.

LEED (Leadership in Energy and Environmental Design) is a nationally accepted program planning environmentally compatible high performances green building for a healthy environment. According to LEED wastes should be minimized at every stage of construction of building (Saha, 2019).

5. Air Quality:

Today fresh, healthy, and breathable air is essential. A proper plantation is needed in the surrounding campus which provides clean and pure air and make library cool (plain area library) also trees give pleasant air and it control air conditioner operation during summers. A green library is not just about taking care of the environment, it is about taking care of the health and well-being of those who work in it and patronize it. (Meher & Parabhoi,2017).

Application of Green Library in Higher Education

The green library movement began in the early 1990s and it is gaining popularity in the field of library and information science. The library professional also trying to develop such a kind of library that will be minimize the electricity consumption, energy efficient and environment friendly. Though it is not widely used in libraries, we are moving in the right direction (Meher & Lambodara 2017). We've already discussed the various parts of moving to a green library, but it's critical to remember the core aim of a library: to educate people. A library is a place to read, learn, engage, develop your knowledge, and extend your creativity. A library is a place for reading, learning, interacting, growing your knowledge base and expanding your imagination. As a result, it becomes sensible to supplement your environmentally friendly activities with eco-education. This entails creating your green library a site where users may not only engage in the eco-friendly movement, but also learn about it.

Benefits of a Green Library as a source of Education for the Green Movement

Libraries house seemingly endless bases of reading material. The library's reading materials can be used to educate patrons about environmental hazards and eco-friendly behaviours.This can be accomplished in the following ways.

- Creation of an eco-learning area with access to books, magazines, articles, films and podcasts.
- Provide eco-friendly resource guides. (LEED certification materials, digital tip sheet for

students.)

- Feature a list of national, state and local government green programs, grants and funding.
- Library can offer free educational classes or courses by providing spaces for after- school clubs or organizing programs for those who want to enhancetheir eco- education.
- Supply training on new energy-saving technology.
- By hosting environmental education seminars for teachers and after-school program leaders.
- Organising eco-art workshops for kids to create arts and crafts using recycled materials.

CONCLUSION

As environmental sustainability is becoming an increasingly important issue for the country, the role of higher educational institutions in relation to environmental sustainability is more prevalent. In this context, it is vital to implement the Green Library System for Institutes, which will contribute to sustainable development.

Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that accredits the institution according to the scores assigned at the time of accreditation. NAAC has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures. As a Green Library saves energy and is environmentally friendly, it will undoubtedly help to boost NAAC score in criterion 7, resulting in an improvement in Institutes' NAAC grade.

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AUGMENTATION OF AI IN TEACHER EDUCATION INSTITUTES AND SCHOOLS USED FOR PRACTICUM COMPONENT OF TEACHER EDUCATION PROGRAMME.

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Abstract:

Artificial Intelligence (AI) is considered to be the game changer in every field that may be Health, Industry, Infrastructure, Domestic help, Agriculture, Education etc. AI will have long lasting effect on education field as it will make life of a teacher easy, as it will assist the teacher to overcome many difficulties. Since every new invention has cons and pros AI is not a different. This research paper studies different aspect of AI in tune with the teacher trainees of integrated teacher education programme to develop new teaching learning skills to be future ready for AI. This research paper evaluates role of an AI in overall development of teacher trainees by considering three domains namely Cognitive, Affective and Psycho- motor. The focus of this research paper would be how and when AI can be used for practicum component of integrated teacher education programme which includes Microteaching, Peer teaching, Practice teaching and Internship (Teaching in school). This research paper also ventures to understand how AI can be used to make teacher educator lives easy as AI helps to make personalised tutoring, tracking progress of student teacher, plagiarism detector, and transcription of faculty lectures, Learning Management System (LMS), Generating Quiz, Grading, attendance tracking and many more. AI has one limitation as it doesn't have human feelings, emotions, values and its own creativity which are the important qualities of any teacher hence AI can't replace teacher in future rather it will assist teachers' in teaching learning process.

Keywords: Artificial Intelligence, Practicum, Teacher education, Plagiarism.

Introduction:

Word Artificial Intelligence was coined by John McCarthy American computer scientist and cognitive scientist in 1955. Ever since the word Artificial Intelligence is widely research topic for the Computer scientist. Artificial Intelligence will have positive as well as negative impact on every field in future and education field will not be exception. As a teacher educator, teachers and future teachers it's high time to understand, analyse and evaluate the future of AI. Let's begin with the definition of AI. "It is a branch of Computer Science by which we can create an intelligent

machine which can behave like a human, think like human and able to take decisions". Another definition of AI is "intelligence—perceiving, synthesizing, and inferring information—demonstrated by machines, as opposed to intelligence displayed by non-human animals or by humans". To sum up AI, AI is a "Man made thinking power". AI makes machine to work as a human. In Artificial Intelligence (AI) machines are not pre-programmed to do some work. AI can create a machine with programmed algorithm which can work with own intelligence. Day today examples of AI application are self driving car, playing chess on mobile phone, playing music on song etc. Artificial Intelligence or sometimes called machine intelligence is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and other animals. Some of the activities that it is designed to do is speech recognition, learning, planning and problem solving. Since Robotics is the field concerned with the connection of perception to action, Artificial Intelligence must have a central role in Robotics if the connection is to be intelligent. Artificial Intelligence addresses the crucial questions of: what knowledge is required in any aspect of thinking; how should that knowledge be represented; and how should that knowledge be used. Robotics challenges Artificial Intelligence by forcing it to deal with real objects in the real world. Dr. Benjamin Bloom, Educational psychologist conducted study in 1984 by name Bloom's Sigma Problem found that the average student tutored one to one using mastery learning technique performed better than student's educated in the classroom having one teacher to 30 student's. This study was published in the journal Educational Researcher. This study holds true universally specially country like India where school classes are overcrowded with students. In this regards AI can be effectively used to provide personalised tutor who will improves school students' performance in all domains in many folds.

Artificial Intelligence can help teacher educator and student teachers' in the teacher education institutes is summarised in the following figure:

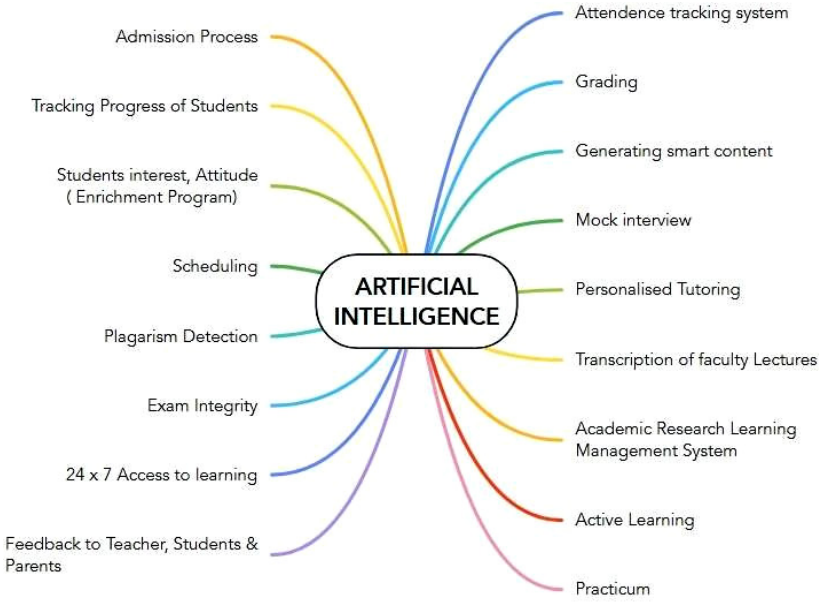

Figure 1: Utility of AI in different areas of Teacher education Institutes programme and practicum schools'

1. Practicum component:

It includes Microteaching, Peer teaching, Practice teaching and Internship (Teaching in school). This happens in the step by step manner in the teacher education institutes which is illustrated in the following figure.

AI is considered to be very good in planning; giving feedback of any activity this trait can take the practicum component of teacher education programme in long way as this will reduce stress of teacher educator as well as student teacher. With AI planning practicum component will be eased as it uses previous experiences to curb mistakes done in the previous years. AI can be used to different components of practicum components in the following ways:

I. Microteaching:

As microteaching involves training student teacher with different skills involved in teaching e.g. Explanation, Set induction, Questioning, Stimulus variation, Closure etc. Where student teacher needs to exhibit above skills in 5 minutes, in this regard AI driven technology can be used effectively to work as the time keeper which can send signal to the student teacher presenting skill to stop after Minutes. AI can also be used to provide feedback to the student teacher about his strong as well as week areas during the teach re-teach process. This will take care of biasness or favouritism from teacher educators and peers. AI can also check student teacher pronunciation, voice modulation, stimulus variation and also the conceptual clarity of the lesson presented in the microteaching. AI can be use to check the lesson plan and to provide feedback with respect to spelling mistakes, concept clarity and right use of Teaching Learning Material (TLM) for the taken concept. AI can prepare microteaching time table without any mistakes.

II. Peer teaching:

Here more content, more time and comparatively more student teachers attend the lesson then the microteaching. Here student teacher gives 30 to 35 minutes lesson to the peers and teacher educator who gives feedback to the student teacher. AI can do this job of giving feedback in terms of right pronunciation, voice modulation; lesson plans mistakes in terms of concept and spelling mistakes and work as a time keeper. AI can be use to prepare lesson plan but care should be taken to avoid extra use which may hamper creativity of student teachers.

III. Practice teaching:

In this student teacher has to visit school to take hands on experience where student teacher has to give 30 to 35 minutes lesson in front of real school students. During practice

teaching, teacher educator also sits to give feedback at the end of lesson. Since this provide real time experience to the student teacher feedback plays important role to assess teacher students' concept clarity and pedagogical skills. AI can supplement the feedback given by the teacher educator since it has features such as speech recognition, movement detection and checks concept taught in the classroom. AI can help student teacher in the classroom management by noting down the school students' names for good as well as bad behaviour, which can be rightly rewarded by the student teacher. AI can help in removing biasness which we may find in the assessment of student teacher's. AI can work as a time keeper to give message through hands free gadget to finish on time.

IV. School internship:

In school internship student teacher need to work as a teacher in the school for almost one month. Here student teacher has to attend and do all activities during the school hours from attending morning school assembly to remedial classes. AI can work as a personal tutor during remedial classes which can provide feedback to student teacher as well as school student how to improve and where the school student goes wrong. AI can help student teacher to prepare speeches, lesson content, quizzes for evaluation, concept maps, planning various activities required for schools lessons, curricular and co-curricular activities. AI can help in classroom management such as noting behaviour of schools students, attendance marking, reporting the parents about the students' absenteeism, rude behaviour etc. AI can help student teacher in assessment and evaluation of students' performance in cognitive, affective and psycho-motor domain which indirectly helps in overall development of school student as well as student teacher.

2. Personalised tutoring:

As educational research has showed that personalised tutoring helps students' to achieve more in studies than the students learning in classroom where one teacher teaches and 30 to 40 students learns. AI has tremendous potential to work as personalised tutor which provides flexibility to learner of when and where to learn. AI can make learning interesting as it has interacting panel, colourful and sound which keeps students on the topic. It also provides assessment through quizzes and feedback of where learner has gone wrong and how to correct mistakes.

3. Tracking progress of school students' and students' teacher:

With the AI now we can track students' progress which enables us to compare the previous year marks/grades with the latest scores/marks accordingly message is send on the parents or guardian mobile about the detailed analysis such as how the learner has done in the past and present, whether remedial is required in particular subject or not. AI can store many such progress cards as record which can be used for research purpose.

4. Knowing students' interest and attitude:

Through prognostic assessment at the early stage of the child we can know the interest and attitude of the teacher student's which helps in planning enrichment programme for teacher student based on their interest and attitude e.g. certificate courses can be arranged for student teacher, Workshops, seminars and many curricular and co-curricular activities can be planned in the teacher education institutes.

5. Plagiarism detection:

AI has utility in plagiarism detection as it can give instruction to the plagiarism software which can provide plagiarism in percentage. AI can be helpful to reduce this plagiarism percentage by paraphrasing and can also provide feedback about the quality of research undertaken.

6. Academic research:

As in this modern era where research has very important role to foster learning in academics. As teacher educator and student teachers' are involved in different research.AI can help to plan and execute the plan very effectively by providing quality literature review, grammar correction, correct spelling mistakes and can also publish the research work in reputed and quality journal.

7. Transcription of teacher / faculty lectures:

Some student teacher' as well as school students' has language specific difficulty such as understanding the spoken language due to foreign accent.AI can provide transcript of what teacher or faculty has said during the lecture. This can serve as the most precious lecture notes e.g. when school or teacher training institutes arrange special lecture by resource person from foreign country or from different states whose accent are different transcript are generated by using AI.

8. Mock interviews:

As Teacher training programme is the professional programme where while selecting as the school teacher, teacher students needs to answer the interviews in front of experts. This skill of facing the job interview can be provided by the AI through its smart programmes. This will enable student teachers' to mentally prepare for the job interview in advance.

9. Learning Management System (LMS):

Now, entire teaching learning process can be monitored by the Learning Management system which is controlled by the AI now a day. Teacher educator can be benefited by AI as all notes, related videos links and assessment can be done through LMS which can keep records for many years. When LMS is powered by the AI all work of scheduling assignment, project and assessment of Quizzes, answer papers feedback can be

automatically done by the AI enabled LMS.

10. Exam Integrity:

Maintaining ethical standards in the exam hall is very important aspect of any exam; this work can be done by the AI, which can track the students' movement in the examination hall for unfair practice such as copying, discussing in the examination hall. In this days since online exam are in the great demand AI can trace students' movement and provide notification to the teachers about the unfair practices. AI can be use to conduct online interviews or viva for the learner. AI is widely used by the open universities to track the unfair means during the examination.

11. Attendance tracking system:

AI can help institutions to keep track of absenteeism as this is the biggest issue in the higher education system. AI enable system can send notification of students' absenteeism to parents or guardian. This helps teacher educator to maintain the attendance of students in practicum component as it is very difficult to maintain practicum component attendance in the teacher education institutes.

12. Grading:

In the schools' as well as in teacher training institutes preparation of results with grades becomes hurricane task for teachers but with the help of the AI this task is reduced to the figure tips as AI is capable of providing progress card with grades with almost no error. These features have reduced the work of teacher educator as in teacher education programme many components are there and need lot of hard work to assemble them and to prepare error free result.

13. Generating smart content:

AI has special features which can generate smart, latest and subject specific content based on the command given to it. Content need special or expert assessment as it in the early stage.

As AI is using previous experience to know the new thing in coming years it can give best results. Now a day's many content creator software's are available such as Microsoft powered "chatgpt", Google powered "Bard AI", "chatsonic" etc. This AI is trained to follow instruction in a prompt and provide detailed response.

14. 24X7 Access to learning:

Since students' has individual difference in learning any subject when it comes to time, place and content material. AI can go hand in hand to cater to the individual difference and provide any time anywhere learning by using feature like 24X7 accesses to learning.

15. Admission process:

AI can be use to admission process right from the planning to display of merit list. It can handle scrutiny of students' based on category General, Other Backward Classes (OBC), Scheduled Tribes (ST), Scheduled Castes (SC), Economically Backward Classes (EWS). AI can help students in filling of admission form, provides feedback about the college, placement in future etc.

Conclusion:

Future of AI is not known to anyone but one thing is clear if we use it wisely it can solve many problems related to education as most of the school and higher education students' loves to use and learn from the technology. AI also has potential to cater to needs of special children's. It has potential to bring equality in schools'. Lifelong learner AI will help as a personal trainer which will solve biggest difficulty of the lifelong learner (Distance learner though). AI throws away boredom in teaching learning process and make teaching and learning active. As AI can go a long way in improving the teaching learning process but can't provide human touch to the teaching learning process, hence teacher will remain in the education system without any hesitation rather AI will support or assist in the teaching and learning process to teachers' and students' respectively, hence making it students' friendly and teacher friendly classroom. Let's touch the lives of every student's in every possible way with the help of AI.

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विद्यार्थ्यांच्या सर्वांगीण विकासातील माध्यमिक शिक्षकांच्या भूमिकेचा अभ्यास
(Study of secondary teachers role in holistic development of students)

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सारांश (Abstract) -

प्रत्येक मूल अव्दितीय आहे. त्याच्या किंवा तिच्याकडे अव्दितीय व्यक्तिमत्त्व वैशिष्ट्ये, स्वारस्ये, प्राधान्ये, मूल्ये, वृत्ती, सामर्थ्य आणि कमकुवतपणा आहेत. शैक्षणिक अभ्यासक्रम प्रत्येक मुलाला त्याच्या किंवा तिच्यात असलेल्या विशिष्टतेसह संरेखित करून जगात त्याचे वेगळे स्थान शोधण्यात मदत करण्यास सक्षम असणे आवश्यक आहे. हे साध्य करण्यासाठी, मुलाचा सर्वांगीण विकास अत्यंत महत्वाचा आहे. मुलाच्या जीवनाच्या सुरुवातीच्या टप्प्यापासून शिक्षणाद्वारे सर्वांगीण विकास हे गेल्या शतकाच्या तुलनेत आज अधिक महत्त्वाचे झाले आहे.

म्हणजे मूलत: मुलामध्ये बौद्धिक, मानसिक, शारीरिक, भावनिक आणि सामाजिक क्षमतांचा विकास करणे जेणेकरून तो किंवा ती दैनंदिन जीवनातील मागण्या आणि आव्हानांना तोंड देण्यास सक्षम असेल. कामाच्या व्यावसायिक क्षेत्रात यश मिळवण्यासाठी या क्षमता अत्यंत महत्त्वाच्या आहेत.

समग्र शिक्षणामध्ये दार्शनिक अभिमुखता आणि अध्यापनशास्त्रीय पद्धतींची विस्तृत श्रेणी समाविष्ट आहे.त्याचे लक्ष आहे संपूर्णता, आणि ते मानवी अनुभवाच्या कोणत्याही महत्त्वपूर्ण पैलूंना वगळण्याचा प्रयत्न करत नाही. ही एक सर्वसमावेशक चळवळ आहे जिचे मुख्य वैशिष्ट्य हे आहे की शैक्षणिक अनुभव हे भौतिकवादाला कमी करून वास्तविकतेला गतिशील करून अधिक आध्यात्मिक विश्वदृष्टी देऊन वास्तविक समग्र दृश्ये प्रस्थापित करून संतुलित विकासाला प्रोत्साहन देते आणि विविध पैलूंमधील संबंध जोपासते. समग्र शिक्षणाचा संबंध जीवनानुभवाशी असतो, संकुचितपणे परिभाषित मूलभूत कौशल्यांशी नाही.

प्रमुख शब्द - शिक्षण, समग्र शिक्षण, सर्वांगीण विकास

प्रास्ताविक (Introduction)-

या मॉन्टेसरीने गेल्या शतकाच्या सुरुवातीच्या काळात जे सांगितले ते आज २१ व्या शतकात अधिक प्रासंगिक आहे कारण केवळ शैक्षणिक उत्कृष्टता यापुढे जीवन आणि करिअरमधील यश आणि आनंदाची खात्री देऊ शकत नाही. मुलाच्या जीवनाच्या सुरुवातीच्या टप्प्यापासून शिक्षणाद्वारे सर्वांगीण विकास हे गेल्या शतकाच्या तुलनेत आज अधिक महत्त्वाचे झाले आहे. समग्र विकास हा शिक्षणाचा एक व्यापक दृष्टीकोन आहे ज्याचा उद्देश मानवी मेंदूचे अनेक पैलू किंवा क्षमता विकसित करणे आहे. पारंपारिक शैक्षणिक आणि शिक्षण प्रणाली केवळ बौद्धिक

क्षमतांच्या विकासासाठी उद्दिष्ट ठेवतात. परंतु सर्वांगीण वाढीचा उद्देश शारीरिक क्षमता, बौद्धिक क्षमता, संज्ञानात्मक किंवा मानसिक क्षमता, भावनिक क्षमता आणि सामाजिक कौशल्यांचा विकास करणे आहे.

सर्वांगीण विकास (Holistic Development)

सर्वांगीण विकास म्हणजे एखाद्या व्यक्तीची सामाजिक, भावनिक, शारीरिक, मानसिक आणि बौद्धिक वाढ. शिक्षणामध्ये सर्वांगीण दृष्टीकोन घेणे म्हणजे मुलांच्या वाढीच्या सर्व पैलूंवर लक्ष केंद्रित करणे, केवळ त्यांच्या शैक्षणिक प्रगतीवरच नव्हे.सर्वात महत्त्वाचे म्हणजे, हे मुलाचे संपूर्ण कल्याण स्थापित करण्याबद्दल आहे.

सर्वांगीण विकासाचे प्रमुख घटक (Key Elements of Holistic Development)

जेव्हा आपण मुलाच्या सर्वांगीण विकासाबद्दल बोलतो तेव्हा आपल्याला हे समजून घेणे आवश्यक आहे की सर्वांगीण विकास महत्त्वाचा आहे. सर्वांगीण वाढ खालील मार्गांनी बालकांच्या व्यक्तिमत्व विकासाला लक्ष्य करण्याचा प्रयत्न करते:

१) संज्ञानात्मक (Cognitive)

संज्ञानात्मक विकास मेंदू आणि त्याच्या विकासाशी संबंधित आहे, म्हणजेच, मुलाची बुद्धिमत्ता. ०५ वर्षाच्या वयापर्यंत सरासरी मेंदू त्याच्या क्षमतेच्या ९०% पर्यंत विकसित होतो, म्हणून पूर्व प्राथमिक शाळेमध्ये प्रवेश करणारी मुले आधीच कमाल क्षमतेच्या बाबतीत पूर्ण विकासाच्या जवळ असतात. हे सर्वज्ञात सत्य आहे की तरुण मने माहिती आत्मसात करण्यात आणि लक्षात घेण्यास तसेच काही क्रियाकलाप आणि वर्तन स्वीकारण्यात जलद असतात.योग्य मार्गदर्शनाने, हे ताजे मन बरेच काही करू शकतात.

संज्ञानात्मक विकासामध्ये विचार करणे, समस्या सोडवणे आणि संकल्पना समजून घेणे समाविष्ट आहे आणि सर्वांगीण विकासातील हा एक महत्त्वाचा घटक आहे. मुलाच्या सर्वांगीण विकासासाठी हा एक अतिशय महत्त्वाचा घटक आहे.

२) भाषा (Language)

भाषा आणि भाषण हे संगोपन प्रक्रियेचे अविभाज्य भाग आहेत. चांगले बोलणे आणि स्पष्टीकरण ही आजच्या जगात आवश्यक कौशल्ये आहेत. ०५ वर्षाखालील मुले भाषिक क्षमता झपाट्याने पकडतात आणि चांगले फुलतात. याच काळात मेंदूचा विकास झपाट्याने होत असल्याने, दृष्टी, आवाज आणि बोलण्याच्या पद्धतींना उत्तेजन देणे आवश्यक आहे.मुले त्यांच्या मातृभाषेतील लहान शब्दांपासून सुरुवात करतात आणि हळूहळू जटिल वाक्यांकडे जातात.हळुहळू, इतर भाषांकडे, सामान्यतः इंग्रजी किंवा तृतीय भाषेकडे स्थलांतरित केले जाते आणि मुलाच्या सर्वांगीण विकासात हा दुसरा सर्वात महत्त्वाचा घटक आहे.

३) सामाजिक-भावनिक (Social-Emotional)

मेंदूच्या सामाजिक आणि भावनिक बाजू समोर आणण्यासाठी विद्यार्थ्यांना अशा अनुभवांमधून जावे लागते जे भावनांवर नियंत्रण ठेवताना सकारात्मक नातेसंबंधांसाठी तरतुदी देतात.विश्वास आणि सुरक्षा हे यातील मूलभूत भाग आहेत, ज्याशिवाय कदाचित मूल वेड्यासारखे वागू शकते.एक मूल त्याच्या विकासाच्या वर्षांमध्ये सर्वात असुरक्षित असते आणि त्याला लक्ष

आणि प्रेमाची आवश्यकता असते.विश्वासार्ह प्रौढांसोबत मिळणाऱ्या सुरक्षिततेमुळे भविष्यातील भावनिक दुव्यांसाठी संलग्नक आणि मजबूत पाया निर्माण होतो कारण ते त्यांच्या क्षमता आणि आत्मभावनेमध्ये आत्मविश्वास आणि सुरक्षित राहायला शिकतात.म्हणून, सर्वांगीण विकासाचा तिसरा सर्वात महत्त्वाचा घटक म्हणून, शिक्षक आणि पालकांनी मुलासाठी सर्वांगीण वाढ सुनिश्चित करण्यासाठी सुरक्षित आणि अनुकूल वातावरण राखणे आवश्यक आहे. मुलांना भावनांचा ताबा घेण्यास शिकवण्यासाठी मदतीची गरज आहे. राग व्यवस्थापन, संवेदनशीलतेला सामोरे जाणे, नैराश्य, अहंकार इत्यादी निरोगी सामाजिक-भावनिक विकासाचे पैलू आहेत.हे सुनिश्चित करते की मूल सर्वांगीण दृष्टीकोनातील विकासाच्या इतर प्रकारांसाठी अधिक खुले आहे.

४) शारीरिक (Physical)

हे सर्वश्रुत आहे की, मुले ही बेलगाम उर्जेचे छोटे गोळे असतात.एकंदर सर्वांगीण वाढीसाठी आवश्यक मज्जा तंतूंची जोडणी करण्यासाठी ही ऊर्जा आवश्यक आहे. व्यायाम आणि कोणत्याही स्वरूपाच्या हालचालीमुळे शरीरात रक्त प्रवाह वाढतो. मेंदूमध्ये रक्त प्रवाह वाढल्याने, मूल नवीन माहिती आणि संकल्पना आत्मसात करण्यास सक्षम होते. यामुळे कारक कौशल्यांचा विकास हा स्थूलाकडून उत्तमाकडे होतो जे मुलाला निरोगी आणि तंदुरुस्त ठेवण्यास सक्षम करते. इतकंच नाही तर मुलं त्यांच्या संवेदनांच्या आकलनाबद्दल अधिक जागरूक राहायला शिकतात आणि भविष्यात चांगल्या प्रकारे अंमलात आणण्यासाठी त्यांचे परिणाम ओळखतात.

समग्र शिक्षणाचे फायदे (Benefits of Holistic learning)

१) सुधारित शैक्षणिक उपलब्धी:

सर्वांगीण शिक्षण प्रत्येक विद्यार्थ्याला शिकण्याच्या शैलीची पूर्तता करून आणि एक सहाय्यक शैक्षणिक वातावरण प्रदान करते. विद्यार्थ्यांच्या पार्श्वभूमीची पर्वा न करता शैक्षणिक सुधारणा घडवून आणण्यास सहाय्यीभूत मदत करते. जेव्हा विद्यार्थ्याना शारीरिक आणि भावनिकदृष्ट्या सुरक्षित वाटत असेल आणि शिक्षकांशी त्यांचे चांगले संबंध असतील तेव्हा त्यांच्या मेंदूची क्षमता वाढते.

२) उत्तम मानसिक आणि भावनिक कल्याण:

सुरक्षित आणि आश्वासक वातावरणात, जिथे शैक्षणिक आणि सामाजिक आणि भावनिक शिक्षणावर भर दिला जातो, विद्यार्थ्यांना आत्म-जागरूकता, आत्मविश्वास आणि जबाबदारीची भावना हे गुण आत्मसात करण्याची संधी असते.

३) समस्या सोडवण्याची क्षमता विकसित करणे:

ज्या विद्यार्थ्यांना त्यांच्या आजूबाजूला अस्तित्वात असलेल्या वास्तविक जगातील समस्यांचे निराकरण करण्याची संधी मिळते त्या विद्यार्थ्यांमध्ये चिकित्सक विचार करण्याचे कौशल्य विकसित होते. हे अनुभव विद्यार्थ्यांना त्यांच्या प्रत्यक्ष करिअरमध्ये आवश्यक असलेली कौशल्ये देतात, जसे की माहिती कशी गोळा करावी, विश्लेषण कसे करावे, प्रभावीपणे संवाद कसा साधावा आणि इतरांशी सहयोग आणि कार्य कसे करावे.

शिक्षकांचा सहभाग समग्र शिक्षणामध्ये कसा मदत करतो?
(How teacher involvement helps in Holistic Learning?)

१) निरोगी विद्यार्थी-शिक्षक संबंध

जेव्हा शिक्षक विद्यार्थ्यांशी मजबूत बंध निर्माण करण्यास सक्षम असतात, तेव्हा त्यांची वर्गातील कामगिरी आणि व्यस्तता सकारात्मक असते. जेव्हा विद्यार्थ्यांना शिकण्याच्या वातावरणात सुरक्षित वाटते तेव्हा त्यांना यशाची उच्च संधी असते. शिक्षकांनी विद्यार्थ्यांच्या सामर्थ्य आणि गरजांना प्रतिसाद देऊन आणि सांस्कृतिकदृष्ट्या संवेदनशील रीतीने वागून मजबूत नातेसंबंध जोपासले पाहिजेत. शिक्षकांनी विद्यार्थ्यांना वर्गातील नियम विकसित करण्यास आणि नेतृत्वाची भूमिका घेण्यास मदत करण्याची परवानगी दिली पाहिजे. यामुळे विद्यार्थ्यांमध्ये विश्वास आणि संवाद वाढतो आणि चांगली कामगिरी करण्याची त्यांची प्रेरणा वाढते.

२) आत्मविश्वास वाढवणे

विद्यार्थ्यांना असे वाटले पाहिजे की ते शाळेत आहेत आणि त्यांच्याकडे साध्य करण्याची क्षमता आहे. विद्यार्थ्यांना जे समजते ते शिकण्यासाठी आणि संवाद साधण्याच्या विविध संधी उपलब्ध करून शिक्षक आत्मविश्वास वाढविण्यात मदत करू शकतात. शिक्षकांनी विद्यार्थ्यांची अद्वितीय शक्ती ओळखण्यास आणि सर्व विद्यार्थ्यांना समान वागणूक देण्यास सक्षम असावे. विद्यार्थ्यांच्या जीवनाशी संबंधित आणि वास्तववादी धडे आहेत याची खात्री करून विद्यार्थ्यांची प्रेरणा वाढवता येते.

३) भावनिक प्रतिबिंब समाविष्ट करणे

कधी कधी शिक्षकासाठी, मुलाच्या मानसिक आणि भावनिक कल्याणासाठी शैक्षणिक कामगिरीच्या पलीकडे पाहणे नेहमीच सोपे नसते. शिक्षकांनी विद्यार्थ्यांना दैनंदिन दिनचर्यामध्ये भावनिक समज वाढवण्यासाठी, चिंतन करण्यासाठी किंवा ध्यान करण्यासाठी विशिष्ट वेळ द्यावा. सहानुभूती वाढवण्यासाठी प्रभावी ऐकणे आणि निरीक्षण कौशल्ये हा धड्यांचा विषय असू शकतो.

संशोधनाची गरज व महत्व-(Need and Importance of the Research)

संशोधनाची गरज-

१) आजकाल, बहुतेक कंपन्या किंवा संस्था केवळ विद्यार्थ्यांच्या एकूण शैक्षणिक कामगिरीचा विचार करत नाहीत परंतु विविध नोकऱ्यांसाठी भरती करताना विद्यार्थ्यांच्या सर्वांगीण विकासाचाही विचार करा.यामुळे शाळा आणि महाविद्यालयांमधील विद्यार्थ्यांचा सर्वांगीण विकास होणे अत्यंत महत्त्वाचे ठरते.

२) ते दिवस गेले जेव्हा पालक आपला संपूर्ण दिवस मुलांसोबत घालवायचे. तंत्रज्ञान ज्या प्रकारे प्रगत होत आहे आणि शिक्षणाच्या पद्धती बदलत आहेत, पालकांना आता त्यांच्या मुलांना अधिक व्यस्त आणि शिकण्याच्या जवळजवळ सर्व पैलूंमध्ये सहभागी करून घेण्यात रस आहे.पालकत्वामध्ये समग्र विकासाच्या अर्थाला खूप महत्त्व प्राप्त झाले आहे.

३) अगदी सुरुवातीपासूनच, मुलाला विविध खेळ आणि क्रियाकलापांच्या संपर्कात आणले जाते जे त्याला/तिला नवीन गोष्टी शिकण्यास सक्षम करते.यामुळे शाळांमध्येही विद्यार्थ्यांना शिकवण्याच्या पद्धतीत पूर्णपणे बदल झाला आहे.

४) नवीन युगातील तंत्रज्ञान आणि शिकवण्याच्या पद्धतींच्या आगमनाने, शाळांमधील मुलाचा सर्वांगीण विकास ही एक गरज बनली आहे.त्याच कारणांमुळे, प्राथमिक आणि माध्यमिक शाळांमधील विद्यार्थ्यांचा सर्वांगीण विकास देखील महत्त्वपूर्ण बनला आहे.

संशोधनाचे महत्व-

सदर संशोधनातून मिळणाऱ्या निष्कर्षांचा फायदा विद्यार्थी ,शिक्षक व पालक यांना होणार आहे म्हणूनच विद्यार्थी ,शिक्षक व पालक यांच्या दृष्टीने संशोधनाचे महत्व प्रतिपादित केले आहे .

विद्यार्थ्यांच्या दृष्टीने -

विद्यार्थ्याना स्वत:च्या आवडी निवडींची जाणीव होऊन विविध उपक्रमांचे आपल्या सर्वांगीण विकासातील महत्व लक्षात येईल.विद्यार्थ्याची निर्णय क्षमता वाढविण्यासाठी मदत होईल. तसेच त्यांच्या कल्पना शक्तीचा विकास होईल. पृथकरणात्मक विचार करून समस्या निराकरण करण्याची सवय लागेल. सर्वसामान्यपणे स्वत:च्या भावना दुसऱ्यांसमोर व्यक्त करू शकतील. विद्यार्थ्याची कार्यक्षमता विकसित होण्यास मदत होईल.

शिक्षकांच्या दृष्टीने -

शिक्षकांना विद्यार्थ्याच्या सर्वांगीण विकासासाठी कोणते घटक महत्व पूर्ण आहेत हे लक्षात येईल. तसेच विद्यार्थ्याच्या सर्वांगीण विकासासाठी विविध सहशालेय उपक्रम राबवून त्यात विद्यार्थ्याच्या सक्रिय सहभाग कसा वाढेल यासाठी प्रयत्न करता येतील. विद्यार्थ्यांच्या विचार शक्तीला चालना देण्यासाठी वेगवेगळया उपक्रमांचे, स्पर्धांचे आयोजन करता येईल. विद्यार्थ्यांच्या अध्ययन शैलीनुसार योग्य अध्यापन पद्धतीचा वापर शिक्षकांना करता येईल. त्या दृष्टीने विद्यार्थ्याना योग्य दिशेने मार्गदर्शन व विकास करता येईल.

पालकांच्या दृष्टीने -

आपल्या पाल्याच्या सर्वांगीण विकासाचे महत्व पालकांच्या लक्षात येईल. ज्याप्रमाणे मातीच्या गोळ्याला आकार योग्य वेळीच दिला जातो त्याप्रमाणे मुलांच्या वर्तनाला योग्य वळण बालवयातच लावता येते आणि त्यामध्ये पालकांचा वाटा महत्वपूर्ण असतो. त्या दृष्टीने पालक पाल्याच्या वर्तनाला योग्य वळण लावू शकतात व मार्गदर्शन करून त्यांच्या प्रगतीसाठी योग्य तो निर्णय ते घेऊ शकतील. शालेय संपादणुकी बरोबरच इतर विविध घटकांचाही विकास करणे गरजेचे आहे आणि त्यासाठी विशेष प्रयत्न करावे लागतात हे पालकांना समजेन.

शीर्षक- (Title of the Research) -

विद्यार्थ्यांच्या सर्वांगीण विकासातील माध्यमिक शिक्षकांच्या भूमिकेचा अभ्यास

समस्या विधान-(Statement of the Research Problem) -

पुणे शहरातील माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकासातील शिक्षकांच्या भूमिकेचा अभ्यास करणे.

संशोधनाची उद्दिष्टे (Objectives of the Research)-

१) माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकास संकल्पनेच्या शिक्षकांना असणाऱ्या जाणिवेचा शोध घेणे.

२) माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकासातील शिक्षकांची भूमिका जाणून घेणे.

३) माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकासातील शिक्षकांच्या योगदान वृद्धीसाठी उपाय योजना सुचविणे.

संशोधनाची व्याप्ती -(Scope of the Research)

१) प्रस्तुत संशोधन हे पुणे शहरातील सर्व इंग्रजी माध्यमाच्या माध्यमिक शाळांशी संबंधित आहे.

२) प्रस्तुत संशोधनाची शैक्षणिक व्याप्ती ही विद्यार्थ्यांच्या सर्वांगीण विकासाशी संबंधित आहे.

संशोधनाची मर्यादा -(Limitations of the Research)

१) प्रस्तुत संशोधनातील निष्कर्ष शिक्षकांनी दिलेल्या प्रतिसादाच्या विश्लेषणावर आधारित आहेत.

२) प्रस्तुत संशोधन हे विद्यार्थ्यांच्या सर्वांगीण विकासातील संज्ञानात्मक (Cognitive),भाषा (Language), सामाजिक-भावनिक (Social-Emotional), शारीरिक (Physical) या घटकांशी संबंधित आहे.

संशोधनाची परिमर्यादा -(Delimitations of the Research)

१) प्रस्तुत संशोधन फक्त माध्यमिक शाळातील विद्यार्थ्यांच्या सर्वांगीण विकासाशी संबंधित आहे.

२) प्रस्तुत संशोधन पुणे शहरापुरतेच मर्यादित असून प्रस्तुत संशोधनात इंग्रजी माध्यमाच्या शाळांचाच समावेश करण्यात आला आहे.

३) प्रस्तुत संशोधनासाठी फक्त माध्यमिक शाळांमधील शिक्षकांच्या भूमिकेचा विचार करण्यात आला आहे.

संशोधनाची कार्य पध्दती -(archProcedure of the Rese)

प्रस्तुत संशोधनाच्या प्रत्यक्ष कार्यवाहीसाठी वर्णनात्मक संशोधन पद्धतीतील सर्वेक्षण पद्धतीची निवड केली. प्रस्तुत संशोधनासाठी संशोधक निर्मित संशोधन साधना (प्रश्नावली) द्वारे विद्यार्थ्यांकडून माहिती भरून घेण्यात आली आहे. त्यासाठी इंग्रजी माध्यमाच्या माध्यमिक शाळेतील शिक्षकांची संभाव्यतेवर आधारित नमुना निवडीच्या पद्धतीतील सुगम यादृच्छिक न्यादर्श पद्धतीतील लॉटरी पद्धतीने निवड करण्यात आली. प्रतिसादकांद्वारे प्राप्त माहिती कोष्टकांमध्ये नोंदवल्यानंतर, त्याची शेकडेवारी मांडल्यानंतर त्याचे सादरीकरण वृत्तालेखाद्वारे करण्यात आले व त्यानंतर निरीक्षण व अर्थनिर्वचन मांडण्यात आले.

प्रस्तुत संशोधनातील उद्धिष्टांनुसार माहितीचे विश्लेषण व अर्थनिर्वचन मांडण्यात आले आहे. प्रस्तुत संशोधनाचे निष्कर्ष मांडून, प्राप्त निष्कर्षांवरून आवश्यक सबंधित घटकासाठी शिफारशी देण्यात आल्या.

संशोधनातील नमुना निवड -(Sample of the Research)

प्रस्तुत संशोधनासाठी पुणे शहरातील इंग्रजी माध्यमाच्या एकूण १० माध्यमिक शाळांची निवड संभाव्यतेवर आधारित नमुना निवड पद्धतीतील सुगम यादृच्छिक न्यादर्श निवड पद्धतीतील लॉटरी पद्धतीने करण्यात आली आणि इंग्रजी माध्यमाच्या माध्यमिक शाळेतील १०० शिक्षकांची संभाव्यतेवर आधारित नमुना निवड पद्धतीतील सुगम यादृच्छिक पद्धतीतील लॉटरी पद्धतीने करण्यात आली.

संशोधनातील माहिती संकलनाची साधने- (Research Data collection tool of the)

सदर संशोधनासाठी आवश्यक माहिती मिळविण्यासाठी आणि विद्यार्थ्यांच्या सर्वांगीण विकासातील शिक्षकांच्या भूमिकेचा अभ्यास करण्यासाठी संशोधक निर्मित प्रश्नावली हे साधन वापरले आहे. या प्रश्नावलीमध्ये एकूण २० प्रश्न होते. त्यामध्ये उद्दिष्ट क्र.१ साठी एकूण १० प्रश्न (५०%),उद्दिष्ट क्र.२ साठी एकूण ०५ प्रश्न (२५%) तर उद्दिष्ट क्र.३ साठी एकूण ०५ प्रश्न (२५%) प्रश्नांचा समावेश केला होता. यामध्ये ७५% प्रश्न हे बहुपर्यायी स्वरूपाचे, तर २५% प्रश्न हे मुक्त प्रश्न स्वरूपाचे आहेत.

संकलित माहितीचे विश्लेषण व अर्थनिर्वचन- (Interpretation of collected data &Analysis)

प्रस्तुत संशोधनाच्या दृष्टीने आवश्यक माहिती संशोधकाने तयार केलेल्या प्रश्नावली या साधनाच्या साहाय्याने संकलित केली व मिळविलेल्या माहितीचे शेकडेवारी या संख्याशास्त्रीय तंत्राचा वापर करून विश्लेषण केले आहे.

संशोधनाचे निष्कर्ष Conclucions of the Research) -

प्रस्तुत संशोधनातील उद्दिष्टांनुसार संशोधनाचे निष्कर्ष मांडण्यात आले.

१) माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकास संकल्पनेच्या शिक्षकांना असणाऱ्या जाणिवेचा शोध घेणे.

माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकास संकल्पनेच्या शिक्षकांना असणाऱ्या जाणिवेचा शोध घेण्यासाठी प्रश्नावलीमध्ये १ ते १० क्रमांकाच्या बहुपर्यायी प्रश्नाद्वारे माहिती संकलन करण्यात आले. माहितीचे विश्लेषण केल्यावर स्पष्ट होते की, ९५% शिक्षकांना सर्वांगीण विकास ही संकल्पना माहिती आहे.

विद्यार्थ्यांचा सर्वांगीण विकास म्हणजे काय , त्याचे मुख्य घटक , सर्वांगीण विकासाचे फायदे हे सर्व घटक सरासरी ६५% शिक्षकांना माहिती आहे.

९०% शिक्षकांना सर्वांगीण विकासातील मुख्य घटकांविषयी माहिती आहे.

८५% शिक्षकांना माहिती आहे की , शारीरिक विकासात संपूर्ण शरीराची हालचाल आणि ज्यामुळे पाचही ज्ञानेंद्रियांना चालना मिळून अध्ययनास प्रेरणा मिळते.

८०% शिक्षकांना माहिती आहे की ,संज्ञानात्मक आणि बौद्धिक क्षमता विकासामध्ये चिकित्सक विचार, सर्जनशील विचार आणि समस्या निराकरणाची क्षमता , आकलन क्षमता, तार्किक आणि संश्लेषणात्मक विचार क्षमता यांचा समावेश आहे.

७०% शिक्षकांना माहिती आहे की, भावनिक क्षमता विकासात आंतर-व्यक्ती क्षमता, सामाजिक क्षमता, आत्म प्रचिती, तद्नभूती या सर्वांचा समावेश आहे.

९०% शिक्षकांना माहिती आहे की,सामाजिक आंतर संबंध, आत्मविश्वास आणि कुतूहल यांचा सामाजिक कौशल्य विकासात समावेश असल्याने इतरांना मदत करून त्यांच्या संस्कृती, धर्माप्रती आदर व्यक्त करून उच्च मानसिक क्षमतेद्वारे जगाला सामोरे जाता येईल.

८५% शिक्षकांना माहिती आहे की,शिक्षणात सर्वांगीण विकास हया संकल्पनेवर महात्मा गांधी यांनी चर्चा केली आहे.

७५% शिक्षकांना माहिती आहे की,सर्वांगीण विकास महत्वाचा आहे कारण, विद्यार्थ्यांच्या व्यक्तिमत्वाचा उत्तम विकास होतो, जगाबरोबर कसा संवाद साधावा आणि समस्यांना कसे सामोरे जावे, सांघिक कार्य करण्यासाठी मदत करते.

८८% शिक्षकांना माहिती आहे की, अनुभवाधारित अध्ययन, समुदायाचा विचार, वैयक्तिक विकासास पूरक, शिक्षक मार्गदर्शित आणि स्वयं मार्गदर्शित ही सर्व सर्वांगीण विकासाची वैशिष्ट्ये आहेत.

९२% शिक्षकांच्या मते, वर्गाध्यापनात सर्वांगीण विकासासाठी अनुभवाधारित अध्ययन, स्वयं मार्गदर्शित अध्ययन, आशयाचा उत्तम वापर या अध्यापन पद्धतीचा समावेश होतो.

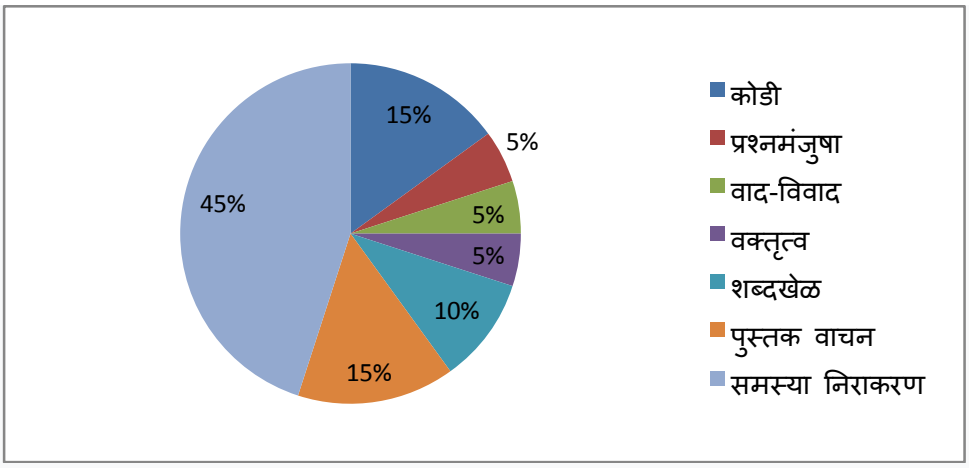
९६% शिक्षकांच्या मते, वर्गाध्यापनात सर्वांगीण विकास अध्ययन उपागमाचा अवलंब करण्यासाठी खेळ आणि शिका, पृच्छा आधारित अध्ययन, कला, क्रीडा आणि संगीत उपक्रम यांचा समावेश होतो.

९७% शिक्षकांच्या मते, सर्वांगीण विकासातील शिक्षकाच्या भूमिकेत मूलभूत कल्पनांच्या विकासासाठी अनुदेशनाची निर्मिती, विद्यार्थ्यांच्या आंतर क्रिया आणि सह संबंध विकसन, विद्यार्थ्यांसोबत मित्र, मार्गदर्शक, सुविधादाता, अनुभवी सुलभक या भूमिकांचा समावेश होतो.

८७% शिक्षकांच्या मते, विद्यार्थ्यांना त्यांच्या गतीने शिकण्यास मदत करणे, त्यांना त्यांच्या आवडीने नैसर्गिक वातावरणात अध्ययन करण्याची संधी उपलब्ध करून देणारे असतात.

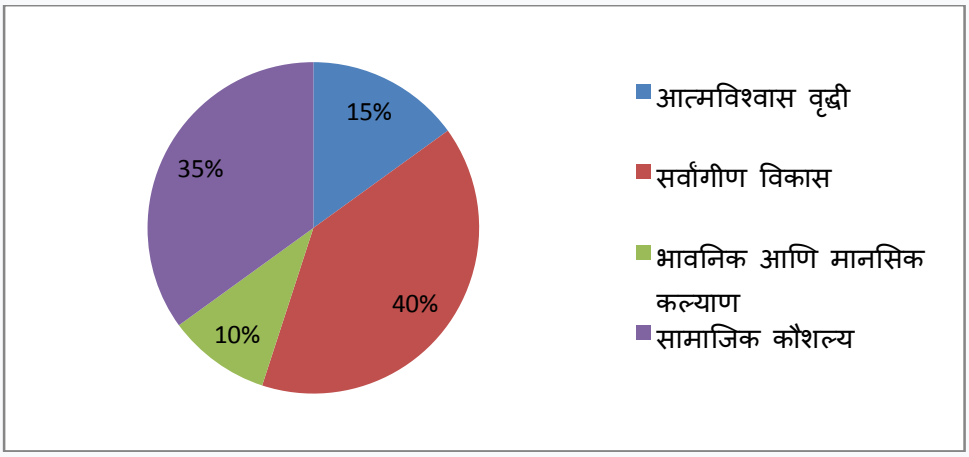
२) माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकासातील शिक्षकांची भूमिका जाणून घेणे.

माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकासातील शिक्षकांची भूमिका जाणून घेण्यासाठी प्रश्नावलीमध्ये ११ ते १५ क्रमांकाच्या बहुपर्यायी प्रश्नांद्वारे तसेच १६ ते २० क्रमांकाच्या मुक्त प्रश्नांद्वारे माहिती संकलन करण्यात आले. माहितीचे विश्लेषण केल्यावर स्पष्ट होते की, विद्यार्थ्यांच्या सर्वांगीण विकासासाठी वर्गाध्यापनात कोणते उपक्रम राबवावेत, कोणत्या पद्धतीने अध्यापन करावे, कोणते सहशालेय उपक्रम राबवावेत, विद्यार्थ्यांच्या सर्वांगीण विकासासाठी शिक्षकांची भूमिका कशी असावी. हे सर्व घटक सरासरी ७५% शिक्षकांना माहिती आहेत.



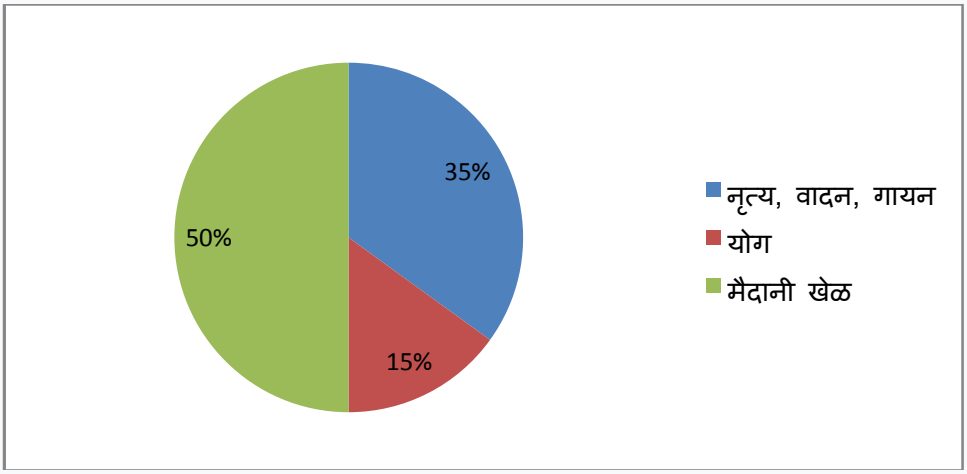
आकृती क्र. १.१

संज्ञानात्मक विकासासाठी शिक्षकांनी सुचविलेले सहशालेय उपक्रम



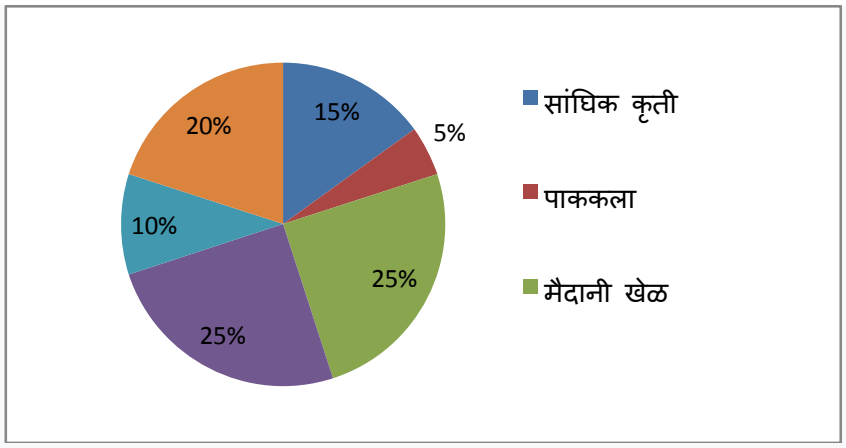
आकृती क्र. १.२

सर्वांगीण विकासाचे शिक्षकांनी सांगितलेले फायदे



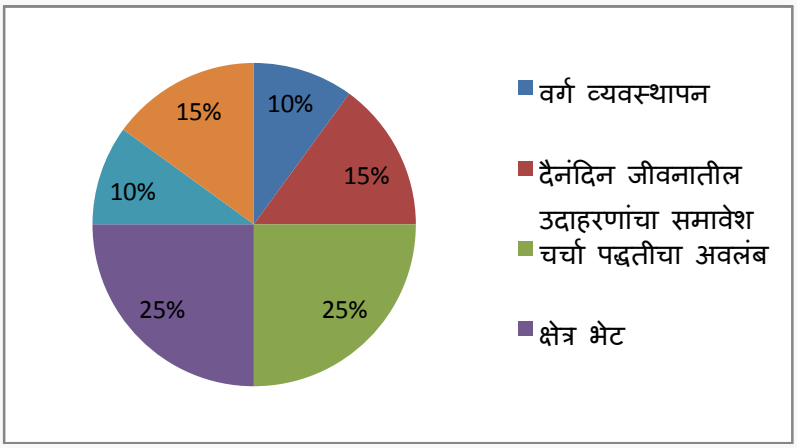
आकृती क्र. १.३

शारीरिक विकासासाठी शिक्षकांनी सुचविलेले उपक्रम



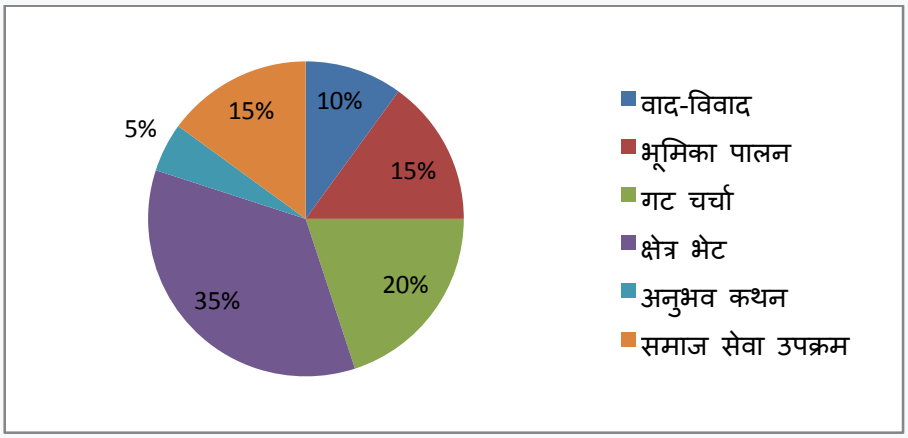
आकृती क्र. १.४

सर्वांगीण विकासासाठी शिक्षकांनी सुचविलेले उपक्रम



आकृती क्र. १.५

सर्वांगीण विकासासाठी शिक्षकांनी त्यांच्या अध्यापनात केलेले प्रयोग



आकृती क्र. १.६

सामाजिक कौशल्य विकासासाठी शिक्षकांनी सुचविलेले उपक्रम

३) माध्यमिक स्तरावरील शाळांतील विद्यार्थ्यांच्या सर्वांगीण विकासातील शिक्षकांच्या योगदान वृद्धीसाठी उपाययोजना सुचविणे.

उपाययोजना / शिफारशी – (Recomentations)

मुख्याध्यापकांसाठी शिफारशी -

१) विद्यार्थ्यांच्या सर्वांगीण विकासाविषयी शिक्षक व पालक यांना मार्गदर्शनासाठी कार्यशाळेचे आयोजन करावे.

२) शिक्षकांना विद्यार्थी हिताचे नवनवीन उपक्रम आयोजित करण्यासाठी प्रोत्साहन, मार्गदर्शन द्यावे.

३) शिक्षकांना वर्गाध्यापनात विविध नवनवीन तंत्रे व पद्धतीचा अवलंब करण्यासाठी प्रवृत्त करावे.

४) पालक व शिक्षक यांच्या साहाय्याने विद्यार्थ्यांच्या सर्वांगीण विकास वृद्धीसाठीच्या उपक्रमांसाठी सत्रांचे आयोजन करून त्याचा पाठपुरावा करावा.

शिक्षकांसाठी शिफारशी -

१) सर्वांगीण विकासातील (संज्ञानात्मक, भाषा , सामाजिक-भावनिक , शारीरिक(घटकांविषयी विस्तृत माहिती मिळवावी व त्यानुसार विद्यार्थ्यांमधील सर्वांगीण विकास वृद्धिंगत होण्यासाठी प्रयत्न करावेत.

२) विद्यार्थ्यांमधील सर्वांगीण विकास वृध्दीसाठी विद्यार्थि आणि पालक यांच्यासाठी स्वतंत्र मार्गदर्शनपर कृतिसत्रे, चर्चा सत्रे, कार्यशाळा यांचे आयोजन करावे.

३) विद्यार्थ्यांमधील ताण-तणाव कमी होण्यासाठी व व्यक्तिमत्व विकासासाठी विविध कार्यक्रमाची अंमलबजावणी करावी.

४) वर्गाध्यापनात विद्यार्थ्यांना सामावून घ्यावे, विद्यार्थ्यांना नेतृत्व द्यावे, विद्यार्थ्यांचा कृतियुक्त सहभाग वाढवावा.

५) विद्यार्थ्यांना आपली मते, विचार प्रकट करण्यास पोषक वातावरण उपलब्ध करून द्यावे.

६) विद्यार्थ्यांमधील परस्पर आंतरक्रिया वृध्दीसाठी तसेच विद्यार्थ्यांमधील कलागुण विकसित होण्यासाठी पूरक कार्यक्रमांचे आयोजन करावे.

पालकांसाठी शिफारशी -

१) आपल्या पाल्यांच्या विचारांचा, मतांचा आदर करावा. शैक्षणिक संपादणुकीबरोबरच शारीरिक, भावनिक आणि मानसिक विकासासाठी प्रयत्नशील रहावे.

२) पाल्यांना महत्त्वपूर्ण जबाबदारी देऊन ती पूर्ण करण्यासाठी मार्गदर्शन करावे.

३) पाल्यांना व्यक्त होण्यासाठी, समाजात एकमेकांत मिसळण्यासाठी, आंतरक्रिया समृध्द करण्यासाठी संधी उपलब्ध करून द्याव्यात.

४) पाल्यांशी मनमोकळेपणाने संवाद साधावा त्यांच्या शारीरिक आणि मानसिक विकासासाठी विविध खेळ आणि छंद वर्गात त्यांना पाठवावे.

५) घरात, कार्यक्रमात आणि विविध उपक्रमातून पाल्याना मनसोक्तपणे खेळू-बागडू द्यावे

विद्यार्थ्यांसाठी शिफारशी -

१) आपले विचार, मते, भावना मन मोकळेपणाने, निःसंकोचपणे, न घाबरता व्यक्त करावीत. यासाठी वाद-विवाद, उत्स्फूर्त वक्तृत्व, प्रश्न-मंजुषा, भूमिकापालन या सारख्या उपक्रमात सहभागी व्हावे.

२) मित्र-मैत्रिणींसोबत, नातेवाईक , शिक्षक , कुटुंबीय अश्या सर्वांसोबतच आत्मविश्वासाने , प्रामाणिकपणे संवाद साधावा.

३) वर्गाध्यापन प्रक्रियेत विद्यार्थि मित्र - मैत्रिणी व शिक्षक यांच्या समोर मनमोकळेपणाने आपली बाजू मांडावी.

४) शाळेतील सर्वच उपक्रमांमध्ये आवडीने सहभाग नोंदवावा.

५) स्वतःच्या शारीरिक , मानसिक , भावनिक आणि बौद्धिक विकासासाठी वेगवेगळ्या खेळ आणि संस्कार वर्गात सहभागी व्हावे.आपल्या आवडीनिवडी जोपासाव्यात.

अनुमान-

विद्यार्थ्यांना आज शाळांमध्ये केवळ शैक्षणिक धडे देणे आवश्यक नाही.एक शालेय शिक्षण प्रणाली जी मुलाला स्वतःच्या, भावना आणि मानसिक दबाव समजून घेण्यास मदत करते, त्याला किंवा तिला निरोगी आणि कार्यशील नातेसंबंध कसे तयार करावे तसेच लवचिकता आणि सांघिक भावना कशी विकसित करावी हे शिकण्यास मिळणे हे शिक्षणाचे खरे रूप आहे.अशी व्यवस्था विद्यार्थ्यांचे मनोबल वाढवते जेणेकरून ते देशाच्या वाढीसाठी आणि विकासात योगदान देणारे समाजाचे उत्कृष्ट नागरिक बनून त्यांच्या करिअरमध्ये अधिक उंची गाठू शकतात. म्हणूनच, शालेय वर्षांच्या सुरुवातीपासूनच विद्यार्थ्यांचा सर्वांगीण विकास अत्यंत महत्त्वाचा आहे.

विद्यार्थ्यांचा सर्वांगीण विकास सुनिश्चित करण्यासाठी शालेय अभ्यासक्रम विविध सह-अभ्यासक्रमांसोबत एकात्मिक असल्याची खात्री शाळेच्या संचालकांनी आणि शिक्षकांनी केली पाहिजे. विद्यार्थी शाळेचे संचालक आणि शिक्षक, करिअर समुपदेशक यांच्याकडून सल्ला घेऊ शकतात कारण त्यांना जीवनात यश मिळवण्यासाठी आवश्यक कौशल्ये समजतील.

शैक्षणिक संशोधनातील योगदान -

१) प्रस्तुत संशोधनामुळे सर्वांगीण विकासाविषयी माहिती मिळेल आणि त्याचे व्यक्तित्वाच्या विकासातील महत्व लक्षात येईल.

२) विद्यार्थ्यांना संघर्षमय परिस्थितीतून मार्ग काढण्यासाठी सर्वांगीण विकासातून योग्य मार्गदर्शन मिळेल.

३) सर्वांगीण शिक्षणामध्ये, शिक्षक मित्र, मार्गदर्शक, एक सुत्रधार किंवा अनुभवी प्रवासी सहकारी

असावा हे लक्षात येईल.

४) एक समग्र दृष्टीकोन म्हणून सर्वांगीण विकास या संकल्पनेची महती सर्वांना स्पष्ट होईल.

५) सर्वांगीण विकासातील शिक्षकाची भूमिका महत्व पूर्ण आहे हे अधोरेखित होईल.

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INNOVATIVE USAGE OF CHATGPT IN TEACHER EDUCATION PROGRAMME

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Abstract

The cornerstone of chatbot technology, artificial intelligence and machine learning, ensures that both their skill sets and knowledge bases will develop. However, there is no doubt that technology and artificial intelligence will have a significant impact on the expansion of higher education in India.

Modern artificial intelligence (AI) algorithms are used by ChatGPT's cutting-edge technology to understand natural language and respond properly. Both teachers and students can benefit from this state-of-the-art approach to education. In the twenty-first century, the methods of traditional schooling are no longer effective. Many of the goals of the Indian higher education system can be achieved because to ChatGPT.

Introduction

A Chat GPT is one of the most recent and intriguing breakthroughs in the area of advanced chatbots. The open-source AI research lab Open AI created the conversational artificial intelligence (AI) technology known as Chat CPT. As the name implies, chat GPT employs machine learning and natural language processing to give chatbots more human-like interactions with people. In order to produce text in conversational circumstances, a modified version of the GPT-3 model was used. Data from millions of chats, books, and articles was used to train it. It can be included in a variety of programmes, including chatbots, virtual helpers, and automatic writing programmes. The model maintains writing on a screen, making it a useful tool for applications requiring the development of natural language.

Historical context

The first artificially intelligent chatbot, known as A.L.I.C.E. (Artificial Linguistic Internet Computer Entity), was developed at the Massachusetts Institute of Technology (MIT) by Rechard Wallance.

A.L.I.C.E. was equipped with a natural language processing system that enabled it to communicate with people in a conversational manner. Next, IBM developed Watson, its own AI chatbot. Watson is able to interpret complex queries and respond in human-like conversations by combining AI algorithms with natural language processing. This opened the door

for the development of natural language-driven AI chatbots.

In 2016, Microsoft's Cortana and Google's Allo were launched, both of which featured AI powered chatbots capabilities. The following year saw the emergence of Facebook's M and Apple's Siri as well as the first commercially available AI based chatbot platform chat fuel.

The generative pre-trained Transformer (GPT) model from open AI, which was released in 2018, was the catalyst for the development of chat GPT. The development of Chat GPT, a hybrid chatbot platform combining both natural language processing and GPT technology, was sparked by the GPT model's ability to produce responses to inquiries and dialogues that resembled those of

humans. Chat GPT was created by the AI and research startup Open AI. The company launched ChatGPT on November 30, 2022. The first chatbot platform, Chat GPT, combines GPT technology with AI-powered natural language processing to deliver more precise and human- like responses. It is also capable of learning and comprehending discussions that are more complex, making it an effective tool for companies wishing to automate customer support procedures.

How Does Chat GPT Operate?

Chat GPT is built on the GPT-3 model, a complex AI system developed by the Open AI research team. The deep learning method GPT-3, or Generative Pre-trained Transformer 3, generates text using a number of neural networks. The GPT-3 model can produce new text by anticipating the next word in a sequence while learning from previously produced data. ChatGPT uses GPT-3 technology in its talks so that it can understand queries posed in everyday English and provide pertinent responses. ChatGPT can be used to build chatbots that converse with users more intuitively. The system is powered by a vast collection of data, including natural language text and speech, in order to grasp user input and generate suitable responses.Furthermore, ChatGPT has complex capabilities like sentiment analysis and content personalization that allow it to adapt dialogues to the user's preferences.

Significance of ChatGPT:

ChatGPT is adaptable and has applications outside of human talks. There are numerous uses for ChatGPT, including writing computer programs, writing music, Emails in draught, summaries of presentations, podcasts and articles, automate your social media postings, Invent a title for your piece. figuring out math issues, find suitable keywords for search engine optimization, Create content for websites, such as articles, blogs, and quizzes. Adapt current content for a new platform, such as a blog post's transcript of a presentation. assemble product descriptions, participate in video games providing assistance with job searches, including producing cover letters and resumes Ask trivial questions and simplify the description of complicated subjects.

Suggestions for Innovative Usage's

1. Generation of content

With the help of Chat GPT, new text can be generated in response to a prompt. With this, it is possible to make writing materials such as stories, essays, and other sorts of writing. It is possible for a teacher-in-training to develop engaging lesson plans, extracurricular activities, assignments, and projects in their specific fields of study that are in keeping with the standards and goals of the curriculum. Teacher trainees can use chat GPT to create educational resources for specific themes, including PowerPoint presentations, worksheets, Google Forms, handouts, and multiple- choice questions (MCQs). a questionnaire for gathering information for initiatives involving environmental education, action research, and other materials tailored to their students' requirements.

2. Writing an activity report

A variety of activity reports are needed by teacher candidates during the course. If ChatGPT provides templates, it will be simple to prepare reports of activity. It is unquestionably in their favour that teaching candidates also provide daily, activity, and weekly reports throughout the internship programme.

3. Templates for developing creative lesson plans

Teacher candidates can use Chat GPT to design innovative lesson plans for a range of classrooms and disciplines. Based on the requirements of the cutting-edge teaching strategy they have choose, they can receive advice on how to implement creative practises in classrooms.

4. Successfully involving substitute classes

The chat GPT platform can offer a variety of language games to efficiently run substitute classes. Most of the time, teacher candidates must participate in substitution classes, but because of their lack of preparation, they are unable to participate successfully. With the aid of the chat GPT platform, they may quickly create language games and get ready fully to effectively engage substitute classes.

5. Interdisciplinary activities

Chat GPT platforms offer a number of co-curricular activity suggestions in a matter of seconds, and those will be useful for teacher candidates to implement during the internship program. They can use this platform to gain a lot of helpful ideas. They are capable of handling these tasks successfully.

6. Drafting a report

With the use of chat GPT, teaching candidates can make use of the internship report writing guidelines. GPT talk advising teacher candidates on how to efficiently compose internship reports.

A teacher candidate is capable of producing high-caliber reports on the many activities they engage in during the course.

7. Making the tools for data collection

With chat GPT's assistance, teacher candidates may quickly develop data gathering instruments. They can simply gather data if they are gathering it for an action research project or an environmental education project by creating questionnaires with the aid of a platform.

8. A framework for creative methods

With the use of modern teaching techniques, teacher candidates must deliver engaging classes. They're not getting a clear idea of how to carry out these novel teaching techniques, is that right? When that time comes, you can make good use of our chat GPT platform to learn more about issues for specific standards. For each Teacher Trainee to successfully implement innovative teaching techniques during his internship program, Chat GPT offers a framework for creative lesson plans.

9. Interpretation of Language

A machine translation system can be created using Chat GPT, which can be adjusted to conduct language translation. Lesson plans are written by teacher candidates while participating in internship and microteaching programs. With the use of chat GPT's language translation features, they can then make efficient use of the platform to create various lesson plans in Hindi or Marathi.

The UGC has announced that students enrolled in higher education institutions where English is the primary language of instruction may complete exams in their mother tongue. Teacher Trainees can take advantage of chat GPT to quickly translate notes or any other topic into information that can be used to complete university exams.

10. Answering questions

Chat GPT can be tailored to respond to queries on a particular subject; this can be used in applications like search engines, educational platforms, and more, so it is possible to use GPT effectively in B.Ed. for writing assignments and tutorials. For writing question-and-answers, Chat GPT gives the necessary information.

11. Reinforcement of the concept

Often, teacher candidates mistakenly believe that concepts can be understood with fewer examples. This time, they can use the chat GPT platform to use more examples, analogies, and explanations to help them understand a specific idea. Chat GPT can help Teacher Trainees understand difficult concepts or subjects they are studying.

12. Developing Writing Techniques

Teachers in training can use Chat GPT to craft the first draught of their written

assignments and projects, practice teaching, internship, tutorials and lesson plans for micro teaching, which can save time and improve the quality of the work overall.

Benefits of ChatGPT in Teacher Education

ChatGPT offers a variety of subjects in real time and provides information rapidly.

Personalized education allows students to pose inquiries that are relevant to their areas of interest. even follows up with more inquiries to discuss GPT drive those interests.

A further resource is ChatGPT, which provides teachers with a variety of information by quickly searching its database.

The AI program allows students to practice their language abilities, receive feedback, and ask for help.

Accessibility: Because professors must balance their personal and professional life, they are unable to reply to emails until the early morning hours when an instructor is not available. However, students can use chat GPT at any time for information**.**

Limitations of ChatGPT Use in Teacher Education

Insufficient analytical thinking the ability to think critically is one of the most crucial abilities students may acquire. If the solutions are always available, they won't need to use independent thought.

Technology reliance as has already been observed, students (and some teachers) find it difficult to put down their phones. Humans are becoming more and more dependent on technology. Because the search feature is so basic, it's possible to get into the habit of using ChatGPT more as a crutch than a tool.

Conclusion

Only through responsible use will we be able to guarantee that Chat GPT remains a beneficial tool. Education could be transformed by artificial intelligence, like ChatGPT. The market has not yet decided if it will be better or worse. In spite of the fact that it can be a helpful tool for teachers and students, it can also make plagiarism easy and cause an unhealthy dependence on technology. Hopefully, when educators and students gain more knowledge about ChatGPT, the advantages outweigh the drawbacks, and AI will progressively help to enhance education.

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A STUDY OF DEVELOPMENT OF INTEREST IN SCIENCE AMONG MIDDLE SCHOOL STAGE STUDENTS

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Abstract

The present research was an attempt of studying development of interest in science among middle school stage students. Researchers have conducted this study with the help of Experimental method. Sampling of the study was done by using purposive sampling method. Study was carried out on 24 students of New English School, Kundai. The collected data was analyzed by using descriptive as well as inferential statistics such as mean, standard deviation, t-test. Researchers found the applied use of various activities like Group study, Demonstration, videos, Experiments and Role play while teaching science helped students to inculcate their interest in science.

Key words- Study, Development, Interest, Middle School Stage Students

Introduction

The importance of engaging students in their learning cannot be denied. If a student does not want to learn, they will not learn much. It should therefore be a key aim of educational research to investigate how the learning environment can be optimized to support student engagement to allow students to make cognitive and appropriate affective gains. These investigations should cover not only the importance of the physical environment but also the less tangible aspects of the classroom such as the teaching and learning activities and the relationships formed between teachers and students.

Science education gives students the opportunity to gain a better knowledge of how and why things function. Science can teach children about the world that surrounds them. Everything from human anatomy to techniques of transportation, science can reveal the mechanisms and the reasons for complicated systems. The information gained from science can be used to grasp new ideas, make educated choices and pursue the pursuit of a new passion.

It is very important to know the student interest in learning, and then only student will focus what teacher is teaching thereby developing their interest in particular topic. Researchers wanted to study the effect of these collaborative strategies on inculcating interest of students in Science subject. Hence, researchers have undertaken this topic for the study.

Review of Related Literature

Front. Psychol (2021) His current study explored the associations between non–cognitive science-related variables, i.e., science interest, utility, self-efficacy, science identity, and science achievement in a serial mediation model. The study also further explored the potential heterogeneity in the model parameters using one of the data-mining techniques, which is the structural equation model (SEM) Tree. Data on 14,815 high school students were obtained from a large-scale database High School Longitudinal Study of 2009. The results highlighted science interest and science utility positively influencing science achievement through a sequential pathway of mediators, including science self-efficacy and science identity.

Bryan C. Todd (2020)in his paper "Factors Influencing Student Interest in Science at School" observed that in the perfect classroom, students would be engaged in every topic their teacher covered, regardless of how connected they felt to the subject. In reality, we know people have numerous interest and care more strongly about somethings than others. His research study has shown him understanding these interests and demonstrating how science can directly impact students' lives and future will increase their inquisitiveness and thereby engagement with science curriculum. Students enjoy learning science more when they have an encouraging environment where they know their teacher has their best interest at heart and when they have multiple activities to engage with curriculum, such as hands-on engineering projects and labs.

Helen M.D.(2017) in his paper "Understanding and Developing Student Interest in Science" The aim of his research was to investigate what can be done to develop student interest in GCSE science lessons. Mixed methods were used to develop an understanding, and allow comparison, of the views of groups of students and teachers. Students were asked what they believed to be the purpose of learning science between the ages of 14-16, how interested they were, and what they believed could increase their interest, in science lessons. A questionnaire was completed by 475 students and 11 teachers from four state-maintained schools, in England, in the summer before the students started their GCSE studies.

HarackiewizJ.,Smith J.,Priniski S. (2016) they said that interest is a powerful motivational process that energizes learning, guides academic and career trajectories, and is essential to academic success. Interest is both a psychological state of attention and affect toward a particular object or topic, and an enduring predisposition to reengage over time. Integrating these two definitions, the four-phase model of interest development guides interventions that promote interest and capitalize on existing interests. Four interest-enhancing interventions seem useful: attention-getting settings, contexts evoking prior individual interest, problem-based learning, and enhancing utility value. Promoting interest can contribute to a more engaged, motivated, learning experience for students.

Statement of Problem

A Study of development of interest in science among Middle School Stage Students

Definitions of Technical Terms Study: careful examination or analysis

Development: systematic use of knowledge and understanding gained from research directed toward the production of useful method.

Interest: the feeling of wanting to know or learn about something

Objective of the Study

1. To find the current status of the student interest in science.
2. To determine the difficulties faced by student for development of interest of students in science.
3. To develop strategies for development of interest of students in science.
4. To study the effectiveness of strategies for development of interest of students in science.
5. To give appropriate suggestion based on findings.

Assumptions of the Study

Majority of the students are not interested in science subject.

1. Students cannot find relation of science with their daily life.
2. Student will understand science learning by doing.
3. Student will develop interest in science by this program

Hypotheses of the Study

Research Hypothesis H_1: There is significance difference between the mean performances of pretest and posttest of development of interest in science.

Null Hypothesis H_0: There is no significance difference between the mean performance of pretest and posttest of development of interest in science.

Procedure of the Study Methodology of Study

The particular study is experimental in nature that is why researcher adopted experimental method of study. The research was carried out on 24 students of standard VI of New English School, Kundai. The experiment conducted included preparation of pre-test and post-test. The pre-test was conducted initially to find out students' interest in science, then activities were conducted to develop interest of student in science. At the end post-test was conducted.

Experimental Design of the Study

1. **Pretest: -**A preliminary test administered to determine a student's baseline knowledge or preparedness for educational experience or course of study.
2. **Posttest: -** A test given to students after completion of an instructional programme or segment and often used in conjunction with a pretest to measure their achievements and the effectiveness of the programme.

Sampling of the Study

The researcher selected 24 students of class VI from New English School, kundai Goa by using purposing sampling method.

Tools for Data Collection

1. Observation
2. Questionnaire
3. Test

Statistical Tool for Data Analysis

1. Mean and standard deviation
2. Graphs
3. t-test

Data Analysis

Objective wise data analysis

Objective1: -To find the current status of the student interest in science.

Pre-test

Pre-test was conducted in which 24 students were tested. Each student answered the test which was based on general science. By this their interest in science was assessed.

Objective 2: -To determine the difficulties faced by student for development of interest of students in science.

Questionnaire helped researcher to know the difficult of students to develop interest in science.

Table1: Questionnaire response

Statement	Always	frequently	sometimes	never
I enjoy learning science.	6	7	7	5
I understand science while teaching.	5	8	7	4
Activities are conducted during science class.	2	2	4	16
Experiments are conducted during science class.	18	5	1	0
Videos are shown during science class.	1	1	3	19

Objective 3: -To develop collaborative strategies for development of interest of students in science.

To develop interest of students in science researcher developed some strategies by using three stage model i.e. Defining, Developing and evaluating stage. Researcher involved topics of science like Components of food, Separation Techniques, Fun with magnets, Electricity.

1. Group study

Learning is a different experience for every student because every student will have their own perspective on the subject, which is excellent for group learning. It brings different angles and opinions to the table and bolsters creative and analytical thinking. In some instances, students can better explain the material being studied to their fellow students, which can make a study group invaluable if you are finding a subject hard to grasp. And those who have grasped the topic are reviewing and refining their own understanding by explaining it to fellow students.

Researcher made 4 groups of students and gave one common topic for student to learn together like lesson story of water this activity was conducted for 3 days

2. Demonstration

Demonstrating is a traditional method in teaching science that can raise interest and encourage pupils to think about a topic. While demonstrating, the teacher can focus the pupils' attention on the relevant facts and introduce scientific principles and concepts.

Researcher used demonstration method while teaching electricity topic. Here teacher demonstrated the electric circuit related concept.

3. Videos

Video content makes children connect faster. Effective educational videos significantly improve the memory process by facilitating thinking in the manner of asking questions. Videos increase student engagement, which in turn helps boost achievement.

Student watched videos on separation Techniques.

4. Experiment

Experiments serve as a good starting point for problem discussion, enhance instructor- student interactions, and help inspire students to understand theoretical concepts through discussions about the experiments. If the result of an experiment is surprising yet convincing, students are in position to build ownership of the new idea and use it to scaffold learning.

Here students did experiments of magnet, separation techniques etc.

5. Role Play

Role plays can increase student interest in the subject matter being addressed in the classroom.It can also improve student engagement levels. Role playing exercises encourage students to think more critically about complex and controversial subjects and to see situations from a different perspective. role plays can motivate students in a fun and engaging way.

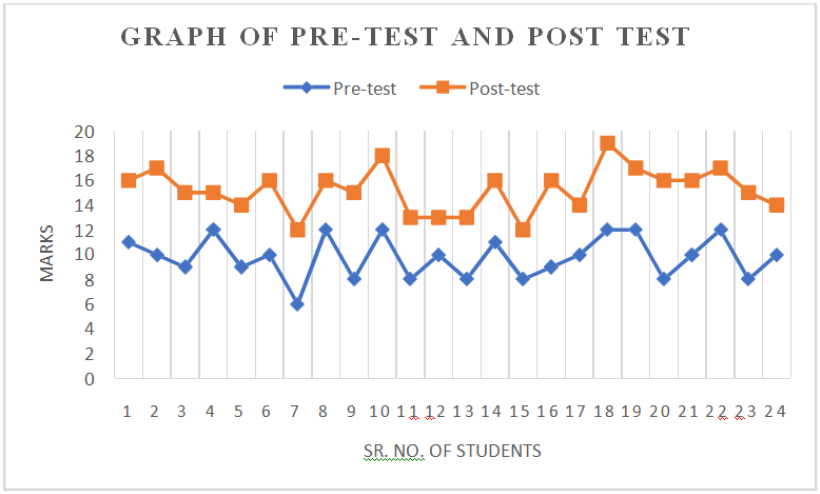
In this student were asked to take one of the roles of components of food so that students will remember its functions.

Objective 4 : To study the effectiveness of strategies for development of interest of students in science.

Post-Test

Pre-test was conducted with same 24 students. Each student was again made to answered the test which was based on general science. Many students score good marks in post- test compare to pre-test. This shows that student has develop interest in science by conducting various activities while teaching.

- **Graph of Pre-test and Post-test**



- **Table 3: Descriptive Statistics of Pre-test and Post-test**

Pre-test	
Mean	9.791666667
Standard Error	0.350874511
Median	10
Mode	10
Standard Deviation	1.718927033
Sample Variance	2.954710145
Kurtosis	-0.740180139
Skewness	-0.208338265
Range	6
Minimum	6
Maximum	12
Sum	235
Count	24

Post-test	
Mean	15.20833333
Standard Error	0.370952391
Median	15.5
Mode	16
Standard Deviation	1.817288153
Sample Variance	3.302536232
Kurtosis	-0.376696324
Skewness	-0.052878432
Range	7
Minimum	12
Maximum	19
Sum	365
Count	24

- **Table 4: t-test**

t-Test: Paired Two Sample for Means		
	Post-test	*Pre-test*
Mean	15.20833333	9.791666667
Variance	3.302536232	2.954710145
Observations	24	24
Pearson Correlation	0.710420972	
Hypothesized Mean Difference	1	
Df	23	
t Stat	16.04364068	
P(T<=t) one-tail	2.77219E-14	
t Critical one-tail	1.713871528	
P(T<=t) two-tail	5.54439E-14	
t Critical two-tail	2.06865761	

As we test the significance difference between the mean of Pre-test and Post-test of development of interest in science, t-test mean value of pre-test is 9.79166667 and the t-test mean value of Post test is 15.2083333. calculated t value (16.04364) is greater than table T value (2.77219). here we reject null hypothesis and accept the alternative hypothesis which says that there is significance difference between the mean score of pre-test and post-test for development of interest in science. Thus the programme has proven to be effective to develop interest in science.

Objective 5 : To give appropriate suggestion based on findings.

- To make subject interesting allow student to do group studies.
- There should be demonstration of difficult concept.
- Show Videos to give real life experience of concept to students.
- Conduct experience to develop curiosity about science.
- Give students role play for better understanding of concept

Findings of the Study

1. Many students develop their interest in science.
2. There is significant difference between pre-test and post-test
3. Use of activities like Group study, Demonstration, videos, Experiments and Role play is necessary to develop interest in science

Conclusion and Discussion

The interest holds much power as it helps them in connecting to their desired subjects. When students are connected with their subject of interest, engagement becomes effective, and it deepens as we see them investing more time and effort in learning.

It's not always obvious that science has an impact on our everyday lives, but the truth is that science impacts the many decisions we make every day. Therefore, it's important to develop interest of students in science. For that study says that teacher should teach science by conducting various activities which will develop curiosity in the minds of student and they will try to find answer of their question. Hence students will become interested in science.

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A STUDY OF THE DEVELOPMENT OF INTERVENTION PROGRAMME FOR MINIMIZING GRAMMATICAL ERRORS AMONG MIDDLE SCHOOL STUDENTS

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ABSTRACT

This paper present and discuss on The development of an intervention program to minimize grammatical errors among Middle school students is crucial to improve their written communication skills by improving their Grammar punctuation. This study focuses on designing and implementing an effective intervention program that targets the grammatical errors commonly made by students. The research involves a comprehensive analysis of the common grammatical errors made by students. Based on this analysis, an intervention program is developed, which includes a range of instructional strategies, including explicit grammar instruction, practice exercises, Videos, gifs and feedback. The effectiveness of the program is assessed through pre- and post- intervention tests that evaluate the students' grammar punctuation knowledge and ability to use it correctly. The results of the study suggest that the intervention program is effective in improving students' grammar skills and reducing their errors.

Keywords :- Grammar, Intervention programme, Grammatical Errors etc.

INTRODUCTION

"Grammar is the logic of speech, even as logic is the grammar of reason."

According to Richard C. Trench, the use of grammar is very important in depicting the value of the language and the judgment towards the ideas. The use of grammar also reflects the author's writing skill and it will give the reader an indication of the content in the written production will be like.

Grammar is the study of words, their structure, and function. It is essential to learn grammar because it helps learners understand the English language better. Grammar also enables them to understand how sentences are formed. Grammar is also used in everyday life when discussing something that happened or will happen in the future.

Children with language impairments often have difficulties in many areas of language, but grammar is particularly affected. These children often produce short, simple sentences containing grammatical errors and have difficulties understanding longer and more complex sentences.

The intervention program will be designed based on a needs assessment, which will

identify the most common grammatical errors made by middle school students. The program will have specific and measurable objectives that are achievable, relevant, and time-bound. It will utilize age-appropriate materials and engaging activities to reinforce learning and provide feedback to students. Peer editing will also be employed to help students learn from their mistakes.

I conduct action research on the issue of grammatical errors of the students of the Holy Spirit institution, Margao.I conduct action research on the issue of grammatical errors of the students of the Holy Spirit Institution, high School. I choose the topic because during my teaching I noticed that the students are continuously making grammatical mistakes in their writing. Moreover, there were complaints from teachers about the students' lower performance in English. Thus I decided to do action research on it to improve it.

The effectiveness of the intervention program will be evaluated through pre- and post-assessments, and adjustments will be made as needed. The ultimate goal of this study is to develop an effective intervention program that can enhance middle school students' grammar skills, improve their writing and communication abilities, and support their academic success. By reducing grammatical errors, we hope to help students become confident and effective communicators, both in the classroom and in their future endeavours.

Overall, the goal of this study is to develop an effective and engaging intervention program that can improve middle school students' grammar skills, enhance their writing and communication abilities, and support their academic success.

A. STATEMENT OF THE PROBLEM

The purpose of the study was to the development of intervention programme for minimizing grammatical errors among middle school students.

B. DEFINATION OF TECHNICAL TERMS

- Intervention program:- is an intervention curriculum that is designed to achieve an end result.
- Grammar:- rules of a language governing the sounds, words, sentences, and other elements, as well as their combination and interpretation.
- A grammatical error:- is an instance of faulty or controversial language use. It makes it hard for the reader to understand what you're saying.

C. OBJECTIVES OF THE STUDY :

- To Find Out The Current Status Of Teaching English Grammar In School.
- To Determine The difficulties Faced By Students In Learning English Grammar Punctuation.
- To Develop Different Strategies Of Teaching English Grammar Punctuation.
- To Study The Effectiveness Of Innovative Method Of Teaching English Grammar Punctuation.

- To Give appropriate suggestions based on the findings.

D. VARIABLES AFTER STUDY

A. Dependent variable - shouldn't performance studying in standard 6th

B. independent variable - method of teaching example traditional method example modern method. An innovative method.

E. ASSUMPTION OF STUDY

- The assumption of this study is to recommend best practices for teaching grammar in middle school settings based on the findings of the study.
- The assumption implies that the study focus on identifying common grammatical errors made by middle school students and may develop effective strategies for correcting and preventing these errors.
- The assumption could be that the study may not have adequately accounted for individual differences in learning styles, which could limit the program's effectiveness for certain groups of students.
- The assumption could be that the program may only benefit students with a certain level of proficiency.
- The assumption could be that innovative method will be effective to them.

F. HYPOTHESES OF THE STUDY

H¹ (Research Hypothesis) – There is a significant difference in between the mean performances of pre- test and post-test

H (null Hypothesis) There is no significant difference in between the man performance of pre-test and post-test

G. SCOPE OF THE STUDY

The research has been carried out in holy Spirit Institution, Margao,Goa for the students of standard VI on the topic "A Study of the development of intervention programme for minimizing grammatical errors among middle school students".

H. LIMITATIONS OF THE STUDY

The limitations of the study are as follows :-

- Though it was decided to conduct programme for 4 months researcher could manage only 2 Months for implementing the programme Along with this, researcher also faced some Difficulties became of the Unavailability of infrastructure for the smooth conduct of study.
- Teacher will select 6th standard for the research.

REVIEW OF RELATED RESEARCHES

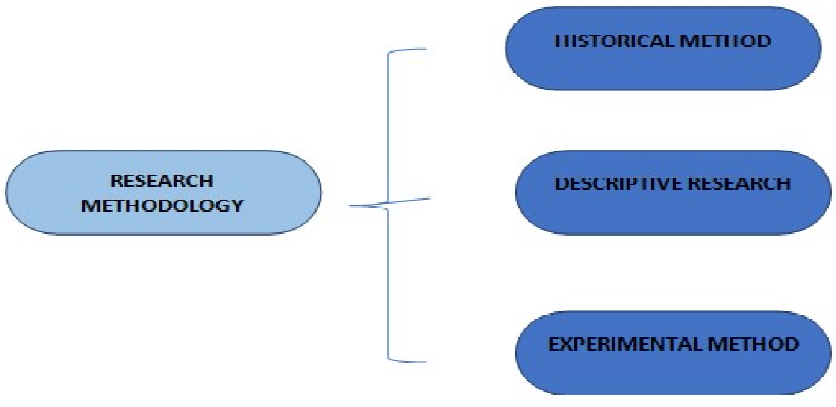
- **Moh. Hussain Akbary(2017)** Conducted Study On Analysis of Grammatical Errors in English Writing Made By Senior And junior Students In English Department, Languages And

Literature Faculty Of balkh University. This Study Indicates That Considering The Importance Of Grammatical Knowledge In The Writing Process, This Research Aims At Describing The Grammatical Errors That Committed By Junior And Senior Students Of English Department At Balkh University. The Research study is classified into qualitative and quantitative study. The data were collected from thirty English texts written by students which contained six familiar topics.

- **Albert AgbesiWornyo(2016)** conducted study on Attending to the Grammatical Errors of Students using Constructive Teaching and Learning Activities. This study indicates to assist learners to improve upon their performance in grammar and usage. This research aims to explore how constructive teaching and learning activities which are learner-centred activities can help learners to overcome their subject verb agreement errors and to improve on their English grammar and usage. The students were then taken through the intervention designed by the instructor. Constructivists' activities were used to guide the students to correct errors in their sentences. After the intervention, the students were interviewed about their impressions. There was a post-test at the end of the intervention.
- **Susan Enable** (2014) conducted study on the Effectiveness of intervention for grammar in school-aged children with primary language impairments. This study indicates the effectiveness of therapy for grammar for school-aged children with language impairments. It focuses on specific areas of grammar, both expressive and receptive targets and then studies aiming to improve language more generally, several of which focus more on the effectiveness of different methods of delivery.

RESEARCHPROCEDURE OF THE STUDY

A. RESEARCHMETHODOLOGY



The following are the different method using which action research can be conducted

a. **HISTORICAL METHOD**: A technique of presenting information (as in teaching or Criticism) in which a topic is considered in terms of its earliest phases and followed in an historical course through its subsequent evolution and development.

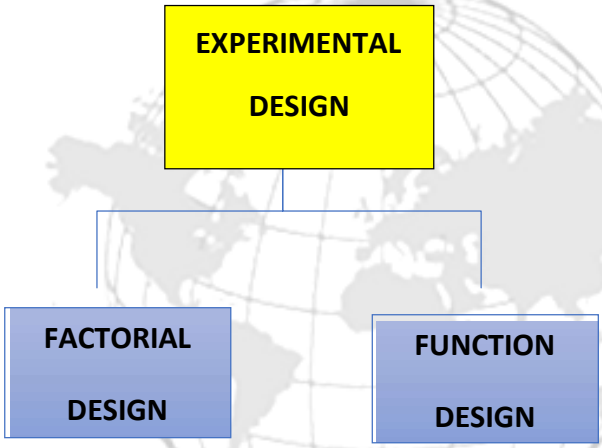
b. **DESCRIPTIVE RESEARCH**: It refers to the type of research question, design, and data

analysis That will be applied to a given topic.

c. **EXPERIMENTAL METHOD:** Is a systematic and scientific approach to research in which the Researcher manipulates one or more variables, and controls and measures any change In other variables.

The researcher haveused experimental method to conduct my actions research on topic "A Study of the development of intervention programme for minimizing grammatical errors among middle school students".

B. EXPERIMENTAL DESIGN



The researcher had used experimental method to check the effectiveness of modern method of Teaching on students learning and academic performance over the traditional method of Teaching. It involved sampling of pre-test and post-test design.

There are various types of experimental designs. The selection of particular design depends upon The factors like nature and purpose of experiments, the types of variables to be manipulated.

The researcher has adopted pre-test and post -test single group design.

- PRE-TEST :A pre-test also commonly known as Preliminary test, is a test administered to Determine the students baseline knowledge prior to the experience.
- POST-TEST: It is a test given to the students after the completion of an instructional programme to Measure the effectiveness of the programme.
- single group design is a design in which a group of subjects are administered a treatment and then measured (or observed).Usually, with this design, an interact group of subjects is given the treatment and then measured or observed. No attempt is made to randomly assign subjects to the groups, nor does the design provide for any additional groups as comparisons.

EXPERIMENTALDESIGN

The researcher add use experimental method to check the effectiveness of modern method teaching on student learning and academic performance over the traditional method of teaching. It involves sampling of pre test and post test design.

PRE TEST

The students were delivered the class on a particular concept in traditional method of teaching and the pre test score was taken from the achievement test of the student.

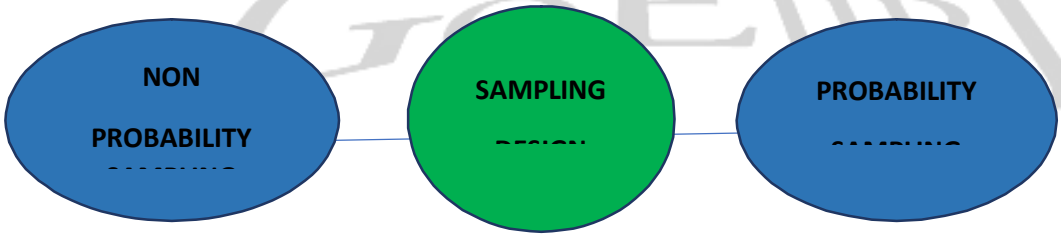
POST TEST

The students were delivered class on The same concept as thought in the lecture method but by adapting the modern method of teaching. the achievement test was used as a tool in collecting the data

To undertake this project, a plan was formulated.

- Step 1:Practice the traditional method of teaching.
- Step 2:Conduct a test on the above moment.
- Step 3:Teach the same content using 7E model.
- Steps 4:Conduct a test on the above.

C. SAMPLING PROCEDURE



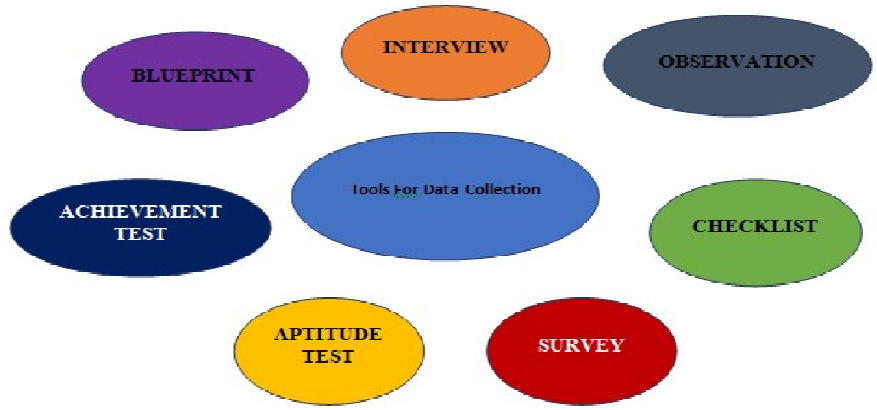
TYPES OF SAMPLING

Forty students were selected from standard VI from holy Spirit Institution, Margao, purposively by using non probability sampling method. The teaching methods used were traditional method and innovative method.

A. Probability Sampling

B. Non probability Sampling

D. TOOLS FOR DATA COLLECTION



Data collection tools refer to the devices/instruments used to collect data, such as a paper questionnaire or computer-assisted interviewing system. Different tools that can be used for data collection are Case Studies, Checklists, Interviews, Observation sometimes, and Surveys or Questionnaires.

The tool that was used in this study was achievement test.

a. Pre-test for assessing students knowledge gained by traditional method of teaching.

b. Post-test for assessing student's knowledge gained by constructivist method of teaching.

- **TOOLS USED FOR DATA COLLECTION:**

The tools used for data collection was the punctuation questionnaire scale prepared by researcher. A pre test and post test was conducted using the test. Intervention was also done.

E. STATISTICAL TOOLS FOR DATA ANALYSIS

FOR QUANTITATIVE DATA :

MEAN: it is a simple mathematical average of a set of numbers.

STANDARD DEVIATION: it is a measure of dispersion of a set of data from its mean.

T-TEST: it is an analysis of two population means through the use of statistical examination. It can be used to determine if two sets of data are significantly different from each other.

The statistical tools used by the researcher were t-test (paired two samples for mean) and Pearson's coefficient of correlation. Besides these statistical tools, mean and standard Deviation were used.

OBJECTIVESWISE DATA ANALYSIS

OBJECTIVE 1:-TO FIND OUT THE CURRENT STATUS OF TEACHING ENGLISH GRAMMAR IN SCHOOL.

Pre-test was conducted on grammar punctuation to assess student's present status of performance on English grammarpunctuation. The test of 10 marks was carried out. Here were 10

closed ended questions. It was found out that the students did not achieve a good score in the test.

PARTICULARS	N	MEAN	STANDARD DEVIATION
PRE-TEST	40	4.07	0.23

Table 4.1:- Descriptivestatistics of pre test

According to data of Table 4.1, it can be seen that 40 student participated pre test. The mean of pre test is 4.07. the standard deviation of pre test is 0.23.

OBJECTIVE 02:TO DETERMINETHE DIFFICULTIES FACED BY STUDENTS IN LEARNING ENGLISH GRAMMAR PUNCTUATION.

To assess student's performance a Pre-test was conducted on grammar punctuation on English grammarpunctuation. The test of 10 marks was carried out. It was found out that the students did not achieve a good score in the test, from this we come to know that the students are poor in English grammar punctuation, and the students was facing problem in framing sentences and oral communication.

OBJECTIVE 03 : TO DEVELOP DIFFERENT STRATEGIES OF TEACHING ENGLISH GRAMMARPUNCTUATION.

It was found out the researcher conducted a number of activities in the intervention program. The activities were planned in such a way that it would improve and boost the student's English grammar punctuation to solve problem in framing sentences and oral communication.

It was found that students learnt better when use modern and innovative strategy of teaching English grammar then by just using traditional method and chalkboard to teach English grammar.As a part of innovative constructive approach researcher develop a video with graphs on topic punctuation in English grammar.

OBJECTIVE 04:TO STUDY THE EFFECTIVENESS OF INNOVATIVE METHOD OF TEACHING ENGLISH GRAMMARPUNCTUATION.

Here researcher had tested the null hypothesis.

Mean, Standard, rand t score of pre -test and post- test

PARTICULARS	N	MEAN	STANDARD DEVIATION
POST-TEST	40	8.7	0.14

Table 4.2:-Descriptivestatistics of post test

According to data of Table 4.2, it can be seen that 40 student participated post test. The mean of post test is 8.7. the standard deviation of post test is 0.14.

TESTING OF NULL HYPOTHESES:

Particular	N	DF	MEAN	SD	R	LOS	Table -T	CALCULATE - T	RESULT
PRE-TEST	40	39	4.07	1.50	.13	91	13.81	1.68	Rejected
POST-TEST	40	39	8.7	0.91		0.05			Rejected

TABLE 4.3: Testing of NullHypothesis

In Table 03 it shows 't' test of pre test and post test. The df(N-1) is **39.** the level of significance is considered to be 0.05 when the Pearsons coefficient of correlation is **0.13**. therefore it shows that variable i.e score of pre - test and post- test is having high positive correlation. It is interpreted that since calculated 't' value is **13.81** is greater than table 'T'value is **1.68**(t>T) at level of significance of**0.05.**Therefore We can see that null hypothesisH_o is rejected at level of significance of**0.05** and the research hypothesis is accepted.

OBJECTIVE 05: TO GIVEAPPROPRIATESUGGESTIONS.

Belt on the result of pre test and post test it can be suggested that

- The teacher should use Modern and innovative methods while teaching English Grammar.
- Teachers can use more innovative and modern activities like play chart, videos etc.

CONCLUSIONAND DISCUSSION

English is a universal language that helps people hailing from different ethnicities to connect and continue conversations. The main aspects of spoken and written English are its grammar. Only when the grammar is proper, do the sentences make sense. Thus, it is important to realize the importance of grammar in language.

Grammar is the structural foundation of our ability to express ourselves. The more we are aware of how it works, the more we can monitor the meaning and effectiveness of the way we and others use language. It can help foster precision, detect ambiguity, and exploit the richness of expression available in English.

So, at last we can say that grammar is a base of a language. Teachers should always try to

motivate students to learn grammar. If the students don't have a natural interest in something, they need to see why learning about it is necessary.

For the pre-test the students were nervous and was not confident while answering. The performance of the students in the pre-test was poor. After the intervention program on English grammar punctuation, the students were more confident in answering the post-test. The performance of the students in the post-test was higher than the pre-test. There were lot of difficulties while carrying out the research project. The result of the present studies were having a resemblance with the researches done by Moh. Hussain Akbary(2017), Albert Agbesi Wornyo (2016), Susan Enable (2014).

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A STUDY OF THE EFFECTIVENESS OF NOTE MAKING ON STUDENT'S ACHIEVEMENT

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Abstract

This study is an attempt to identify the effectiveness of note making on student's achievement of the students of XI C Commerce Class of Vidya Vikas Madal's Ramacrisna Madeva Salgaocar Higher Secondary School, Margao – Goa. This study is experimental in nature. The study is Pre – Test, Post – Test or a single group design. To undertake the present study two tests were conducted namely Pre – Test and Post – Test. At first 7 lectures were conducted in the time frame of 15 days without allowing the students to take any notes and the results were recorded. After Pre -Test 10 lectures in the time frame of 15 days were conducted wherein the students were free to take notes during the lecture, this was followed by Post – Test and the results obtained were recorded. The statistical tools used by the researcher were t – Test: Paired Two Samples For Means and Descriptive Statistics using Microsoft Excel. The study revealed that at 0.05 level of significance, calculated t value (1.106) was greater than table T value (0.052). Therefore, the null hypothesis was rejected and the alternate hypothesis was accepted, which depicted that there was significant difference in the influence of note making on the students' academic achievements. Thus the intervention programme has proven to be effective to improve the effectiveness of note making on student's achievement.

Key words: Effectiveness of note making, Student's achievement

INTRODUCTION

Note-taking provides several benefits related to understanding and remembering information. If students take notes in class, they tend to be more engaged with the material and avoid that feeling of drowsiness that can sometimes overpower students, especially during long lectures. Students also simultaneously improve their organizational skills. The process of listening and choosing the most crucial information, highlighting key ideas, and identifying important structures, become handy in the future. Last but not least, taking notes better prepare students for the long study sessions once finals approach. Having notes make the process of reviewing and studying much easier.

REVIEW OF LITERATURE

Salame I. et. al. (2020) in their study on Students' Views on Strategic Note-taking and its Impact on Performance, Achievement, and Learning showed that note-taking improves students' recall of material, increases students' understanding of the content, assists in preparation for examinations, and improves their overall grades.

Biria R. et. al. (2010) made an attempt to investigate the effect of note-taking strategy instruction individually and its interaction with gender on the students' academic achievement. The results revealed that note-taking strategy instruction, but not its interaction with gender, had significant effects on the student achievement.

Lichty E. (2022) in their study on The Effect of Note Taking on the Recall of Information, emphasize the importance of teaching students note taking skills that promote encoding.

Piolat A. (2005) in their study on Note Taking and Learning: A Summary of Research found that learning to take notes involves the development of a range of skills that take several years to master. The aim of teaching note taking would be to help students progress not more quickly but in a way that their skills in using this indispensable tool are improved.

Muraina M. B. (2014) conducted a study on Impact Of Note Taking And Study Habit On Academic Performance Among Selected Secondary School Students In Ibadan, Oyo State, Nigeria found that note taking is beneficial for at least two reasons. First, note taking aids lecture learning by activating attentional mechanisms and engaging the learner's cognitive processes of coding, integrating, synthesizing, and transforming aurally received input into a personally meaningful form. Second, note taking is seen as beneficial because the notes taken serve as an external repository of information that permits later revision and review to stimulate recall of the information heard. Students who use proper reading skills containing note taking and studying that notes, can preserve knowledge for longer time.

STATEMENT OF RESEARCH PROBLEM

Students have various styles of learning. Although most of the students take notes from the lecture, review and study these notes before exam. Their ability to take good notes must have some impact on their academic achievement. Therefore, this study investigates effectiveness of note making on student's achievement.

OBJECTIVES

i. To find out student's academic performance without note making
ii. To find out student's academic performance after note making
iii. To study the effectiveness of note making on students' achievement

RESEARCH METHODOLOGY

To undertake the present study two tests were conducted namely Pre – Test and Post – Test. At first 7 lectures were conducted in the time frame of 15 days without allowing the students to take any notes and the results were recorded. After Pre -Test 10 lectures in the time frame of 15 days were conducted wherein the students were free to take notes during the lecture, this was followed by Post – Test and the results obtained were recorded.

Both Pre -Test and Post – Test had similar paper pattern out of 20 marks, with the mix of both objective and descriptive questions. Both the tests were conducted in physical mode.

SAMPLE OF STUDY

In the present study sample comprised of 38 students of XI C Commerce Class of VidyaVikas Mandal's RamacrisnaMadevaSalgaocar Higher Secondary School, Margao – Goa. The sample was convenient and purposive in nature.

DATA COLLECTION:

- ***Primary data:*** The researcher has collected primary data for analysing the effectiveness of note making on student's achievement of students of XI C Commerce Class of VidyaVikas Mandal's RamacrisnaMadevaSalgaocar Higher Secondary School, Margao – Goa. Experimental method was used for collecting the primary data. The respondents consist of the 38 students studying in XI C Commerce Class.

PERIOD OF STUDY

A study of the effectiveness of note making on student's achievement of students of XI C Commerce Class of VidyaVikas Mandal's RamacrisnaMadevaSalgaocar Higher Secondary School, Margao – Goa was held from 09/09/2022 to 04/10/2022.

DATA ANALYSIS AND INTERPRETATION

The collected data is processed in computer under expert supervision. The conclusion and suggestion is drawn based on output given by Microsoft Excel. For the purpose of analysis, I have used t – Test: Paired Two Samples For Means, Descriptive Statistics and charts.

DATA ANALYSIS

i. To find out student's academic performance without note making

Table 1: Descriptive Statistics of Pre – Test Results

Pre-Test	
Mean	11.97368421
Median	12

Mode	15
Standard Deviation	3.140725016
Range	13
Minimum	4
Maximum	17
Sum	455
Count	38

(Source: Author's compilation derived from Primary data)

The above Table 1 shows Descriptive Statistics of Pre – Test results answered by 38 students. From the above table it can be inferred that on an average students have scored 11.97 marks out of 20 marks. The middle most marks from the collected data is 12 marks. Most of the students have scored 15 out of 20 marks in the Test. The distance between marks of each student in the entire dataset is different from the mean of the dataset by a value of 3.14. The difference between the highest and the lowest Score is of 13 marks. The lowest scored in the Pre – Test is 4 out of 20 marks whereas the highest score is 17 marks. The sum total of marks obtained by all the 38 students comes to 455 out of 760 marks.

ii.To find out student's academic performance after note making

Table 2: Descriptive Statistics of Post – Test Results

Post-Test	
Mean	12.26315789
Median	12
Mode	12
Standard Deviation	2.286082575
Range	9
Minimum	9
Maximum	18
Sum	466
Count	38

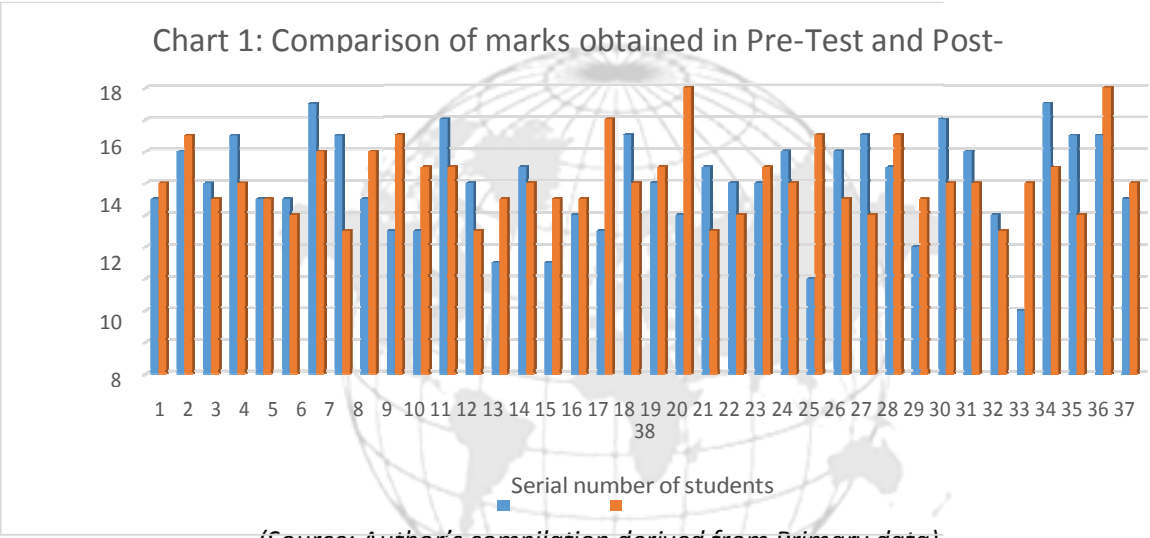
(Source: Author's compilation derived from Primary data)

The above table 2 shows Descri tive Statistics of Post – Test results answered by 38 students.

From the above table it can be inferred that on an average students have score 12.26 marks

out of 20 marks. The middle most marks from the collected data is 12 marks. Most of the students have scored 12 out of 20 marks in the Test. The distance between marks of each student in the entire dataset is different from the mean of the dataset by a valu of 2.29. The difference between the highest Pre – Test is 9 out of 20 marks and the lowest Score is of 9 marks. The lowest scored in the hereas the highest score is 18 marks. The sum total of marks obtained by all the 38 students comes to 466 out of 760 marks.

iii. To study the effectiveness of note making on students' achievement



(Source: Author's compilation derived from Primary data)

The above chart 1 depicts the graphical representation of the marks obtained by the students in Pre-Test and Post-Test. The graph reflects that most of the students have performed comparatively better in Post – Test than in Pre – Test. It is seen that lowest score among the two test is in Pre – Test with 4 marks whereas the highest score among the two tests is found in Post – Test with 18 marks.

Table 3: Results of t-Test: Paired Two Sample for Means

Particulars	n	df	Mean	Standard Deviation	r	Level of significance	T-Value	t-Stat
Pre-Test	38	37	11.973	3.140	-	0.05	-	-
Post-Test	38	37	12.263	2.286	-0.041	0.05	0.052	1.106

(Source: Author's compilation derived from Primary data)

The above table depicts the results of t-Test: Paired Two Sample for Means performed on the scores obtained by the students in Pre – Test and Post – Test. 38 students from the class had answered both the Pre -Test as well as the Post – Test. On an average students have performed

slightly better in Post - Test i.e. when the students were allowed to take notes during the lecture with the average score of 12.26 marks in comparison with the average score of Pre – Test i.e. 11.97 marks. The study reveals small correlation of -0.041 between Pre – Test and Post -Test scores. On 0.05 level of significance, calculated t value (1.106) is greater than table T value (0.052). Therefore, we reject the null hypothesis and accept the alternate hypothesis, which says that there is significant difference in the influence of note making on the students' academic achievements. Thus the intervention programme has proven to be effective to improve the effectiveness of note making on student's achievement.

FINDINGS AND CONCLUSION

The main objective of the study was to analyze the effectiveness of note making on student's achievement. A study sample comprised of 38 students of XI C Commerce Class of VidyaVikas Mandal's RamacrisnaMadevaSalgaocar Higher Secondary School, Margao – Goa. The sample was convenient and purposive in nature. Students' assessment test scores were taken from Pre - Test and Post – Test and the data was analyzed using t – Test: Paired Two Samples For Means and Descriptive Statistics using Microsoft Excel.

After analyzing the result of Pre and Post Test for studying effectiveness of note making on student's achievement, it can be concluded that there is a significant difference in the mean scores of Pre and Post Test. The study reveals small correlation of -0.041 between Pre – Test and Post -Test scores. On 0.05 level of significance, calculated t value (1.106) is greater than table T value (0.052). Therefore, we reject the null hypothesis and accept the alternate hypothesis, which says that there is significant difference in the influence of note making on the students' academic achievements.

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A PEDAGOGY CURRICULUM STRATEGY IN EDUCATION: A NECESSARY COMPONENTS IN WORKPLACE

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Abstract

The primary objective of this research paper is to understand the importance of pedagogy in the workplace, focusing on the teaching and learning processes that contribute to effective teaching strategies. The recent emphasis on enhancing student outcomes is closely tied to improving teaching quality in the workplace, as research has demonstrated that teacher quality significantly impacts student achievement, even after considering prior learning and family background. Pedagogical knowledge is a crucial, yet often overlooked, aspect of teacher quality. Pedagogy focuses on how to teach, while the curriculum dictates what to teach. Effective curriculum planning, design, and pedagogy shape the future of education. The quality of higher education largely depends on curriculum design, planning, and the teaching-learning process. Higher education institutions should have increased autonomy in developing functional curricula, with proper monitoring by accrediting agencies. A dedicated department or cell for curriculum design should exist at the ground level. Educators must possess strong subject knowledge and critical, creative, and analytical abilities. They should be trained in integrating ICT with traditional teaching, employing teaching aids, models, and smart boards. Teachers must also learn to develop standard question papers and assessment patterns for evaluating students. Pedagogical practices encompass numerous principles, practices, and procedures aimed at enhancing student learning and upgrading the education system. Over time, it is vital to adopt modern, scientific, and innovative methods in pedagogical practices. However, when implementing changes and improvements, it is essential to ensure they are favourable to students, enabling them to use them effectively and achieve academic goals. In conclusion, pedagogical methods are foundational in promoting student learning, achieving academic objectives, and enriching the overall education system.

Keywords: Higher Education, achievement, curriculum, Educators, Learning, Pedagogy, Students, **Teaching**

Introduction:

Our academic pedagogy becomes productive when it sets learners on a journey not only to develop their knowledge and skills, but also their creativity and the self-motivated mind-set that brings together attitude and aptitude required for success, personally and professionally. The national policy of Education has recognised that a human being is a positive assets and a precious

national resource that needs to be cherished, nurtured and developed with tenderness and care coupled with dynamism. The academic pedagogy for the centred approach for the all-round development of the child should cover all aspects of development- physical, mental, social, emotional aesthetic, moral and spiritual. The role of the teacher will be that of a 'facilitator or guide' who should be able to provide the right kind of learning strategies and environment to children, through active interaction to develop the basic skill of observation, collection of information and drawing of inferences and conclusions to enable them to learn on their own.

A pedagogy strategy in Education is the heart and soul of teaching. Most teachers select methods of instruction that rely heavily upon teacher centred talk and student memorisation. Teachers must identify a purpose and establish clear goals in order to select appropriate pedagogy strategies. A teacher needs to use a combination of whole group, small groups and individual work on the lesson during the class period. Following are specific suggestions for choosing and developing strategies for the lesson or unit. These suggestions provide the educator with a quick reference to analyse the lesson before and after teaching.

- Use active learning: Plan to actively involve students in the teaching learning process. Students' leaning increases when they are able to do something with the information.
- Set a purpose: Relate new information to previous learning or prior knowledge. Let students know what they are going to learn and why it is important.
- Make connections: Help students to see relationships between information and skills taught in other subjects and to important issues in students' lives. Integrate learning as much as possible.

The History of pedagogy

Pedagogy, from the Greek words for 'boy' and 'guide', refers to the art or science of teaching or the techniques used to teach students.

During an ancient period in Greece, the role of the educator was first introduced, and teaching was considered an art form. Attending school and getting education was something that only the wealthiest could afford for their kids. The role of the teacher or an educator was considered the most important one in the learning process as they gave invaluable knowledge and wisdom to the learners.

What is pedagogy?

The Oxford English Dictionary defines Pedagogy as "the art, occupation, or practice of teaching." The definition also includes the "theories or principles of education" as well as "a method of teaching based on a theory." Based on these definitions, we can summarize the concept of Pedagogy in short as the art and science of teaching.

Pedagogy refers to the way of teaching students, whether it is the theory or practice of educating. It is a relationship between the culture and techniques of learning. The main aim of pedagogy is to build on previous learning of the students and work on the development of skills and attitudes of the learners. Pedagogy enables the students to get a thorough understanding of the subject and helps them in applying those learning in their daily lives outside of the classroom.

Types of Pedagogy

Types of pedagogy are:

1. Social pedagogy:

It is aimed towards the social development, awareness, and well-being of the students. The teaching must consist of values and moral education.

2. **Critical pedagogy:**

It aims towards comprehending and deconstructing several daily life problems and issues. It encourages the student to dig deeper into things and try to understand their thoughts and beliefs on a certain topic.

3. Culturally responsive pedagogy:

It aims to address the cultural diversity among students. It helps to comprehend cultural differences among the students and increases awareness about cultural differences in school.

4. Socratic pedagogy:

It aims to encourage the students to gain more knowledge from other sources along with what is provided to them. This helps the students to find alternative solutions to the problems.

Why is it important to understand the difference between curriculum and pedagogy?

As Educators need to understand the difference in developing responses that seek to narrow the multiplicity of early childhood environments to a standardized platform for educating young children.

The curriculum is the content educators teach in traditional education, while pedagogy is how educator teaches it.

In education, pedagogy and curriculum blend as understanding how to teach and why you teach in a certain way.

In learner-cantered education, pedagogy (why we teach the way we do) takes on a new meaning because it incorporates elements missing from practices in the broader early childhood education field.

Professional standards norm a community of practice, supporting the enactment of a consistent and recognized curriculum (how we teach) based on a consistent theoretical framework across all programs.

Looking at the differences between curriculum and pedagogy may open new insights and questions about approaching teachers work with children.

What is Pedagogy in Teaching?

Pedagogy in teaching can be referred to as an educator's understanding of how the students learn. The teachers are focused on presenting the syllabus to the students in such a way that it is relevant to their needs. Pedagogy demands classroom interactions between the teacher and students which create a significant impact on the learner's mind.

Pedagogy enables teachers to understand the best suitable practices for a classroom setting. It helps them to know how different students learn and grasp information so that they can tailor their lessons to satisfy those needs. It is likely to improve the quality of teaching and the way it is received by the students.

Pedagogy plays an important role to help teachers understand the best ways to conduct a classroom. It gives them insights into how students learn differently in different topics so that they can conduct lessons to suit these needs. It aims to improve the quality of education for students.

Importance of Pedagogy in Teaching

- **Improves quality of teaching**

If a well-thought pedagogy is implemented in the classrooms, the quality of education can show a drastic improvement. This will benefit the students by helping them thoroughly understand the education material, thereby improving the learning outcomes.

- **Encourage cooperative learning environment**

The implementation of pedagogy in education encourages the students to work together towards completing a task and learn together. This increases their perceptions by understanding and taking views from the other students, thereby adapting the cooperative learning environments making them better leaders in the future.

- **liminates monotonous learning**

Pedagogy and child development work hand in hand. It helps the student to think in different ways and move beyond the traditional methods of memorization and comprehension for learning. It invokes complex processes of learning among the students such as analyzing, creative thinking, and evaluation. Further, it makes students more receptive to what the teacher is teaching.

- **Student can follow their ways of learning**

A well thought pedagogy can help the students to grasp education in various ways. It caters to the learning abilities of different students. Students can follow their preferred ways of learning and stick to them. In this way, the students develop a better understanding of the subject, which eventually improves their skills and learning outcomes.

- **Convenient learning approach for all**

Students with special needs require different ways of learning and teaching in the institutes. Implementation of a suitable pedagogical approach will help them learn better and encourage them to be a part of the mainstream learning community.

- **Improves teacher-student communication**

The teacher understands the student in a better way which helps them to focus on the student's weaknesses and guide them.

Pedagogy for Effective learning

- **Improves Teaching Quality**

It enhances student participation in learning and makes them more receptive to what is being taught.

- **Encourages different learning styles**

The main focus is given on the outcomes of courses and the students are free to learn in their styles.

- **Enables learning for students with special needs**

It encourages the students with special needs to be a part of the mainstream teaching ways and engage with other students.

- **Clarifies learning objectives**

The student studies a particular subject with a clear objective of outcomes such as gaining skills and knowledge of the subject.

Pedagogy for Learners

Student-cantered Approach

Pedagogy is a student-centred approach in which the students take responsibility for learning in their ways.

- **Continuous Assessment of Students**

Teachers evaluate the students regularly to see if they are improving and moving towards their target outcomes.

- **Encourages Teamwork**

The study methods encourage teamwork and group projects for the students to meet like-minded individuals and work with them

- **Develops Cognitive Skills**

Helps students to develop cognitive skills using evaluation, detailed analysis, comprehension, and application of the courses.

Pedagogy for learning outcomes

The Ministry of Human Resource Development (MHRD) in India has instituted an annual National Achievement Survey (NAS) in all states and Union Territories of India. These assessments are based on Learning Outcomes that were published by the National Council for Educational Research and Training (NCERT) in 2016. As a result, states are now showing a deep interest in understanding what learning outcomes mean and how they can be achieved.

Learning outcomes are critical for determining teaching methodologies, learning activities and assessment schemes for the successful transaction of the concepts in each subject. An in-depth understanding of the characteristics, benefits and challenges in transacting learning outcomes becomes crucial for teachers. We also think that an understanding of learning outcomes will help stakeholders and in particular, teacher educators organize better in-service programs for teachers and modify the existing teacher preparation programs that they are entrusted with.

Because well-written learning outcomes clearly define where you want students to be at the end of a semester, they are useful for guiding students throughout the course. Consider giving the outcomes prominent placement in your syllabus, and talk frequently about them with your students, clarifying how certain activities in class are specifically aimed at helping them reach particular outcomes. Look for opportunities to refocus students on the outcomes throughout the semester, asking them at regular intervals to reflect on their progress toward these goals. So while you may be introduced to learning outcomes as part of an assessment plan, these tools are most effective within your class when *actively used* as a way of guiding student learning.

Pedagogy for active participation

Effective teaching goes beyond student engagement to instead ensure that every student is actively learning, interacting with others, and participating. When teachers' design their lessons so that students are actively participating, students are on task, the learning is visible, and learning is relevant and fun—and who doesn't want that? Following are some suggestions for active participation in the classroom.

- Arts-integrated and sports-integrated education, telling-based pedagogy.
- Classroom transactions will shift towards competency-based learning with assessment tools aligned.
- Engaging learners with enjoyable and inspirational for students at all levels, high-quality translation (technology assisted as needed) in all local and languages.
- Learners will be encouraged to participated in the based Clubs- Science Circles, Math Circles, Music & Performance Circles, Chess Circles, Poetry Circles, Circles, Drama Circles, Debate Circles, Sports Circles, Clubs, Health & Well-being Clubs/ Yoga Clubs, programs, Olympiads

- Competitions in schools' topics and subject's knowledge and indigenous and traditional learning across- mathematics, astronomy, philosophy, yoga, architecture, medicine, agriculture, engineering, literature, sports,….
- Visit different states as part of cultural exchange programmes.
- Video documentaries on inspirational luminaries of India, ancient and modern, in the school curriculum.

Pedagogy for Competency based learning

Skills connected to Critical & Creative thinking, Problem Solving, Collaboration and Communication are core to successful living in the 21st Century. Competency is a set of skills, abilities, knowledge that helps an individual perform a given task in real life. Learning should go into the imbibing of skills that will help the individual perform tasks or take actions to lead a productive and joyful life.

Some of the Suggestive Pedagogical Strategies for Competency based learning

- **Pedagogical processes are child centric and inclusive in nature as the focus is on individual achievement.**
- **Interdisciplinary Instruction (including scholastic as well as co scholastic areas such as Arts, Story Telling, Sports, Work Education and SEWA etc.), Collaborative Learning, Cooperative Learning, Reciprocal Teaching, Discussions, Group Projects, Peer Tutoring, Blended learning with integration of ICT (Flipped Classrooms), Computational learning based on logical reasoning, decomposition, patterns, Experiential Learning, Problem Based Learning, Games, Case Studies, Simulations, Portfolios, Presentations, Projects are the main teaching-learning processes under this approach.**
- **The idea is to support student's ability to become an independent/self-reliant and lifelong learner by using a variety of interactive methods.**
- **Pedagogies also take care of individual differences of students, issues of social nature of learning and present challenges in a graded manner to make learning child-centred.**

Pedagogy for Experiential Learning

David A. Kolb's Experiential Learning Theory is a powerful foundational approach to all forms of learning, development and change. Experiential learning describes the ideal process of learning, invites you to understand yourself as a learner, and empowers you to take charge of your own learning and development.

NEP- Experiential Learning Approach to Pedagogy

- Fun, creative, collaborative, exploratory, experiences with Flexibility
- Explore, ask questions, plan investigations, reflect on the Findings, communicate in various forms.
- Engaging learners with their immediate environment, collate past experiences and existing ideas
- Ability to engage, handle conflicts with co learners, communicates effectively.

Pedagogy for holistic development of learners

What does NEP say about holistic learning? NEP states that – education must move towards less content, and more towards learning about how to think critically and solve problems, how to be creative and multidisciplinary, and how to innovate, adapt, and absorb new material in novel and changing fields.

Three strategies for holistic development of learners

- Reorienting and revamping all aspect of curriculum and pedagogy
- Identifying specific sets of skills and values across domains for integration & incorporation at each stage of learning
- Developing curriculum frameworks & transaction mechanisms ensuring skills & values are imbibed through teaching & learning

Conclusion

The NEP–2020 is a comprehensive document and it aims to restructure and revamp the Indian education system by bringing quality changes and implementing them on the grass-root level. NEP advocates the development of a hybrid system of online and offline learning to " avoid over exposure of technology of school going children". The policy aims to achieve the objective of access equity inclusivity and quality. There are many challenges for the policy maker and academicians to implement the policy on the ground level and convert the thought into action but with collective effort and resources, the vision can be achieved. In this way, the well-thought, modern-day pedagogy is a complete interrelation of the concepts and ideas, along with the ways of teaching the students. It also indicates that these practices have direct involvement with the student's achievements, results, and skills developed after following the approach.

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STUDY OF THE IMPACT OF TECHNOLOGY ENABLED STRATEGIES ON STUDENTS LEARNING

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Abstract:

The purpose of the study was to probe the effect of using technology based strategies on students learning. The researcher selected total population 25 students of S.Y.B.Ed. Mathematics methodology P.E.S's College of Education, Farmagudi, Ponda-Goa. Technology based strategies were used for 10 days consisted of one complete unit of S.Y.B.Ed.Present research study was done by Experimental method & one group Pretest & Post test design was used for collecting data. Pre test was given before using Technology based strategies & Post test was given after using technology based strategies. The gain scores were calculated after post test for all the students. The mean of Pre test & the Mean of the Post test is which is greater than pre test means it differs significantly. So with the help of data analysis researcher has rejected null hypothesis which was there is no significant difference between the scores of pre test & post test & there is no significant effect of using technology based strategies on learning of students. The conclusion of the study was that the use of technology based strategies on learning of students proved significant & effective.

KeyWords: Technology enabled, Strategies, student learning,

Introduction:

In everyday life technology has become very important in human life. Innovative teaching methods &instructional techniques in the classroom have been changing influenced by various learning theories & technological advancement. Technology has changed whole human lifestyle.

The greatest contribution of cyber technology is the development of ICT& its use in all walks of life.

Previous education system & nature of teaching & learning process is also reformed, the result of this is adaption of innovative teaching-learning strategies in classroom teaching & learning system. Use of technology methods makes teaching & learning more interesting & effective for students. It also makes teachers teaching easy & flexible.

Statement of problem:

"Study of the Impact of technology enabled Strategies on students learning"

Objectives:

1. To find out the difference between pre test & post test scores.
2. To check the effectiveness of technology based strategies on students learning.

Operational definition :

1. Impact -Degree of technology based strategies which produced desired result.
2. Technology enabled Strategies – Mobile learning, Use of Web Based Learning, Video Conferencing Method in teaching.
3. Students -The students S.Y.B.Ed. Mathematics methodology P.E.S's College of Education, Farmagudi, Ponda-Goa
4. Learning-Scores of ICT Subject after using technology based strategies.

Need & importance:

The present research undertaken because using technology in the classroom can prepare students for the digital future. These 21st century skills are essential to succeed in today's world. Jobs that may not have had digital components in the past may now have digital components. Education is not just about memorizing facts and vocabulary, solving complex problems and collaborating with other employees. Teaching technology in the classroom prepares students for the future. Today's technology allows students to learn at their own pace.

For example, almost all apps allow for individualized instruction. Students can learn according to their abilities and needs. This form of teaching is also great for teachers as it gives them time to work individually with students who may be stressed.

Research question:

Is there any significant impact of technology enabled strategies on students learning?

Hypothesis:

1. There is no significant difference between the scores of pre test & post test.
2. There is no significant effect of technology based strategies on students learning.

Method adopted for the present study:

The researcher used experimental method for this present study.

Sampling Method: Purposive sampling method used.

The research investigation was carried out on the 25 students of S.Y.B.Ed. Mathematics methodology P.E.S's College of Education, Farmagudi, Ponda-Goa.

Experimental design : In the present research study the one group pre-test and post-test design used.

Scope: 1. This research covers 3 technology based strategies.

2. This research covers the data regarding S.Y.B.Ed. Mathematics Methodology P.E.S's College of Education, Farmagudi, Ponda-Goa.

Limitation: 1. Conclusions are only applicable to the selected sample.

2. The conclusions are only limited to year 2021-22.

Data Collection Tools:

The following tools were used for the purpose of data collection

1. Pre test before using technology based strategies.
2. Post test after technology based strategies.

Procedure: The experiment was conducted in two stages:

Stage-1: Selecting the experimental sample. The experiment was conducted on 25 students of S.Y.B.Ed. Mathematics methodology P.E.S's College of Education, Farmagudi, Ponda-Goa, Nasik.

Stage-2: Execution of Program:

The research was conducted in following steps given below: Step-I Administration of the pre-test.

Step2: Execution of technology based strategies-Use of Web Based Learning, Mobile learning, Video Conferencing Method in teaching.

Step -3: Administration of the Post test.

Data Analysis & Interpretation:

The mean, S.D. and t value for measuring difference between the means of the pre-test and post test.

Table -1:

Test	Number of students	Mean	S.D.	Calculated t value	Table t value	Level of Significance
Pre-Test	25	13.18	0.480	5.63	2.02	0.05 level
Post- Test	25	15.83				

Interpretation:

The above table revels that the calculated t value was found to be significant at 0.05 level. It shows that using technology based strategies like Web Based Learning, Mobile learning, Video Conferencing was effective for increasing learning of students. Hence, it may be inferred that the one group differed significantly in pre test scores and post test scores. In post test the scores are better than pre test as it shows superior mean gain scores. With the help of above observation researcher has to reject null hypothesis & has accepted research hypothesis.

Findings:

The findings of the present investigation is the scores of Post test are more than that the Pretest. It shows that the learning of students after using technology based strategies like Web Based Learning, Mobile learning, Video Conferencing proved more significant & effective than the use of traditional teaching methods.

Conclusion:

The conclusion is that the use of technology enabled strategies like Web Based Learning, Mobile learning, Video Conferencing made students learning more interesting. They experienced practical exposure while learning with technology based strategies. Students learning were found to be better with understanding subject.

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EFFECTIVENESS OF TEACHING SCIENCE USING ICT BASED LEARNING APPROACH ON ACHIEVEMENT OF VI STANDARD SCIENCE STUDENTS OF MAHALAXMI HIGH SCHOOL, KUDNE.

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Abstract:

ICT has also influenced our teaching learning pedagogy and is being used from primary education to higher education. In the present research, an attempt was made to find out the impact of ICT approach on achievement of VI standard science students of Mahalaxmi High School, Kudne."The objective of this research was to investigate whether ICT teaching approach or conventional method of teaching improves students` achievement in Science. In the present study Pre-Test and Post-Test was used. It was conducted in Mahalaxmi High School, Kudne.. One unit 'Fibre to fabric' from VI Standard Science textbook was selected for the study. ICT Based Learning Lesson Plans were used for implementing ICT teaching approach. And the effectiveness of these approach were tested with the help of inferential statistics i.e.'t' test. Achievement of the students in post-test was found significantly greater than the students in pre-test. There was positive correlation between ICT learning approach and expected student achievement for Science subject.

Key Words: Teaching science, ICT Based learning.

Introduction:

Education is regarded as the richest and highest treasure of humanity, which cannot be substituted by any other resource. Education is a lifelong process.Technology has greatly influenced our present society and technology has entered into every aspect of social and cultural lives and on education system largely. Teachers need to be careful about their teaching experiences they are going to provide to their students. Educational practices need to be updated with these changes, only then we can close this gap and reunite our schools with our teachings, and the rest of the society. Teachers must know the most current research practices that can be used effectively to match particular subject teaching. Now the need arises to use the Information and Communication Technology (ICT) to transform the nature of education processes and the curriculum.For effective teaching learning process, we need to change the learning practices in today's classrooms, and learning can be made very effective if students are encouraged for interaction, and this in turn enhances student`s achievement.

Therefore, it is required that a teacher needs to encourage interaction and student's participation by shifting to new methods and approaches of teaching.

Concept of ICT Approach Learning:

A shift from teacher centered education to learner centered education in which learners guide his own learning, is needed to enable students to acquire new 21st century knowledge, skills and technologies. ICT is one of the technologies which have penetrated every area of education and constitutes a shift from teacher centered to student centered pedagogy. It has been observed that ICT is influencing the learning of students. ICT decreases memorization and rote learning while increases learning with longer retention and increased performance. It is important to keep in mind that ICT alone does not produce learning; rather it is a tool that can be used in many ways to enhance construction of knowledge. Hypertext and the Internet have provided learners with huge quantities of information to explore new knowledge. ICT in the form of various program activities and devices such as i-pads, tablets, mobile, flat screen etc. allow for greater engagement with more fun and play. The information found by learners on the Internet becomes knowledge only when it is interpreted and processed by the human brain. This can be facilitated through a constructivist approach where the teacher provides guidance and motivation to self-learning.

Benefits of ICT Based Learning:

1. ICT as a medium for teaching and learning. This refers to ICT as a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. It appears in many different forms such as drill and practice exercises, in simulations and educational networks.
2. ICT as an 'assisting tool'. ICT is used as a tool when students do self-study.
3. ICT encourages activities in small groups of learners, also pace of these activities are determined by learners.
4. ICT provide teachers with new sources of information and knowledge to promote constructivist teaching effectively. ICT create greater enthusiasm for Constructivist learning amongst students.

Review of Related Literature:

1. **ROLE OF ICT IN CONSTRUCTIVIST TEACHING- LEARNING RakhiKumari Research Scholar Department of Education Patna University, Patna, India**. Constructivism is a new emerging approach of teaching and learning which is basically student centered approach. This approach is based on the premises that students create their

own knowledge with the help of their previous knowledge, understanding, experience and mental cognition. In the present changing scenario of our society, it has been found that the educational paradigm has changed from teachers' centered to students' centered. In the 21st century information society, Information and communication technology have become an important part in all aspects of life.

2. **Effect of Constructivist Teaching Approach on Student's Achievement in Science at Elementary Level Dr. Ghazala Noureen 1 Tahseen Arshad 2 Muqadas Bashir 3.**

Main objective of this study is to determine the effect of this approach while comparing it with traditional method of teaching. The study was experimental in nature. The population of study was 7th class students school. Sixty students were selected randomly. After pretesting students were distributed into two groups. Treatment was assigned randomly to the groups. Experimental group was taught through constructive approach and control group was taught through traditional approach. Treatment time was 8-weeks. Selected topics of science were taught to both groups.

Need and significance of the Study

The present study will help the teachers and students to understand advantages of ICT based learning in science teaching.

The study is significant to the field of education. It builds upon the available body of knowledge about ICT based learning.

Though most of the develop countries have made such practices common, India has still not been able to develop these strategies.

The significance of ICT based learning strategy is that it helps the students to process information, develop communication skills and refine their thinking.

Objectives

1. To find out the current level of teaching science in Mahalaxmi High School, Kudne.
2. To develop ICT mediated constructivist Approach of teaching science on the achievement of secondary school students of Mahalaxmi High School, Kudne.
3. To study the effectiveness of ICT mediated constructivist Approach of teaching science.

Assumptions

1. Teacher faces the problem regarding lack of time in class while teaching science.
2. Teacher can enhance the learning of Science subject by using ICT Based Learning Approach.

Variables

Dependent Variable – VI standard Science Students Independent Variable – ICT Based Learning Approach **Null Hypothesis**

There is no significant difference in the mean scores obtained on pre and post achievement test for Science learning.

Research Procedure

Methodology

For the present study the researcher has adoptedPre-Test-Post Test design(Experimental Method) to study the effectiveness of ICT BasedApproach on learning of Science subject for VI standard students.

Experimental Design

In the present study, the students were taught the lesson "Fibre to Fabric" using traditional lecture method. After a break of 10 days, the teacher taught the lesson "Fibre to Fabric" using smart T.V (ICT based learning) following which the post test was administered to study the effectiveness of Traditional method and ICT based learning method on achievement.

Sampling

The process of sampling includes any procedure using small number of items or parts of whole population to make conclusion regarding the whole population. 29 students were selected from StdVIth, Mahalaxmi High School, Kudne using purposive sampling method. The group was first taught using Traditional lecture method followed by ICT based learning strategy.

Tools for Data Analysis

1. Mean
2. Standard Deviation 3.‘t’ Test

Objective wise Analysis

Objective No. 1

To find out the current status/level of teaching science among the Secondary School Students of Mahalaxmi High School, Kudne.

In order to identify exact knowledge regarding science subject a pre-test was conducted among 29 students of Mahalaxmi High School, Kudne. In pre-test, students were allowed to read the chapter and on basis of those simple and basic questions were asked on the chapter **“Fiber to Fabric”.**

Objective No. 2

To develop ICT mediated constructivist Approach of teaching science on the achievement of secondary school students of Mahalaxmi High School, Kudne.

It was found that for around one week the students gain a lot of knowledge and learnt the main concepts on the chapter **"Fiber to Fabric"** of Science subject more effectively by using ICT based learning constructivist method of teaching Science in the school by using power point presentation and also with the help of smart T.V.

Objective No. 3

To study the effectiveness of ICT mediated constructivist Approach of teaching science. It was found out that in Traditional Method students found lot of difficulties in understanding the science concepts only by using chalk-board where as in ICT based learning Method students were able to related their science subject concepts directly to the animated video form by using smart T.V. This helps students to understand the concept very effectively. A post-test was conducted among all 29 students of Mahalaxmi High School; Kudne to test the effectiveness of ICT based teaching method on the students.

Table No. 1

Pre and Post Test Scores of Unit Fibre to fabric:

Df	r	Level of Significance	Calculated t	Table t	Result
28	0.85	0.05	10.54	2.91	**Null Hypothesis is rejected**

Interpretation

The obtained t value is 10.54 for achievement is greater than the table value 2.91for 28 Degree of freedom hence the null hypothesis is rejected at 0.05 level of significance.

Conclusion

There is significant difference in the pretest and posttest scores of students' achievement. The post-test mean score is higher than the pretest score and. It means that post- test scoresare more as compare to pre-test scores. This implies that the ICT Based Learning Approach has helped in increasing the learning outcome of the students.

Discussion

The finding of the study revealed in hypothesis 1 that there is significant difference between he pre-test mean scores of students exposed to ICT Based learning approach of teaching science and traditional method. Traditional lecture method is used in the schools where facilities of technology is not developed or yet to develop, to learn directly technology based teaching can be a bit challenging task for the teachers, but when they are used to it, it will really a wonderful and easy task for all the school teaching staff to enrich student's knowledge by using and showing various videos clips to the students on the particular concept.Overcoming the mentioned challenges may help teaching- learning and promote to make learning easier and faster.In many ways, ICT has become a part of children's everyday lives, even in preschools. The computer has now become a common tool for the education of preschool children because when used appropriately, it can reinforce their learning experiences.

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IDENTIFICATION OF MISCONCEPTIONS ABOUT THE HUMAN DIGESTIVE SYSTEM USING CONCEPT MAPS AMONG HIGHER SECONDARY STUDENTS

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Abstract

Concept maps help detect misconceptions and provide revision exercises to assess comprehension once a topic has been introduced. A concept map is a schematic drawing used to show the connection among the concepts in propositional form. A concept map is a helpful tool for illustrating the relationships between main concepts and sub-concepts. The main objective of the study was to identify misconceptions about the human digestive system among higher secondary students using concept maps. The data was collected from higher secondary students (XI class students) (N = 388) with the help of students' preliminary concept maps and researcher-made concept map tools. Findings of the study showed that secondary school students hold misconceptions related to the human digestive system, i.e. few (22.68%) students have misconceptions such as 'Human Digestive System is the process by which hard food is converted into simple diffusible assimilable nutrients', few (19.32%) students have misconceptions such as 'Alimentary Canal starts with the throat," etc. The present paper will help use concept maps for the identification and remediation of students' misconceptions.

Keywords: *Concept Map, Higher Secondary Students, Misconceptions, Human Digestive System*

Introduction

Students acquire knowledge through interaction with the environment and primarily through an instinctual process. Biology education should equip students with the knowledge and skills to comprehend the surrounding world. The significance of biology education is growing due to the significant impact of modern technologies on the daily lives of all people or as a result of the rise of environmental problems that negatively impact people's lives. However, children's comprehension of several essential biological topics frequently diverges from that of scientists. These disparities in children's conceptualizations are commonly called misconceptions (Fisher, 1985). The misperceptions are pervasive and resistant to change using conventional instructional

methods. Multiple research reports indicate that the spread of misconceptions is not limited to young children but also includes high school and college students. Ausubel's theory includes three guiding principles: (i) Concepts are only meaningful when the student can visualize them and incorporate them into a cognitive structure. (ii) Proceed from the most general to the most specific concepts. (iii) Students' preparedness, includes their current knowledge, cognitive development stage, and dominant intellectual functioning style.

Concept:

A concept is an idea, broad notion, theory, or conviction you hold in your mind. In the words of Ebenezer and Conner (1998), "Concepts are ways of putting the world together that the human mind has come up with." According to Novak (1991), an idea is a tagged impression of an event or thing pattern or a record of an event or thing. According to Pines (1985), concepts are the "furniture of the conscious mind." Collette and Chiappetta (1989) stated that "concept learning is an active process essential to understanding science concepts, principles, rules, hypotheses, and theories." According to Bruner, Goodnow, and Austin (1956), a concept comprises five crucial components: a name, a description, qualities, values, and instances.

Misconceptions:

The term "misconception" pertains to an inaccurate comprehension of a particular concept, the erroneous utilization of a concept's nomenclature, the incorrect categorization of instances related to the concept, the conflation of disparate concepts, the inappropriate establishment of hierarchical connections, and the excessive or inadequate generalization of concepts (BasJaoude, 1991). Misconceptions refer to inaccurate beliefs or understandings that arise from a particular perspective. Misconceptions, which refer to erroneous beliefs or understandings, can also be called false concepts, preconceptions, alternative conceptions, alternative notions, conceptual roadblocks, spontaneous conceptions, non-scientific beliefs,conceptual misunderstanding, preconceived notions, factual misconceptions, and vernacular misconceptions.

Concept Mapping

A concept map is a node-link image that shows how main concepts and sub-concepts are related. A concept map comprises nodes, arrows that connect the nodes, and sentences that show how the nodes are related to each other. Two nodes linked by an arrow with a label are called propositions (Schwendiman, 2014)

Concept maps assist students in identifying the relationships between new and prior knowledge and highlight the most essential concepts or propositions to be learned. Concept maps are flexible tools that can be utilized in various educational contexts. For instance, they play a vital

role in curriculum development, learning, and instruction (Novak, 1984). Concept maps have been used as evaluation instruments to measure learning outcomes distinct from those of conventional psychometric instruments. To identify more conceptually based teaching and learning strategies, research has examined the use of concept maps in several subject areas, including biology and others. Concept maps can facilitate students' understanding of their knowledge structure and the process of knowledge construction.

According to Ebenezer and Conner (1998), a concept map is a graphical representation of a collection of interconnected conceptual meanings. In addition, they assert that it is a semantic network that illustrates the hierarchical relationships between concepts. Connecting concepts and sub-concepts with phrases that illustrate their interconnections. The conceptual (theoretical) foundation of concept mapping is Ausubel's theory of learning, which states that meaningful learning depends on integrating new information into a cognitive structure established through prior learning.

Novak and Gowin (1984) developed an instructional theory based on Ausubel's principles of meaningful learning and incorporating "concept maps" to illustrate meaningful relationships between concepts and prepositions.

Students can get valuable insight into the structure and development of their knowledge using concept maps. This is an example of meta-learning, whereby idea maps may aid in teaching students. Learners engaging in concept mapping should demonstrate proficiency in all six of Bloom's taxonomy of learning outcomes: Remembering, understanding, applying, analyzing, evaluating, and creating.

Smith, A. & Jones, B. (2015) administered concept mapping tasks to a group of higher secondary students and analyzed the resulting concept maps to identify common misconceptions. The findings revealed misconceptions regarding the role of enzymes in digestion and the sequence of digestive processes. This study highlights the effectiveness of concept maps in identifying specific misconceptions for targeted instruction.

Tang, Johnson & et al. (2021) investigated the use of concept maps to identify misconceptions related to nutrient absorption in the human digestive system. Concept maps created by students revealed misconceptions about the absorption sites of different nutrients and the mechanisms involved. This study demonstrates how concept maps can help identify misconceptions and inform instructional strategies for addressing specific areas of misunderstanding.

Garcia and Patel (2011) conducted a study combining concept mapping and clinical interviews to assess students' misconceptions about the functioning of the digestive system. The use of concept maps helped identify misconceptions related to the role of specific organs and the overall process of digestion. The study emphasizes the importance of utilizing multiple assessment

methods, including concept maps, to gain a comprehensive understanding of students' misconceptions.

Need and Rationale

A significant proportion of secondary school students completed their coursework without a satisfactory level of comprehension of the concepts and theories presented to them. Abstract concepts are susceptible to misinterpretation and pose challenges for rectification. The biology field necessitates acquiring a multitude of abstract concepts by students. Misconceptions that arise at the outset can be alleviated. Misconceptions can lead to student confusion, incorrect learning, and the formation of alternative conceptions. The Human Digestive System is a crucial component in most daily physiological processes involving humans on a global scale. The presence of misconceptions among secondary and higher secondary students regarding human digestive concepts can potentially hinder their understanding of other biological terms and concepts. Furthermore, these misconceptions may contribute to the formation of societal superstitions. As a result, the researcher was motivated to undertake a study to identify such misconceptions among higher secondary school students.

Review of Related Literature

Gawade, A., and Patankar, P. S., (2016) stated that the concept map strategy for teaching biology to high school students was effective. The effect of the concept map strategy in rural areas resulted in a higher post-test achievement test score for the experimental group of high school students.

Hanson and T. A. Kwarteng (2016) discovered that concept mapping effectively enhanced chemistry teacher trainees' comprehension of chemical phenomena at the University of Winneba in Ghana. Also noted was an increase in the proportion of trainees who provided correct responses on the post-mapping.

Djanette, B and Fouad, C. (2014) used concept maps to determine university students' misconceptions about light. The main of the study was to show that concept mapping is a very effective way in terms of revealing the misconceptions of students.

According to **Novak and Canas (2008),** concept maps can be used as diagnostic tools to evaluate students' knowledge before instruction and assessment tools to gauge students' conceptual growth after instruction.

Statement of the Study

Identification of Misconceptions about the Human Digestive System using Concept Maps among Higher Secondary Students

Terms and Phrases Used in the Study Higher Secondary students

In the present study, the students studying in Junior College XI-Class in science stream with Biology subject following the MSBSHSE Board Pattern are considered as higher secondary students.

Misconceptions

In the context of the current study, misconceptions about particular biological concepts are defined as "an incorrect understanding of a concept, the misuse of a concept name, the incorrect classification of concept examples, confusion between different concepts, improper hierarchical relationships, or over- or under-generalizing of concepts."

Objective of the study

- To identify misconceptions about the human digestive system by using concept maps among higher secondary school students

Assumptions

- XI standard science branch students hold some common misconceptions about biology.

Delimitations

The present study was limited to the perception of higher secondary students in Kolhapur city and delimited to the Human Digestive system content in the Biology Textbook produced by Maharashtra State Bureau of Textbook Production & Research Curriculum, Pune. The present study was delimited to the year 2019-2020 only.

Research Methodology Method and Sample

A descriptive school survey method was adopted for the study. A total of 388 (N = 388) higher secondary biology students (XI-Class) from eight higher secondary schools in Kolhapur city were selected through purposive sampling.

Tool Development and Data Collection

The following steps were adopted for the development of the tool:

a. Analysing related literature.

Researchers have examined the previous relevant literature concerning human digestive system misconceptions.

b. Defining the content of the XI standard Biology textbook

The content was defined by the researchers i.e. Human Digestive System

c. ***Identifying propositional knowledge statements***

20 propositional knowledge statements were identified for the Human Digestive System concept and validated by five biology teacher experts.

d. ***Prepare a concept map***

A map of concepts that relate to the topic human digestive system was developed based on the procedure described by Novak (1980).

e. ***Relating propositional knowledge to the concept map.***

The propositional knowledge statements are directly linked to the concept map to assure the internal consistency of the examined content. This is a check to ensure that the underlying concepts and propositional statements examine the same topic.

f. ***Collect information about students' misconceptions***

After preparation of the concept map tool, researchers collected data from higher secondary students

Procedure and Data Collection

1. Researcher ensured that the Human Digestive System concept was already taught in the XI standard Biology Class.
2. Researcher introduced the concept mapping to students and instructed them about designing preliminary concept maps and then researchers collected Human Digestive system-preliminary concept maps sheets from students.
3. Researcher collected second-phase data with the help of a researcher-made Human Digestive System-Concept map Questionnaire
4. In the next step, Human Digestive System-Concept Map Answer Key was provided to students to compare and self-evaluate their conceptual understanding.

Data Analysis and Interpretation

The researcher analyzed the collected data of concept maps with propositional knowledge statements and answer keys of the concept map. Categorization and coding are used for the classification of misconceptions. Descriptive statistics percentage tool was used to analyze and interpret the data.

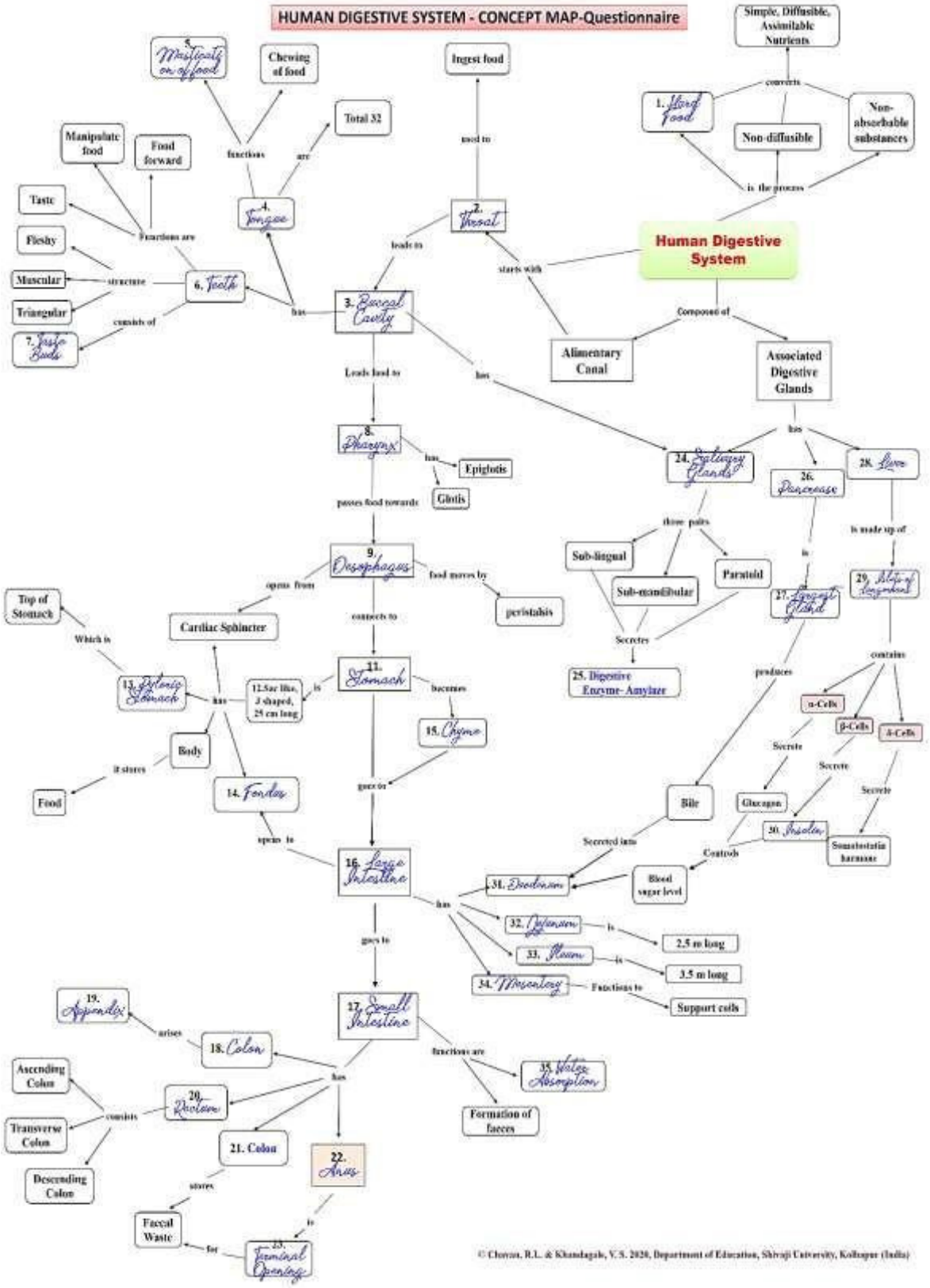


Fig. 1. Human Digestive System –Concept Map-Questionnaire

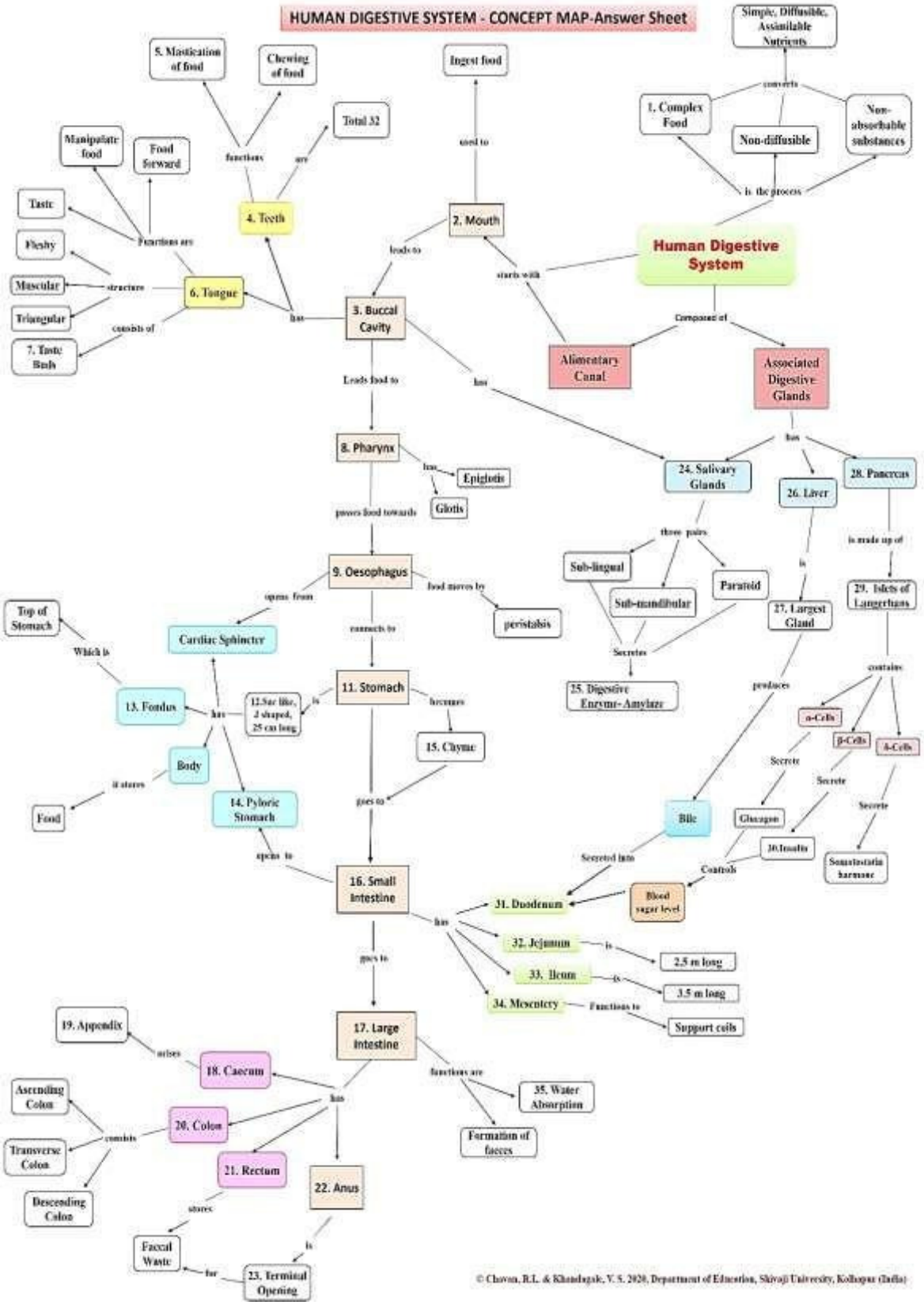


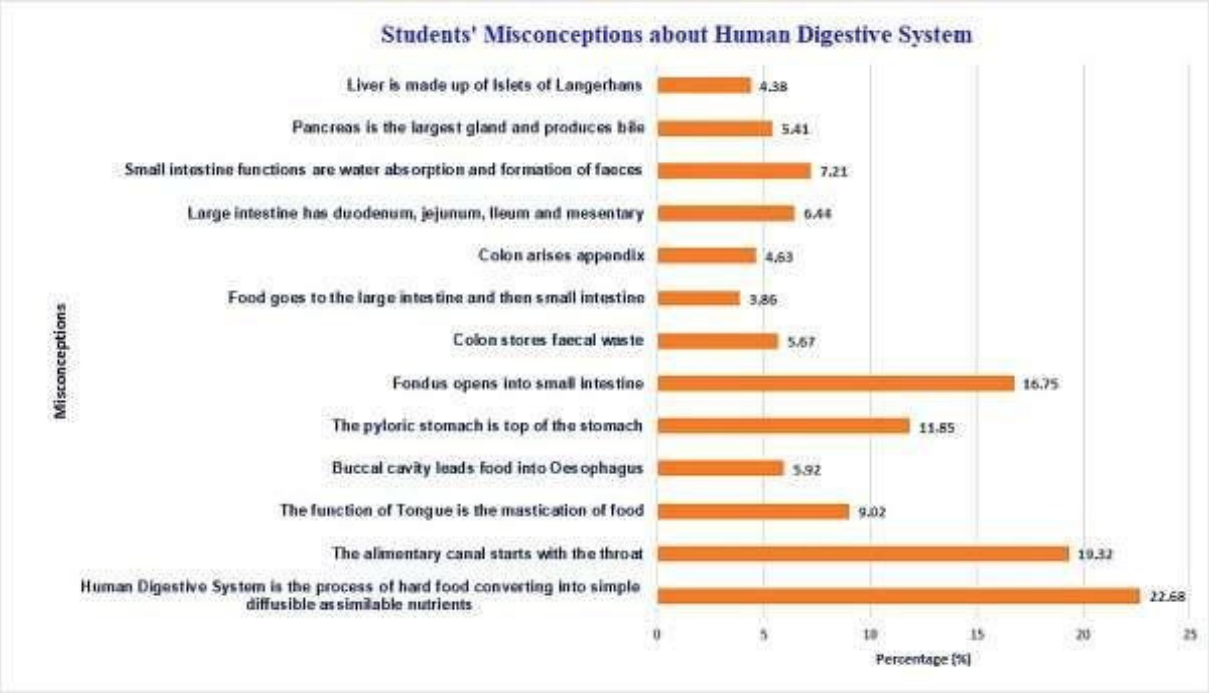
Fig.2.Human Digestive System –Concept Map-Answer sheet

Results

After thorough data analysis, important findings were found.

Table No.1 Students' Misconceptions about Human Digestive System

Misconceptions	Frequency	Percentage (%)
Human Digestive System is the process of hard food converting into simple diffusible assimilable nutrients	88	22.68
The alimentary canal starts with the throat	75	19.32
The function of the Tongue is the mastication of food	35	9.02
Buccal cavity leads food into Oesophagus	23	5.92
The pyloric stomach is top of the stomach	46	11.85
Fondus opens into small intestine	62	16.75
Colon stores faecal waste	22	5.67
Food goes to the large intestine and then small intestine	15	3.86
Colon arises appendix	18	4.63
Large intestine has duodenum, jejunum, Ileum and mesentary	25	6.44
Small intestine functions are water absorption and formation of faeces	28	7.21
Pancreas is the largest gland and produces bile	21	5.41
Liver is made up of Islets of Langerhans	17	4.38



Graph No. 1 Students' Misconceptions about Human Digestive System

From the above Table No.1 & Graph No.1 It is observed and interpreted that, the concept maps analysis revealed several misconceptions the students held about the human digestive system. The most common misconceptions identified were: A few (22.68%) students had a misconception as the 'Human Digestive System is the process of hard food converts into simple diffusible assimilable nutrients', a Few (19.32%) students showed misconception as 'Alimentary canal starts with throat', Few (16.75% & 11.85%) students have misconceptions as 'Fondus opens into small intestine' & 'Pyloric stomach is top of stomach'. Very few students have misconceptions as 'The function of Tongue is mastication of food (9.02%), 'Buccal cavity leads food into oesophagus (5.92%),' 'Colon stores faecal waste (5.67%),' 'Food goes to the large intestine and then small intestine (3.86%),' 'Colon arises appendix (4.63%),' 'Large intestine has duodenum, jejunum, Ileum and mesentery (6.44%),' 'Small intestine functions are water absorption and formation of faeces (7.21%),' 'Pancrease is the largest gland and produces bile (5.41%),'& 'Liver is made up of Islets of Langerhans (4.38%).

Conclusion and Discussion

In conclusion, the analysis of concept maps revealed several misconceptions held by students regarding the human digestive system. The study identified several common misconceptions, including misconceptions about the overall process of digestion, the starting point of the alimentary canal, the connections between different parts of the digestive system, and the functions of specific organs.

One prevalent misconception was that the human digestive system is solely responsible for the conversion of hard food into simple, diffusible, and assimilable nutrients. This misconception reflects a lack of understanding about the multiple steps and processes involved in digestion, including mechanical and chemical digestion.

Another common misconception was that the alimentary canal starts with the throat. This misconception indicates a misunderstanding about the initial entry point of food into the digestive system, which is actually the mouth.

Additionally, misconceptions were identified regarding the fondus opening into the small intestine and the belief that the pyloric stomach is located at the top of the stomach. These misconceptions demonstrate a lack of knowledge about the anatomical structures and connections within the digestive system.

Other misconceptions included the function of the tongue being solely related to mastication, the buccal cavity leading directly into the esophagus, the colon storing faecal waste, the incorrect sequence of food passing through the large intestine before the small intestine, the colon arising from the appendix, the mistaken identification of duodenum, jejunum, ileum, and mesentery as parts of the large intestine, the misunderstanding of the small intestine's functions as

water absorption and formation of faeces, the misconception that the pancreas is the largest gland and produces bile, and the belief that the liver is composed of Islets of Langerhans.

Addressing these misconceptions is crucial for promoting accurate understanding and knowledge of the human digestive system among students. Educators should develop effective teaching strategies and materials that specifically target these misconceptions, providing clear and accurate information about the processes, structures, and functions involved in digestion.

It is important to note that this study focused on a specific group of students, and further research involving larger and more diverse samples is needed to gain a comprehensive understanding of misconceptions about the human digestive system.

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A COMPARATIVE STUDY OF ONLINE AND OFFLINE TEACHING ON STUDENTS' BEHAVIOR OF GOA.

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Abstract: -

Whole scenario of educational system has been changed because of COVID-19. The Covid- 19 pandemic has changed the whole scenario of Society and no doubt Education system is also affected through it. The Covid-19 pandemic has changed the process of teaching and learning and interaction between the student and teachers in higher education. Students were having only online learning option to run or smooth functioning of teaching-learning process. This paper aims to conduct a comparative analysis of teacher-trainee survey between online live teaching and traditional off-line teaching on their behavior, and explore the direction of teacher education reform in institutions in Goa state. The study was carried out within Goa state, in B. Ed and integrated B.Ed. integrated colleges of Goa. The sample size for this survey was 105. 105 students were participated in this survey. The findings to this survey show the effect of online and offline teaching on student's behavior using 'CHI-SQUARE' test. The findings of the study revealed that offline teaching gives the student better understanding (flexibility) as compared to online teaching, sense of belongingness occur during offline classes whereas lack of attention during online learning create disinterest and affects studies. Furthermore, Offline learning is more focused, less interrupted, more reliable, more interactive and keeps students attentive. Online learning may not be same as offline learning, but during the current situation of Covid-19 pandemic, it provides benefits to the students, saves their time and improves their academic performance.

Keywords: -Offline Teaching, Online Teaching, Education, Effectiveness, Student behavior

Introduction:

In early 2020, a global pandemic (COVID-19) broke out and severely affected the progress of education in various countries' universities and institutions, which promoted the progress of online teaching-learning at the same time. The Covid-19 pandemic has changed the whole scenario of Society and no doubt Education system is also affected through it.The Covid-19 pandemic has changed the process of teaching and learning and interaction between the student and teachersin higher education. As a result, the online education has been popularized and developed. The epidemic increased not only the importance and urgency of online education, but also provided an

opportunity for an in-depth discussion of online education in India.

This paper aims to conduct a comparative analysis of teacher-trainee survey between online live teaching and traditional off-line teaching on their behavior, and explore the direction of teacher education reform in institutions in Goa state.

Objective of the Study:

- To compare the online and offline teaching on teacher trainees' behavior in Goa.

Online Teaching:

Whenever we talk about online teaching it refers to learning and supportive resources that are available through a computer. Online teaching transfers the teaching content of traditional classrooms to the network by using online teaching platforms, network chat tools, video conferences, and other forms. The teaching model includes network broadcast teaching, video network teaching, large-scale online open class, and other forms. It can provide rich learning resources (Day and McCulloch, 1996), flexible and independent ways for teachers to teach and students to learn, which helps stimulate students' learning interest and initiative, and develop an international vision. All of these contribute to cultivating students' creative idea generation (Aggarwal et al., 2021).

However, these factors may affect the cultivation of students' creative idea generation, such as some teachers' backward teaching ideas (Oksana Andriivna et al., 2021), some students' inexplicit consciousness of initiative and innovation, and the lack of practical training conditions.

Offline Teaching:

Traditional offline teaching has been used so far and formed multiple teaching modes such as lecture method, 5WH (what, where, when, who, why, how), case method, discussion method, mind-mapping method, reverse thinking, role-playing method, practice method, etc. It offers the chance for students to receive face-to-face guidance from teachers, which contributes to enhancing the emotional communication between them, cultivates students' creative idea generation, and shapes their creative personality, while teachers pass on knowledge to students (Cao, 2015).

However, offline teaching is limited by time and space in teaching and communication between teachers and students. It may also lead to students being not updated on the latest academic trends at home and abroad because the information that teacher passed to students is limited, the learning resources are not updated in time, which make it difficult to stimulate students' endogenous motivation and learning interest, and is not conducive to the cultivation of students' creative idea generation.

Review of Related Researches

Padmalini Singh et al (2021), conducted a study among 100 respondents regarding Comparative Study on Effectiveness of Online and Offline Learning in Higher Education in India, Indonesia and Malaysia. The results of the study revealed that offline learning is effective than online learning.

Dr. Debasish Biswas, Chanchal Dey (2021) conducted a study on online vs offline education, Opportunities and Challenges in Indian context. It is not possible to identify the better alternative of the two because each one has got distinct advantages and disadvantages over the other. Traditional educational systems through offline based face to face classrooms cannot be replaced. Online education is good for specific courses and can act as a supplement to the education process to make it more interactive and interesting. As soon as we return back to normalcy post Covid-19 era, we should move back to offline education.

Atika Qazi et al (2020) conducted a cross-sectional study among 320 students regarding Conventional to online education during COVID-19 pandemic. The study suggested that it is crucial for the government and other policymakers worldwide to address access and use of online learning resources of their populace amid pandemic.

Methodology and Procedure:

The data has been collected using a descriptive survey method through Google form various integrated B.Ed. and B.Ed. colleges of Goa to determine the student's behavior during online and offline learning. Data was collected for a period of 1 month i.e. June, 2021. The purposive sampling technique was used for selection of sample. 105 teacher trainees were selected purposively from integrated B.Ed. and B.Ed. colleges of Goa. The questionnaire was given to the selected sample through Google form. Data was analyzed in terms of responses and percentage Google form for collection of required data, which is suitable and fulfills the objectives of the study adequately and deliberately. The survey Questionnaire constructed by the investigators themselves with the help of supervisor. After the collection of the data, scoring was done on the basis of prescribed procedure. There were total 21 multiple choice questions using 5 rating scale. First of all, observed frequency and expected frequency were found for each question and used 'Chi-Square Test' for final result.

Analysis and Interpretation:

Table 1: Summary of Respondents

Respondents	Gender		B.ED.		B.A.B.ED.		B.Sc. B.ED.	
Sample	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
105	63	42	21	12	24	16	18	14

Table 1 represents the summary of Respondents. There are 105 respondents who respond the survey questionnaire form. As much as 60% were girls and 40% were boys.

In order to study the effectiveness online and offline teaching on students' behavior, the rating of response on the various statements regarding online and offline teaching on students' behavior were obtain for sample group. The statement wise analysis and interpretation was carried by computing percentage of response and Chi Square.

Table 2: The response to study the effectiveness online and offline teaching on students' behavior of sample group (N=105)

Statement	Response of Student		%	Chi Square	Significance for df=4
1. How do you feel about offline classes?	Interesting	33	31.43	24.000	Significant
	Interactive	31	29.52		
	Boring	7	6.67		
	Effective	21	20.00		
	Very helpful	13	12.38		
2.How helpful are your teachers during offline classes?	Extremely helpful	37	35.24	39.905	Significant
	Cooperative	32	30.48		
	Helpful	19	18.10		
	Teacher as guide	17	16.19		
	Directional	0	0.00		
3.Offline (learning) teaching environment in classroom helps in better learning rather than online learning. Do you agree?	Strongly agree	58	55.24	132.762	Significant
	Agree	40	38.10		
	Neutral	5	4.76		
	Disagree	0	0.00		
	Strongly Disagree	2	1.90		
4.How effectively can you use classroom resources during offline classes?	Very effective	41	39.05	86.952	Significant
	Effective	47	44.76		
	Moderately effective	11	10.48		
	Slightly effective	4	3.81		
	Not at all effective	2	1.90		
5. What do you like most about offline classes?	Face-to-face interaction	79	75.24	204.476	Significant
to online classes?	Immediate solution for queries	14	13.33		
	Leads to interest in subject	6	5.71		
	Leads to creativity	1	0.95		
	Teacher can use different teaching methods	5	4.76		

6.Do you think offline teaching gives you better understanding (flexibility) as compared to online teaching?	Yes, always	81	77.14	222.952	Significant
	Very often	17	16.19		
	Sometimes	6	5.71		
	Rarely	0	0.00		
	No, never	1	0.95		
7.In which mode of teaching do you actively participate?	Offline classes	75	71.43	79.771	Significant
	Online classes	1	0.95		
	Both	29	27.62		
8.Do you feel attached/ sense of belongingness during offline classes?	Yes, always	68	64.76	146.952	Significant
	Very often	21	20.00		
	Sometimes	15	14.29		
	Rarely	0	0.00		
	No, never	1	0.95		
9.Do you feel a sense of belongingness during online classes?	Yes, always	14	13.33	30.952	Significant
	Very often	17	16.19		
	Sometimes	43	40.95		
	Rarely	20	19.05		
	No, not at all	11	10.48		
10.Do you feel offline classes promote a sense of punctuality and discipline among students as compared	Yes, always	81	77.14	220.095	Significant
	Very often	15	14.29		
	Sometimes	6	5.71		
	Rarely	1	0.95		
	No, not at all	2	1.90		
11.What is the average time you spend each day on online learning?	1-3 hours	51	48.57	77.810	Significant
	3-5 hours	27	25.71		
	5-7 hours	22	20.95		
	7-10 hours	5	4.76		
	10+ hours	0	0.00		
12.Do you feel you get enough attention from your teacher during online classes?	Yes, always	13	12.38	38.952	Significant
	Very often	21	20.00		
	Sometimes	44	41.90		
	Rarely	21	20.00		
	No, never	6	5.71		

13.Do you get frustrated due to technical issues during online learning?	Yes, always	46	43.81	69.429	Significant
	Very often	21	20.00		
	Sometimes	33	31.43		
	Rarely	4	3.81		
	No, never	1	0.95		
14.How does online classes affect health of students?	Backache, headache	69	65.71	176.952	Significant
	Strain on eyes	34	32.38		
	Neck pain	2	1.90		
	Anxiety	0	0.00		
	Depression	0	0.00		
15.Do you feel online teaching leads to depression?	Yes,	70	66.67	11.667	Significant
	No,	35	33.33		
16. If yes, why?	Inability to grasp what is being taught	53	50.48	71.333	Significant
	Burden of assignments and exam	16	15.24		
	No/ limited access to smartphone	10	9.52		
	Poor network connectivity	23	21.90		
	Domestic responsibility	3	2.86		
17.What are the reasons of stress in student during online classes?	Procrastination leading to delay in work	28	26.67	103.048	Significant
	Network issues leading to frustration	58	55.24		
	Skipping online classes due to technical issues	14	13.33		
	Burden of online assignments and tests	5	4.76		
	Loneliness due to absence of teacher or friends	0	0.00		
18.What are the problems faced by students living in rural areas?	Limited access to smartphone/laptop	54	51.43	135.143	Significant
	Network issues	46	43.81		
	Frequent power cuts	3	2.86		
	Family disturbance	1	0.95		
	Improper learning environment	1	0.95		

19.Which learning method do you find more interesting and engaging?	Offline Learning	88	83.81	122.114	Significant
	Online Learning	3	2.86		
	Both	14	13.33		
20.How often do you face technical issues during online classes?	Always	20	19.05	47.524	Significant
	Often	28	26.67		
	Sometimes	43	40.95		
	Rarely	13	12.38		
	Never	1	0.95		
21.Does lack of attention during online learning create disinterest and affect your studies?	Yes, very often	39	37.14	54.381	Significant
	Frequently	24	22.86		
	Sometimes	35	33.33		
	Rarely	4	3.81		
	No, not at all	3	2.86		

Ref.: The facts and figures in the table above are based on actual field data collection. If df = 4 then the table values of Chi square at 0.01 significance levels is 13.277.

From the table -2 it is observed that

- The Chi-Square calculated are significant at 0.01 significance level for df=4 for all the statements. As the responses of the students are in favor to the statements 1, 2, 3, 4, 5, 6, 7, 8, 10, and 19. Thus, it is proved that students are in favor with offline teaching classes. whereas the responses of the students are not in favor to the statements 9, 11, 12 and the responses of the students are in favor to the statements 13, 14, 15, 16, 17, 18, 20, 21 Thus, it is proved that students are not in favor with online teaching classes.

Findings:

- 31.43% of students responded as offline classes are interesting, 29.52% of students responded as it is interactive and 12.38 % students responded asvery helpful.The Chi-Square calculated is 24.00 which is significant at 0.01 significance level for df=4.Thus, it is proved that the response of the students aboutoffline teaching classes for sample grouptowards the statement-1are found favorable.
- 35.24 % of students respondedthat offline teaching in classroom was extremely helpfulin better learning where as 30.48% responded that offline teaching in classroom was cooperative. It means that the majority of students accepts that during offline classes teachers help the students in better way. The Chi-Square calculated is 39.905 which is significant at 0.01 significance level for df=4.Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement -2are found

favorable.

- 93.34 % ofstudents opined that Offline (learning) teaching environment in classroom helps in better learning rather than online learning. The Chi-Square calculated is 132.762 which is significant at 0.01 significance level for df=4.Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement-3are found favorable.
- 83.81 % of students opined that that Offline classroom resources during offline classes can use effectively. The Chi-Square calculated is 86.952 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement-4 is found favorable.
- 75.24% of students mostly liked offline classes for face-to-face interaction whereas 13.33% of studentsfor immediate solution for queries, 5.71% of studentsfor to lead to interest in subject and 4.76% ofstudents for use of different teaching methods by the teacher. It means that the majority of students accepts that they like face-to-face interaction in classroom teaching. The Chi-Square calculated is 204.476 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement-5are found favorable.
- 77.14% of students always think that offline teaching gives them better understanding (flexibility) as compared to online teaching. The Chi-Square calculated is 222.952 which is significant at 0.01 significance level for df=4.Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement-6are found favorable.
- 71.43% of students opined that they participated actively in offline classes asselecting the mode of teaching where as 27.62% of students opined that they participated actively in bothoffline and online mode of teaching. It means that the majority of students accepts offline teaching mode for teaching learning. The Chi-Square calculated is 79.771 which is significant at 0.01 significance level for df=4.Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement-7 are found favorable.
- 64.76% of students felt attached/sense of belongingness during offline classes The Chi-Square calculated is 146.952 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement-8 are found favorable.
- 13.33% of students responded felt attached/sense of belongingness during online classes where as 16.19% responded to Very often, where 40.95% responded to Sometimes, where 19.5% responded to Rarely and 10.48 % responded to No, not at all. It means that the most

student didn't feel an attachment/sense of belongingness mainly during online classes. The Chi-Square calculated is 30.952 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about online teaching classes for sample group towards the statement-9 are found unfavorable.

- 77.14% of students felt offline classes promote a sense of punctuality and discipline among students as compared to online classes The Chi-Square calculated is 220.095 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about offline teaching classes for sample group towards the statement-10 are found favorable.
- 12.38% of students felt that they got enough attention from your teacher during online classes where 20.00% responded to Very often, where 41.70% responded to Sometimes, where 20.00% responded to Rarely and 5.71 % responded to No, never. It means that the majority of students didn't get enough attention from their teacher during online classes. The Chi-Square calculated is 38.952 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about online teaching classes for sample group towards the statement-12 are found unfavorable.
- 43.81% of students got frustrated due to technical issues during online learning where as 31.43% responded to Sometimes. It means that the majority of students felt that they got frustrated due to technical issues during online learning. The Chi-Square calculated is 69.429 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about online teaching classes for sample group towards the statement-13 are found favorable.
- 65.71% of students affected by Backache, headache through online classes whereas 32.38% affected by strain on eyes. It means that the majority of students accept that online classes affected to their health. The Chi-Square calculated is 176.952 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about online teaching classes for sample group towards the statement-14 are found favorable.
- 66.67% of students felt that online teaching leads to depression. The Chi-Square calculated is 11.667 which is significant at 0.01 significance level for df=4. Thus, it is proved that the response of the students about online teaching classes for sample group towards the statement-15 are found favorable. The reasons behind this were stated by 50.48% of students that inability to grasp what is being taught reason to leading depression, 21.90% opined that the Poor network connectivity. It means that the majority of students accept that online teaching is unable to grasp student's attention toward the teaching. The Chi-Square calculated is 71.333 which is significant at 0.01 significance level for df=4.
- The reasons of stress in student during online classes stated by 26.67% of students is

Procrastination leading to delay in work, whereas 55.24% stated that the network issues leading to frustration, where 13.33% stated the skipping online classes due to technical issues, where 4.76% responded to Burden of online assignments and tests It means that the majority of students accept that online teaching is not convenient. The Chi-Square calculated is 103.048 which is significant at 0.01 significance level for df=4.

- The problems faced by students living in rural areas stated by the students are 51.43% of students stated that limited access to smartphone/laptop that problems faced by students living in rural areas where 43.81% responded to Network issue, It means that the majority of students have the problems with online teaching classes. The Chi-Square calculated is 135.143 which is significant at 0.01 significance level for df=4.
- 83.81% of students felt that offline teaching learning method is more interesting and engaging The Chi-Square calculated is 122.114 which is significant at 0.01 significance level for df=4. Thus, it is proved that the majority of the students are in favor with offline teaching classes.
- 37.14% of students felt that lack of attention during online learning create disinterest and affects studies whereas 22.86% responded to Frequently, where 33.33% responded to Sometimes. It means that the majority of students accept that lack of attention during online learning create disinterest and affects studies. The Chi-Square calculated is 222.952 which is significant at 0.01 significance level for df=4. Thus, it is proved that the majority of the students are not in favor with online teaching classes.

Conclusion:

Pandemic has given us an option of Online education, but it cannot fulfill important factors of Offline learning like face-to-face interaction, immediate feedback, problem solving, discipline in classroom, reliability, attentiveness of students. We can easily make out these factors are absent during online teaching-learning process which can lead to create misconception, indiscipline, lack of attention during online learning create disinterest and affects studies, health issues and stress to students during teaching-learning process. During pandemic we have adapted online teaching but it cannot be the better option for long term. For smooth conduct of teaching-learning process we can say better option is Offline classes as its more effective, leads to interest in the subject and helps a student to hold mastery on that subject.It was concluded that Offline learning is more focused less interrupted, more reliable, more interactive and keeps students attentive. Online learning may not be same as offline learning, but during the current situation of Covid-19 pandemic, it provides benefits to the students, saves their time and improves their academic performance.

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A STUDY ON THE EFFECTIVENESS OF LECTURE METHOD AND INNOVATIVE PEDAGOGY TEACHING ON STUDENTS PERFORMANCE

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Abstract

Education prepares one for the world of work, hence, the adoption of innovative pedagogy in the process of teaching and learning is key to attainment of this goal. This involves exploring new methods of teaching, sharpening practices that are effective, and expanding the application of technology. By shifting the focus of classroom from teacher to student, teachers may make their subject matter more engaging and ensure that students understand the concept thoroughly before applying them. The classroom no longer has four walls and a lecture-based teaching style in the educational environment of today. To mitigate students' poor achievement in Economics through lecture method, innovative pedagogy was adopted to make students become active learners in classroom learning. The main aim of this study was to test the effectiveness of lecture method and innovative pedagogy teaching on student's performance in Economics subject of standard 11th commerce students. In this study, pre-test - post-test single group research design has been used wherein only a single set of sample was measured on a dependent variable of interest, exposed to a intervention and then measured again to determine the change or difference between the pre and post measurement. A sample of 40 students was chosen through purposive non–probability sampling. The data was collected using self-administered questionnaire. The collected data was then processed and analyzed through percentage, mean, standard deviation, t-test and effect size. Therefore, it was concluded that the innovative pedagogy teaching was effective in improving student's performance.

Keywords: Lecture method, innovative pedagogy, economics, student's performance

INTRODUCTION

Every area of a person's life is impacted by education, which is a lifetime process. It is a process to improve one's quality of life, which improves society and the universe as a whole. A school is an institution intended for teaching students under the guidance of teachers. Following ten years of schooling, commerce is a stream of study that may be chosen at the 10+2 or Higher

Secondary levels. Commerce stream includes subjects such as Business Studies, Accountancy, Economics, Banking, Secretarial Practice, Etc. One of the main subject in commerce education is Economics. The major goal of teaching economics in schools is to foster in students

the critical-thinking abilities, in-depth economic knowledge, and attitudes necessary to become useful, active citizens. Teaching was done through lecture method utilising a chalkboard and chalk to help the students comprehend the material. This method is convenient and usually makes the most sense, especially with larger classroom size.

As time goes on, in the ever-evolving world of today, the paradigm of teaching and learning is continuing to move from a passive to a more active and learner-centered approach that can meet students' needs for 21st-century skills (Schleicher, A., 2012). According to Hoffmann, L. M. A., & Koifman, L. (2013)), This change puts a great deal of pressure on educators to have the innovativeteaching abilities needed to engage students in the learning process. Perhaps this explains whyit is believed that the effectiveness of teaching and learning depends in large part on the teacher's competence, which is assessed by their theoretical and practical knowledge as well as their pedagogical skills in the use of new and emerging information and communication technologies. Innovative pedagogy is the study of innovative teaching methods and how they impact the learning process. According to Naz, F., & Murad, H. S. (2017), The underlying basis of innovative pedagogy is the belief that every learner has the potential to succeed and learn(p.2). According to the National Education Policy 2020, learning must be holistic, integrated, inclusive, enjoyable, and engaging.

According to recent studies, there are many innovative pedagogy of instruction that might be introduced to the teaching repertory and used to improve or supplement the conventional teaching style (Bakare, J., & Orji, C. T. (2018); Dhir, A., et al., 2013; Naz & Murad, 2017; Zhang, A., et al., 2020; Orji, C. T., 2015). Case Study, Power - point presentation, problem- solving, and constructivist approach are some of the innovative pedagogies which can be incorporated in teaching.

Power-point presentation - Recapitulating the idea in a power-point presentation is helps to better understand abstract ideas by the visual effect.

Case study - Case-based learning models real-world circumstances and requires students to actively address challenging issues.

Problem solving method – Problem solving is the process of detecting an existing issue, locating its underlying cause or causes, selecting the best course of action to address it, and ultimately putting that plan into action.

Constructivism - Constructivism contends that rather than just absorbing information, students actively create new knowledge.

Studies by Santos, J., et al. (2019), innovative pedagogy boosts students' engagement, motivation, and critical thinking, giving them an incentive to stick with their studies and finish their education.

NEED OF THE STUDY

Students may find it difficult to acquire the material if they are not able to comprehend what is being said in the lectures, which can have a very negative impact on their academic performance.

Therefore, developing innovative pedagogy teaching may be quite beneficial for students as they increase their knowledge of the economics subject. The students would be able to grasp the main idea of what is being delivered to them in the class. Additionally, it will encourage student's participation and boost their academic performance.

OBJECTIVES

1. To find out the present status of the performance of 11th commerce students in Economics
2. To identify the difficulties faced by the 11th commerce students in Economics
3. To develop a program of innovative pedagogy to make students understand the lesson.
4. To study the effectiveness of innovative pedagogy of teaching on students' performance.

HYPOTHESIS

NULL HYPOTHESIS - There is no significant difference between the mean score of academic performances of pre-test and post-test conducted to access effectiveness between lecture method and innovative pedagogy on student's performance.

RESEARCH HYPOTHESIS - There is significant difference between the mean score of academic performances of pre-test and post-test conducted to access effectiveness between lecture method and innovative pedagogy on student's performance.

METHODOLOGY

Research Design

Factorial function 2 X 2 pre – test post – test single group research design has been used. This design is a variation of the pre-test and post-test design in which only one set of participants exposed to the intervention is measured on the dependent variable of interest and then remeasured to determine a change or difference from the initial test.

Sampling

The study was conducted in St. Thomas Higher Secondary School. 40 Students of Standard XI (Commerce Stream) enrolled for academic year 2022-23 following Goa Board of Secondary and Higher Secondary Education Syllabus constituted the sample for the study.

For this study, purposive non-probability sampling is used as it is appropriate in this context.

Description of tool

After teaching through lecture method pre-test was taken with self-administered questionnaire (each questionnaire containing 30 items) on selected Economic subject topic. After pre-test, structured teaching program on selected Economics subject topic was administered through innovative pedagogy. Immediately after the teaching programme, post- test was taken with same questionnaire.

Data analysis tools

The collected data has been analyzed using different statistical tools. Data obtained was quantitatively analysed with the help of percentage, mean, standard deviation, t-test and effect size.

DATA ANALYSIS AND INTERPRETATION

Objective 1 - To find out the present status of the performance of 11th commerce students in Economics.

The researcher conducted pre - test to find the present status of the performance of 11th commerce students in Economics subject. The required data was collected with the help of questionnaire to find out their present status of performance. Both Quantitative and Qualitativequestions were asked. Pre - test was taken with self-administered questionnaire (each questionnaire containing 30 items) on selected 11th std Economic subject topic "Liberalisation, Privatisation and Globalisation: An Appraisal".

Table 1 - Observation Table of Pre – test

Particulars	N	Mean	Median	Mode	Std. Deviation
Pre – test	40	11.05	11	15	4.2059

Interpretation - From the above Table 1, it can see that the average marks obtained by the students after lecturemethod is 11.05 which is less then 50% marks in the test.

Finding - It is found that the present status of the performance of 11th commerce students in economics is poor.

Objective 2 - To identify the difficulties faced by the 11th commerce students in Economics.

Data was collected with the help of questionnaire to identify the difficulties being faced by11th standard commerce students in Economics. Their competence was measured according to a standardized Economics test results into different levels which are, Weak: 0- 40, Average: 41- 59, Good: 60 - 84 and Very good: 85– 100.

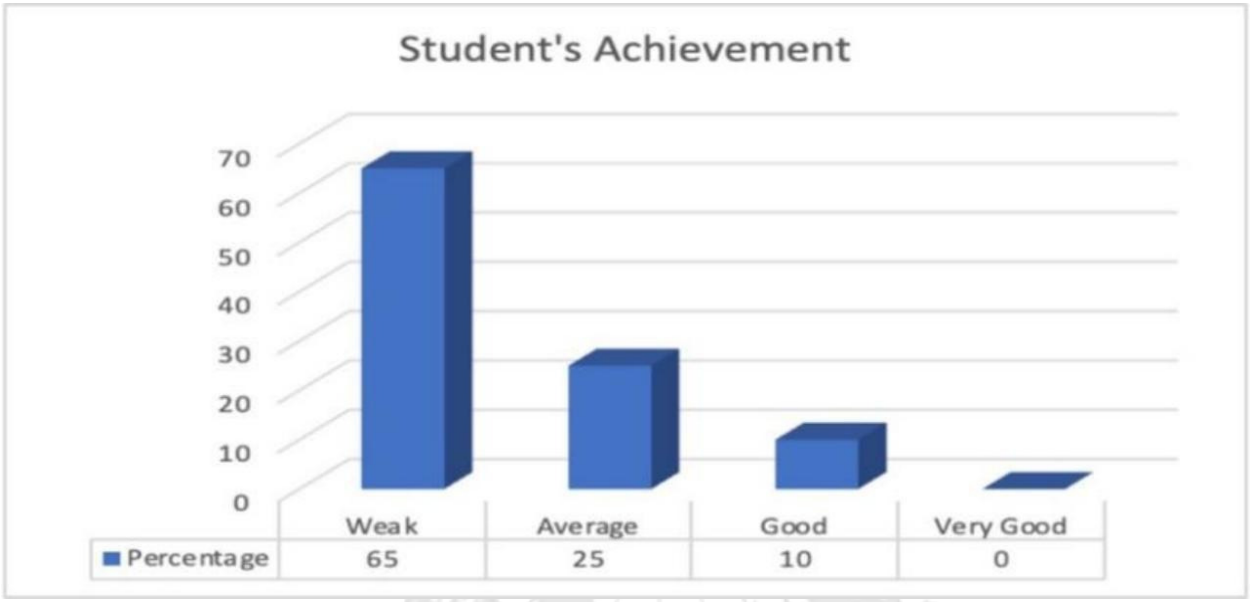

Fig. 1

Interpretation - The experiment chosen topic "Liberalisation, Privatisation and Globalisation: An Appraisal" revealed that the competence level of students through lecture method. Their competence was measured according to a standardized Economics test results into different levels. Fig. 1 shows that majority of the students i.e., 65% scored less then 40% marks in the test were i.e., their performance was weak, 25% students scored average marks between 41 – 59 % whereas a minority i.e.10% students scored between 60%– 84% (Good).

Finding - It was found out that majority of the students had poor and unsatisfactory performance in the test. Specifically the selected topic was about prior to 1991, which is a part of the history as such the students lack the interest to pay attention and understand the topic through lecture method.

Objective 3 - To develop a program of innovative pedagogy to make student understand the lesson

In order to develope innovative pedagogy program in economics subject the following procedure was followed. To achieve this the researcher found out different methodologies which could be adopted in higher secondary schools. While preparing an innovative program researcher studied about different innovative pedagogies, methods and techniques w h i c h can be used in the classroom, to make the process of teaching and learning enjoyable and interactive. Therefore, Case Study, Power-point presentation, problem-solving, and constructivist approach are some of the innovative pedagogies which were incorporated in the teaching program to find out the impact on student's performance.

Objective 4 - To study the effectiveness of innovative pedagogy of teaching on student's performance

Immediately after implementing the teaching program, post-test was taken from the groups with same questionnaire. t-test was used to analyze the data in order to determine the mean difference in scores between pre - test and post -test.

Table 2: Mean and Standard deviation of Pre-test and Post -test

Particulars	N	Mean	Median	Mode	Std. Deviation
Pre – test	40	11.05	11	15	4.21
Post – test	40	21.13	21	21	4.13

Interpretation - The analysis revealed that there was a significant increase in level of knowledge regarding the selected Economics topic by innovative pedagogy method as the mean value increased from 11.05 (pre-test) to 21.13 (post-test). Thus it is clearly evident that innovative pedagogy teaching is more effective than lecture method.

Findings - Thus it is clearly evident that innovative pedagogies teachingis more effective than lecture method.

Null Hypothesis - There is no significant difference between the mean score of academic performances of pre-test and post-test conducted to access effectiveness between lecture method and innovative pedagogy on student's performance.

Table 3: Observation table of t- test

Particulars	N	Mean	Median	Mode	Std. Deviation	R	Obtained t - value	Table t–value	Degree of Freedom	Level of significance	Null Hypothesis
Pre – test	40	11.05	11	15	4.21	0.25	9.6718	2.0227	39	0.05	Rejected
Post – test	40	21.13	21	21	4.13				39		

Interpretation - Table 3 represents the computed t-value. Results show a positive impact of using innovative pedagogy for teaching selected topic in economics subject. It was found that the calculated t- value is greater than that of the table value which is 2.0227. The null hypothesis is rejected because the obtained t- value of is higher than the table value of at 0.05 level of significance indicating that there is significant difference in mean scores of academic performance of 11th commerce students after implementation of innovative pedagogy in teaching economics subject.

Findings - Therefore, it is found that innovative pedagogy in teaching economics subject is accountable for disparity between the mean scores of pre-test and post-test. The study's findings

revealed that student's academic performance increased after teaching through innovative pedagogy.

Table 4 – Observation table of effect size

Group	N	Mean	Std. Deviation	Cohen's d	Hedges' g	Glass' delta
Pre – test	40	11.06	4.21	24.14757	24.14757	2.391924
Post -test	40	21.13	4.13			

Interpretation - Since the observed Cohen's d and Hedges' g is 24.14757 and Glass' delta is 2.391924. The magnitude of the difference between the pre – test and post - test mean scores for both tests is large.

Finding - The use of innovative pedagogies teaching was found to be effective with a larger magnitude of effect size, as per the benchmark proposed by Cohen (1988).

DISCUSSION

The results show that there was significant difference in the mean scores of the students in the pre-test and post-test score**.** According to research by Pye, J. & Sullivan, J., (2001), Ready, G. L., & Ramar. R., (1995), Babu, R., & Vimala, T.S. (2008), and Malik, I. Z., (2011), adopting a multimedia approach with ICT aids students in their learning process. It provides the subject greater realism and improves concept clarity, Kanti, T. According to research by Sajjad, S. (2010) and Carpenter, J.M. (2006), the lecture style was the most productive when combined with discussion, clarification, and questioning. Varadarajan, D. S., (2007), students' verbal fluency, flexibility, originality, elaboration, and overall non-verbal creative thinking improved dramatically as a result of engaging in a variety of creative instructional activities. All of these findings match up with the current research. The results clearly show that the innovative pedagogies teaching was successful in terms of generating a favourable influence on students' learning processes and outcomes. It improved conceptual clarity, self-confidence, class participation, and ability to relate to daily life.

CONCLUSION

It is essential to develop innovative teaching strategies that take the present generation's preferred learning styles and expectations into account while teaching economics to them. The researcher concluded that use of innovative pedagogy has contributed to students' understanding of economics and improved their academic performance.

The findings of the study this show that, the majority of the students significantly improved their academic performance after teaching through innovative pedagogy. The program assisted students in remembering and applying their information. It can be concluded that innovative pedagogy teaching was more effective than the lecture method.

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ROLE OF VISUAL ARTS IN SCHOOL EDUCATION – NEP 2020

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Abstract –

Art is a creative response of a human mind of a certain idea, observation, thought or emotion. Art is categorized into two major domains: visual art and performing art. Visual arts include components of media arts and craft making at schools. Students become more inventive and creative as a result of the integration of visual arts into the classroom. Children who participate in artistic activities develop their mental and imaginative faculties and think creatively. By integrating visual arts into the curriculum, schools cultivate their pupils' personalities. NEP 2020 suggested a 5+3+3+4 school system, considering this school system, researchers tried to suggest different ways to include visual arts at different levels.

Keywords - Visual Arts, Activities, School Education, NEP 2020.

Introduction:

Art

Art is a creative response of a human mind of a certain idea, observation, thought or emotion. The artist communicates his thoughts or ideas using various materials, techniques and forms using certain motor skills or his body. Art is categorized into two major domains: visual art and performing art. The term Art is derived from the Latin word 'Ars' meaning skill or craft.(Marder, 2019)Throughout human evolution, man has been associated with the art of making and designing since the prehistoric period. (Puthenedam, 1970).So in this research paper, we will be working within the context of visual art.

Visual Arts

During the Renaissance period in the West, Art was looked at as a product of a body of knowledge imparting certain skills. So, in European academic traditions, it primarily began for aesthetic experience and was an intellectual inquiry which tried to understand the science of beauty within the different domains of visual art. Back then, Painting, Sculpture and Architecture were known as "major arts" and "minor arts" were referred to as commercial or decorative art styles. (Puthenedam, 1970)

Art according to Indian philosophy was always a blissful and beyond real-world experience. Art represents the ideal and symbolic as against true reality, exalted imitation rather than the imitation of the form itself and a conscious portrayal of the divinity behind all forms, leading towards aesthetic delight or Rasa. In India, Art is known as Kala, meaning performing arts. These were the activities in fine arts and crafts and these according to ancient Indian treatise were sixty-four in number, some of them being vadya- instrument music, geeta- vocal music, natya- drama, nritya- dance, dhatu vad- metallurgy, vastu vidya- the art of engineering and so on. Mastering these was understood as an important basis for the development of a cultured persona. (Puthenedam, 1970)(*Academics*)

Components and Domains of Visual Art

Visual art is one of the major domains that function on the basis of the mode of expression and the tools used. Visual arts include components of media arts and craft making at schools. The different art forms at schools live under the umbrella of creative education are –

Visual arts

1. Two-dimensional (2D) or pictorial

- Painting and Drawing
- collage creation
- Printmaking
- Photography
- Computer graphics

Three dimensional (3D)

- Modeling clay and making pottery
- Sculpting and carving
- Construction

Arts also exist in different functional domains based on the philosophical foundations and common values and expectations for learning art education.

- Arts as a form of communication
- Using the arts to develop one's creativity
- The role of art in culture, history, and as a bridge
- Using the arts to promote wellness
- Arts as a form of civic engagement
- Aesthetic recognition

- Expression of one's thoughts
- The cultural and historical background of the arts
- Aesthetic valuing
- Relationships, connections, and applications (Puthenedam, 1970) (*Academics*)

Importance of Visual Arts Education in School

Students will become more inventive and creative as a result of the integration of visual arts into the classroom. Their personality will also evolve as a result. Children who participate in artistic activities develop their mental and imaginative faculties and think creatively. By integrating visual arts into the curriculum, schools cultivate their pupils' personalities.

Different artistic mediums enable us to express our emotions and talents. Visual arts include things like painting, drawing, sketching, photography, jewellery making, textile design, sculpting, and digital painting. Paintings, sculptures, short films, and documentaries all contribute to the popularity of visual art. A person must practice visual arts consistently for years before they can express their imagination and creativity clearly.(Khan, 2017)

Importance of Visual Arts at Schools –

Helps kids explore their imagination power –Children can better represent their ideas and abilities through the visual arts. It enables children to artistically explore and express their artistic abilities, imagination, and recollections.

Helps with academic tasks - Children's academic performance is impacted by the visual arts as well since they help them become better learners. Since they are quicker at adapting, they pick things up more quickly than kids who aren't as involved in the visual arts.

Improves motor skills -Regular art and craft participants learn how to use various brush types, colour schemes, photography and videography techniques, among other art instruments and methods.

Boosts self-confidence – Visual art is a way to express one's thoughts and imagination in a tangible way. When children create art that is valued, they are optimistic about their work and are inspired to do better. They mature more open about showcasing their artistic abilities because to their self-assurance and tenacity, which help them strengthen their weak areas.

Learning from artists-Children who create visual arts frequently reference the works of well- known artists. They gain new insight into the visual arts as a result. Students' ability to analyse and make decisions is improved through exposure to visual art.

Decision and Determination skills - Students gain analytical, critical, and logical thinking skills through the study of art. This enables them to choose among several options and present their work in a better way.

Focus -Students learn focus and patience through the visual arts. Sometimes, distractions cause students to lose focus while they are studying, but with the aid of visual arts, they can learn organising and planning techniques that will help them maintain their focus.

Coordination skills - Students in art class learn to cooperate by helping each other in their work. They are teamed up and given group objectives for the competition which teaches them teamwork and collaboration

Accountability - With visual arts, kids develop ownership traits because they want people to appreciate their work and they also learn to take criticism well. They get responsibility for their work and their abilities as a whole as a result. (Khan, 2017)

Considering the importance of Art Education, NEP 2020 has also suggested integrating art education at the school level.

The NEP 2020 stated about art integration in education on page 12 (para .7) that:

A cross-curricular instructional strategy known as "art integration" uses numerous facets and expressions of art and culture as the cornerstone for the understanding of concepts in a variety of courses. As a part of the emphasis on experiential learning, art-integrated education will be incorporated into classroom activities in order to foster a positive learning environment as well as to imbue the Indian ethos by incorporating Indian art and culture into the teaching and learning process at all levels. The connections between education and culture will be strengthened by this art-integrated strategy. (Khan, 2023)(Tyler, 2012)

Suggestive visual art activities in 5+3+3+4 school system

Further NEP 2020 suggested a 5+3+3+4 school system, considering this school system, researchers tried to suggest different ways to include visual arts at different levels.

Sr. No.	Stage	Age- Grade	Focus on	Suggested Visual art activities
1.	5 Years in Foundation Stage	3 to 8 years old Anganwadi/pre -school, class 1, class 2, and class 3	• Play- based or activity- based learning • Langua ge develop ment.	1. creating alphabets using clay/ paper mache 2. Drawing alphabets and converting them into relatable forms or image. 3. Painting alphabets.
2.	3 Years in preparatory stage	8 to 11 years old 3rd to 5th grade	• Play, discove ry, activity- based, interacti ve learning . Langua ge and math compet encies.	1. Drawing alphabets and converting them into characters Or by drawing different letters we can tell students to develop various types of characters. 2. developing abstract paintings using various geometrical forms.

3.	3 years in the Middle stage	11 to 14 years old 6th to 8th grade	• critical learning . • science, social science, mathem atics, arts, and humanit ies.	1. Making pastel drawing or painting imitating rock cut carvings or paintings. 2. Drawing Human skull, skeleton, bones or creating a device(puppet) that shows body joint movement. 3. Making a mix media art work/ installation using different types of soil. 4. Exercises on drawing perspective for experiential learning.
4.	4 Years in the Secondary stage	14 to 18 years old 9th to 12thClasses 9 and 10, as well as classes 11 and 12, will be covered in this level.	• critical thinking • subjects from multiple streams.	1. Creating a painting using drip technique to make students aware about the gravitational force. 2. Painting or relief work of evolution of butterfly 3. Making students watch a video on different types of pollution and making them paint from the stills of the video.

(Vishwaroop, 2022)

Conclusion –

Different visual arts activities can be included in a 5+3+3+4 school system as suggested by NEP 2020 to enhance students' learning and critical thinking.

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ASSESSMENT AND ALTERNATE MODERN-DAY PRACTICES

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Abstract-

It is commonly believed that examinations are the true test of merit. Only deserving students pass the examination. All the rest fail. But the facts are not so. An examination is not the true test of merit. It is often seen that those, who do not deserve to pass, get through, while those who deserve to pass, get failed. The reason is that many students use unfair means and manage to pass the examination assessments. The importance of an examination is still sufficiently great. Students, who are really good at studies, maintain their records in all the examinations. All the examinations, passed by a student, taken together, reveal the true merit of that student. There can be no other proper way to judge the merit of each student. Government services are also awarded on the basis of written examinations and viva-voce tests. The examination system of this day has got many defects. In many cases, it is found to be no true test of the student's knowledge. It is always open to unfair means. The student manages to pass an examination and yet remains quite blank. The alternate school-based assessment is hence an extremely valid recommendation for the present system augmentation.

Examination System and School-based Assessment History of Examination in India-

The first millennium and the few centuries preceding it saw the flourishing of higher education at Nalanda, Takshashila University, Ujjain, &Vikramshila Universities. Amongst the subjects taught were Art, Architecture, Painting, Logic, mathematics, Grammar, Philosophy, Astronomy, Literature, Buddhism, Hinduism, Arthashastra (Economics & Politics), Law, and Medicine. Each university specialized in a particular field of study. Takshila specialized in the study of medicine, while Ujjain laid emphasis on astronomy. Being the biggest center, Nalanda handled all branches of knowledge and housed up to 10,000 students at its peak.[53]

Vikramashila Mahavihara, another important center of Buddhist learning in India, was established by King Dharmapala (783 to 820) in response to a supposed decline in the quality of scholarship at Nālandā.

Indigenous education was widespread in India in the 18th century, with a school for every temple, mosque or village in most regions of the country.[55] The subjects taught included Reading, Writing, Arithmetic, Theology, Law, Astronomy, Metaphysics, Ethics, Medical Science and Religion. The schools were attended by student's representative of all classes of society.

- Emperor Great Shun-Upto 2205 BC examined his officers every 3 years and dismissed or promoted them.
- Mesopotamia Hammurabi 200BC the one who excels in Tablet writing will be shining like sun.
- Ancient Athens-emphasis upon athletic development

Modern Concept of Examination-

- "It is an appraisal of ability, achievement, or present status in any respect."
- -Good, The Dictionary of Education-1959
- A test of knowledge acquired, or more generally a means of assessing intellectual capacity or ability.
- -Barnard and Lauwerys, A Handbook of Educational Terms-1967
- **Grading System**
- What are Grades?
- Grades refer to the standardized measurement of a person's ability in subject area or a field. Grades can be assigned in letters for ex. A, B, C, D, E, F, as a range for example4.0 -1.0as descriptors for ex. Excellent, Very Good, Good, Satisfactory, and Needs Improvement. Grades can also be in percentage or GPA.
- **Grading** in education is the process of applying standardized measurements of varying levels of achievement in a course. Another way the grade point average (GPA) can be determined is through extracurricular. Grades can be assigned as letters (generally A through F), as a range (for example 1 to 6), as a percentage of the total number of questions answered correctly, or as a number out of a possible total (for example out of 20 or 100).

There are two views about examination. Some hold that there should be no as few examinations as possible. The promotion may be given to students on the basis of their work in class and on the remarks of the teachers. But this does not seem good. It is easy to influence the teacher, who are local men, and can be easily persuaded to give do not deserve promotion; can go up to the next higher class by using a little influence. The other view seems to be better. According to this view, there should be regular weekly tests in every subject and quarterly examination. The final result should be based on the results of all weekly tests and the result of all quarterly examinations. This suggestion is put forward with the view that students become regular in their studies and acquire a thorough knowledge of the subject. The second thing is that when there will be a May test and examination, all having equal value there should not be so much of a conclusion and worry at the last examination. The labor and the interest of the students will get divided equally among all the examinations.

An examination is not necessarily evil, as the students generally think. The examination enables the student to judge their merits and put in more labor, when necessary. It also enables

them to rise higher and higher education. So instead of calling examination an evil, it would be better to call it a blessing in disguise.

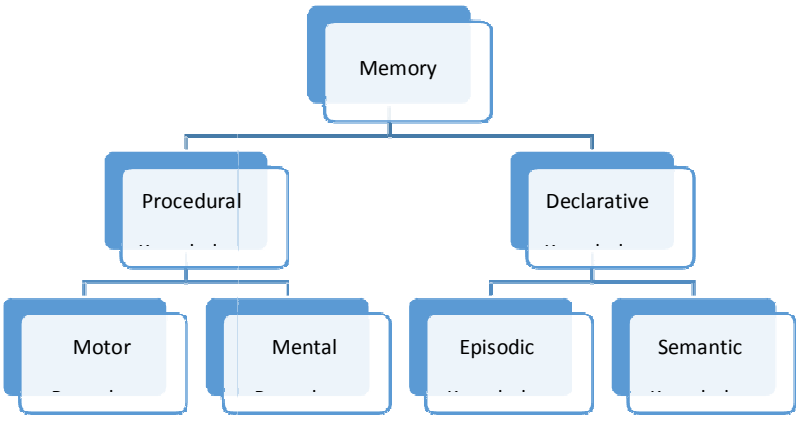
Table No. 1- Positive and Negative Aspects of Examination

Negative Points		Positive Points	
Students suicide	Education is taken for granted	Students get motivated to study	Inclusive classrooms
Parents' Excessive expectations from children	The quality of education	Students' evaluation is continuous	Students get motivated for hard work
Cutthroat Competition	Theory oriented examination	Creates interest in subject	Multiple intelligence can be checked
Students mental face fatigue.	Mark studies oriented	Diagnosis of understanding be can done	Students can eer with the help of
Depression	Job oriented parents and society	Makes students to study regularly	Parentsknow wards study status.
No mechanism of taking	Encourages rote learning	Progress can be noted down	Helps teachers to give remedial teaching to various categories of st.

Impact of the Prevailing Examination System on the Learners-

- The present system of xam which tests only ability of the students to memorise rather than their critical ability.

Figure No. 1- Aspects of Memory



5. De-linking school-based Alternate Practices Assessment from Examinations: Some Possibilities and

Shortcomings of Traditional External Examination-

1. It is a one-shot examination at the end of a year at the terminal stage of schooling.
2. It mainly evaluates only the scholastic aspects of learning of the students.
3. It does not evaluate all the abilities of the children. On the basis of marks obtained in written examination, the students are declared pass or fail and further classified into predetermined divisions.
4. Pass and fail system causes frustration and is inhumane because the failed candidates come to feel that they are good for nothing
5. Co-scholastic areas are almost totally ignored and have no place in the currently prevalent scheme of education and evaluation.
6. The practice of testing of untaught content also reflects poor learning achievement.
7. Only limited techniques of evaluation without the potential for judging a student are being used.
8. The aim of evaluation is to improve learner's quality which is not served by external examination.
9. The current practice of awarding marks suffers from many discrepancies due to variety of errors.
10. The varied ranges of obtained scores of students in different subjects create the problem in declaring reliable results.
11. Analysis and interpretation of test results is not done in a scientific way.

School based Assessment is held at school level unlike external examination conducted by the Boards of School Education. This is done by the teachers according to the schedule developed by the school and guidelines given by the Board. Though this evaluation has been done at school level all along, certain shortcomings have crept into this system. These shortcomings can be attributed to various factors. The basic factor is the misconception of teachers regarding the place of evaluation and its importance in the educational process. The other factor has been the imitation of the practice of external examination which is generally held at the end of the session.

In the School Based System of assessment, the focus on the purpose of assessment has changed. Now, it includes

- readiness testing,
- screening of development,
- evaluation of performance in cognitive, affective and psychomotor domains School Based Assessment is done more frequently, systematically and effectively.

School Based Assessment has following characteristics:

- It is broader, more comprehensive and continuous than traditional system.
- Aims primarily to help learners for systematic learning and development.
- Takes care of the needs of the learner as responsible citizens of the future.
- Is more transparent, futuristic and provides more scope for association among learners, teachers and parents.

It also provides opportunities to teachers to know the following about their learners:

- What they learn?
- How they learn?
- What type of difficulties limitations they face in realising together?
- What do the children think?
- What do the children feel?
- What are their interests and dispositions?

School Based Continuous and Comprehensive Assessment system should be established to:

1. reduce stress on children
2. make evaluation comprehensive and regular
3. provide space for the teacher for creative teaching
4. provide a tool of diagnosis and remediation
5. produce learners with greater skills

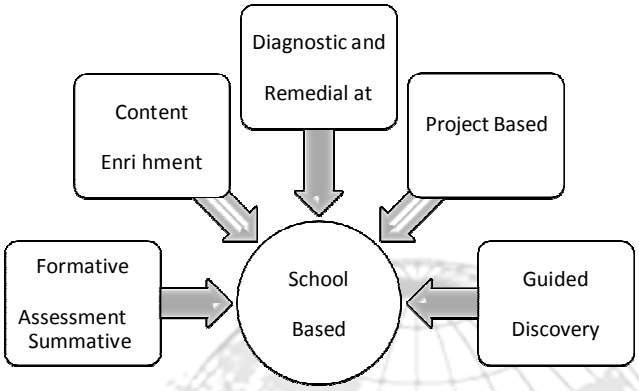
As per recommended in Position Paper on Aims of Education - NCF 2005, NCERT

Implementing School Based Assessment would mean:

1. Elimination of chance element and subjectivity (as far as possible), de-emphasis of memorization, encouraging Comprehensive evaluation incorporating both scholastic and co-scholastic aspects of learners' development.
2. Continuous evaluation spread over the total span of the instructional time as an integral built-in aspect of the total teaching-learning process.
3. Functional and meaningful declaration of results for effective use by teachers, students, parents and society.
4. Wider uses of test results for purposes not merely of the assessment of levels of pupils' achievements and proficiencies, but mainly for its improvement, through diagnosis and remedial/enrichment programs.
5. Improvements in the mechanics of conducting examinations for realizing a number of other allied purposes
6. Introduction of concomitant changes in instructional materials and methodology.
7. Introduction of the semester system from the secondary stage onwards.

8. The use of grades in place of marks in determining and declaring the level of pupil performance and proficiency.

Figure No. 2- **Various Alternative Practices for Assessment**



Dimensions and levels of learning to be assessed Contexts of assessment: Subject- Related

How should we assess?

Some General Methods of Assessment are-

- True –False Item
- Multiple Choice
- Completion
- Short Answer
- Essay
- Practical Exam
- Papers/Reports
- Projects
- Questionnaires
- Checklist
- Peer Rating
- Self-Rating
- Journal
- Portfolio
- Observations
- Discussions
- Interviews
- Inventories

Sr. No.	Assessment Criteria	What is to be Assessed?	Tools of Assessment
1.	Retention/recall of facts and concepts	Content knowledge, Concepts, Facts, Principles, Theory, principles.	• Oral Test for Tables, Chemical Formulae, Definitions, and Mathematical Formulae • Quick Response Test, Rapid Fire Round in Quiz, • Fill in the blanks • What, When, Who, Where type of questions • Yes/No, True/False, Odd Man Out Labeling Diagrams • Viva in Practical
2.	Application of specific skills	• Skills such as computing, drawing, calculating, performing experiments. • Abilities related to performances	• Practical Exams • Geometry • Computer Practical • SUPW • Projects and Models
3.	Problem-solving	The problems arising out of day to day cases and also mentioned in the syllabus.	• Case Study • Problem Solving Method • Give questions related to practical life like situations
4.	Applying learning to diverse situations	Application of the learnt content to the life like situations. Ability to apply content knowledge.	• Projects • Field Visits • Assignments
5.	Abstraction of ideas from experiences	Ability to apply Dispositions and attitudes.	• Role Play • Dramatization • Guided Discovery • Field Visit • Exposure Visit • Visit to Museum, Botanical Garden, Zoological Garden, Archaeological Site, Aquarium, Planetarium.
6.	Seeing links and relationships	Analysing the content and forming generalized concepts	• Inductive- Deductive Approach • Generalization of the knowledge gained
7.	Drawing inferences	Drawing out the inferences from the calculations and experiments	• Practical • Projects • Assignment
8.	Analysis	Analysing the logic	• Experimenting • Logical Thinking Questions • Mental Ability Questions • Reasoning Questions
9.	Reflection	Ability to reflect on the concepts those is understood and reflects on the content.	• Feedback • Suggestion • Reflecting on Assignments • Case Study

Table No. 2 - Dimensions and levels of learning to be assessed Contexts of assessment: Subject-Related

Dimensions and levels of learning to be assessed Contexts of assessment: Learner- Related

Sr. No.	Assessment Criteria	What is to be Assessed?	Tools of Assessment
1.	Collaborative Participation	• Whether the student shares material, ideas. • Open minded nature. • Friendly, • Responsible, • Does assigned work or task with the team	• Sociometry • Observation
2.	Initiative	• Promptness in taking teacher's responsibility • Tasks such as Monitor ship of the class • Teacher needs to inspire the students for more and more tasks so that their overall personality develops • If any student is doing the task assigned very properly, the steacher needs to motivate by reinforcement.	• Rating scale
3.	Creativity	• By arranging various competitions such as Drawing, Poster Making, Slogan Writing, Mehandi, Flower Decoration, Best out of Waste • There should be a creative corner in the class • Students should be motivated for writing, essays, poems, short stories, etc. • Projects given in the class should have one of the criteria as Creativity • Magazine needs to be published every year. • Exhibition needs to be arranged of the student's creativity.	• Rating scale • Observation
4.	Self-Esteem	• Positive talk (Why we love yourself) • Write an essay on I, me and myself. • Write about your strengths and weaknesses • Quality Analysis of students • Introducing yourself with an adjective that starts with the letter from your name. • Does assigned work or task with the team	• Questionnaire on self-esteem can be prepared by the teacher • Student council needs to be maintained.
5.	Motivation	• By reinforcement teacher can motivate • Appreciation of students in class, in Assembly, Parent Teacher Meet, • Motivation for social issues like Afforestation, Use of alternate energy resources, Contribution of Great Freedom Fighters, etc. • By assessing assembly presentations, projects	• Rating scale • Check List

Table No. 3- Dimensions and levels of learning to be assessed Contexts of assessment:

Learner-Related

Conclusion-0.2 million students studying in 20 odd universities and 500 colleges in 1950s to the present day about 20 million students studying in 627 universities and about 35,000 colleges- result- lost quality of education.Vast majority of average students. Between the ages of 18 and 23, India has a gross enrolment rate of 18%. While the world average is 26%, it is 40% in developed countries.But the quality of education is lost.Our examination compels students to prepare for those topics or for which students are not interested. Great minds cannot be tested by the prevailing examination system that is defective. The term examination makes a student unnecessarily nervous.Examinations are thought as a test of the ignorance of students. But it is not justifiable. The present system of examination encourages the habit of cramming.The examination encourages idleness, copying and carelessness.Thus the School Based Assessment is the best option for the present day situation. The assessment can be student centric or subject centric. Accordingly, the tools for assessment can be varied. The above research paper gives an input for augmenting assessment in Higher Education effectively.

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PEOR –TEACHING METHOD OF SCIENCE IN CONTEXT OF NEP 2020

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Abstract

The future of the country and the fate of its citizens are determined by education, which is a key factor in the construction of a nation. In this science acts as the building block. Science is a curiosity to enable natural things. Learning science benefits the nation in various perspectives and helps students to develop the key life skills, scientific thinking, and observation and to collect evidences. The New Education Policy 2020 provides scope for learning and teaching science in an advanced way. Students are hands-on learners and that is why learning science through experiments plays a vital role. Demonstration is an important part of science teaching. PEOR (Predict, Explain, Observe, and React) Method to teach science is one of the demonstration approach. PEOR helps students to concentrate and understand the scientific concept in a better way. PEOR Method can be used at middle and secondary level of 5 + 3 + 3 + 4 school system as recommended by NEP 2020. Therefore this will improve the pedagogy of science.

Keywords: PEOR, Teaching method, Science, NEP 2020

Introduction

Citizens of a particular country are responsible for the progress, prosperity, and happiness of the nation. So for well functioning of the country, the educational base should be strong and when a nation's education policies are honourable and ethical then only its citizens will be honourable, leading the nation towards progress, development and happiness. Today as a result of the advancement of science and technology, the world is changing rapidly. So the Indian government introduced a new National Education policy in 2020,as the previous National Education Policy of India - 1986 is not much effective in current times. (Kumar et al., 2022).

Today science and technology is continuously upgrading. Science simply doesn't mean to sit and hope for things to take place, instead an individual needs to find out the reasons behind the cause. Science is a kind of trial and error method. Sometimes the worked experiment succeed while there are chances for it's failure too. But definitely this adds to the knowledge of an individual and failure of an experiment gives a new proceeding to successful trial.

Learning science helps students to develop the key life skills, scientific thinking, and observation to collect evidences. NEP 2020 recommends various innovative methods to teach and

learn science. Students are hands-on learners and that is why learning science through experiments plays a vital role. Teaching science to the youngsters help them to be patient and persistent adults. Finding the answers to their many "why" questions encourages kids to learn more and establish their own opinions rather than merely accepting those of others. According to Melyssa Ferro, a science teacher, Walden University alumna, and Idaho's 2016 State Teacher of the Year, "engaging students in science content requires educators to help students see themselves as scientists and engineers instead of passively observing other people doing the work of science." Instead of just reading about science in a textbook, opportunities must be provided for students to observe it in action. Although having complex textbooks is vital, students' chances of success are limited if they can't understand the material and teachers aren't properly delivering it.

Therefore making students learn science by giving a hands-on experience or by visualising things will enhance the understanding by providing real world context. It will also encourage active learning and develop interest in the scientific concepts by developing scientific attitude from the initial stage of life. But many a times due to time limit, experiments are time consuming and so teacher will have to use scientific demonstration and this will help learners to focus on science that is occurring right in front of their eyes with more interest. Therefore this paper discusses about 'PEOR' (Predict, Explain, Observe, React) method which has a demonstration approach.

PEOR is an extended form of POE Method (Predict Observe and Explain) used in science education.POE is emerged from an assessment tool known as DOE (Demonstration, Observation, Explanation). DOE was an assessment tool devised by Champagne, Klopfer and Anderson (1980) at a time when constructivist-informed teaching approaches started emerging such as Learning in Science Project (LISP) and the Children's Learning in Science (CLIS) project materials were first starting to appear.

Later POE became an improved assessment version of DOE. After POE was further improvised and extended from an assessment tool to PEOR teaching method.

The PEOR method of teaching science is a student-centred approach that encourages active learning and critical thinking. In this method, students make predictions before observing an experiment, then observe and collect data to compare with their predictions. They then explain their observations and make connections to scientific concepts, followed by a final reflection on what was learned. It is suggested to use slightly different yet scientifically correct demonstration to preserve the enthusiasm of the learner. This technique is designed to help students understand scientific concepts and develop skills in observing, analysing and interpreting data. The PEOR method has been widely adopted by science educators as an effective tool for enhancing student engagement and learning outcomes.

The following is a breakdown of each step of the PEOR method:

- **Predict**: In this step, teacher requests students to predict what they are expected to observe or what will be the conclusion of an experiment or activity with a justification. This encourages them to think critically about the scientific concepts being explored and to consider what they already know about the topic. It is necessary for the teacher to learn students' mentality and not always expect a right answer. Then only students' will predict and express their views about the topic and then this predictions will provide the teacher with the 'diagnostic' information.
- **Explain**: In this step teacher asks students to give reason behind their prediction of the topic. This phase will reveal to the teacher that the learner holds the common non-scientific conception and therefore teacher should not expect to get right explanation only and then only the students will be encouraged to think behind their predictions and this encourages them to engage with the demonstration. This helps them to understand the underlying principles of the experiment.
- **Observe**: In this step the students are made to observe the demonstration and collect data, using their senses to make detailed observations. Sometimes teacher may have to notice that her observation and the observation of students may have a huge a difference and so teacher needs to ask questions to get students on the track of thinking scientifically. Here tools from laboratories such as microscopes, magnifying glasses or sensors are used. At this level presentations, demonstrations or experiments are made about the event or concept presented to the students.
- **Reflect/ React**: In the final step, students reflect or react on their prediction after understanding the observation.This process benefits students to rethink their ideas about science and help to solve any misconceptions or difficulties they had before the experiment. This benefits students to solidify their understanding of scientific concepts and to correlate it to real-world examples.

Importance of PEOR Method

- PEOR is an effective method because it actively involves students in the scientific process.
- It encourages critical thinking and creates an enthusiasm to learn the topic.
- It assists students as well as teachers to simplify the tough topics by not making the lecture a tedious one.
- It helps to develop important skills in observation, data analysis, and interpretation.
- It develops habit of accepting truth after observing and think before saying.
- It provides concrete experience of learning.
- Learner learns to correlate between things and justify their answers

The Appropriate activities performed in these stages, also provide comprehensive information about students' concept structuring processes (Atasoy, 2002)

Application of PEOR method in science subject in context of NEP 2020 school structure

National Education Policy 2020 in India is a broad spectrum that aims to fill the void in education standard in the country. One of the significant components of this is the replacement of the traditional 10+2 education system with the 5+3+3+4 education system.

The four stages are:

Stage number	Stages	Age	Grade
1st	Foundation stage	3 to 8 years	Preschool, 1st , 2nd
2nd	Preparatory stage	8 to 11 years	3rd to 5th
3rd	Middle stage	11 to 14 years	6th to 8th
4th	Secondary stage	14 to 18 years	9th to 12th

Application of PEOR method in science subject in 5+3+3+4 structure as per NEP 2020

Stage	Application of PEOR method
Foundation stage	This stage will focus on activity based learning. Learners at this stage shall not be mentally and cognitively developed to predict and draw the conclusion. Therefore PEOR shall not be applicable at this stage
Preparatory stage	This stage emphasis shall be on imparting basic numerical, literacy skills and languages. So this stage will act as the shape building stage and there shall be very limited scope for higher order of thinking. Prediction is at creating level of cognitive domain; therefore teacher may find difficulty to apply PEOR at this level.
Middle stage	At this stage students will be gradually introduced to higher order of thinking and also there will be introduction of science as school subject. Science topics like Light, Magnets, cells, acids bases and Salt etc. Where there shall be scope for teacher to demonstrate, PEOR method can be employed in teaching.
Secondary stage	At this stage students will be introduced to different branches of science. There will be emphasis on critical thinking and agility in the mental process, therefore students can predict and can explain their observations, which makes this stage perfect level to implement the PEOR method.

Conclusion

PEOR method can be used to teach science subject at Middle and Secondary stage of school system as suggested by NEP 2020. This will improve pedagogy of science subject.

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THE EFFECT OF ASSESSMENT FOR LEARNING ON STUDENTS' ENGLISH FOR SPECIFIC PURPOSES ACHIEVEMENT.

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Abstract :

The purpose of this study is to determine the influence of evaluation for learning on the performance of a group of Sudanese pre-arts students in English for Specific Purposes (ESP). The research also seeks to ascertain students' perceptions and attitudes towards this sort of assessment. The study's sample consists of 53 participants from Goa institutions' pre- Arts programmes. These pupils are divided into two groups: experimental and control. Students in the experimental group are taught ESP content in accordance with assessment for learning concepts and approaches, whereas students in the control group are taught the same material using traditional summative evaluation procedures. The experiment will last one term, or 16 weeks.The experimental group instructors is put through a rigorous training session on how to utilise evaluation for learning methodologies in the classroom. At the end of the semester, the two groups take a final exam that is open to all Pre-Arts students. A comparison of the students' scores reveals a considerable difference in favour of the experimental group between the two groups. A questionnaire and interviews are used to measure students' attitudes towards evaluation for learning. The qualitative and quantitative analyses of the students' responses demonstrate that they are enthusiastic about this method of assessment. The study concludes with a set of recommendations and suggestions for improving evaluation for learning practise and making it more effective in a Sudanese context.

Key words – Assessment, Learning evaluation, Achievement etc. Introduction

Many educators have traditionally considered assessment as a means of monitoring learning ultimate results, which is mostly realised through what is known as summative evaluation (Black &William, 1998). However, educators have recently begun to broaden their assessment scope to include not only students' learning outcomes at the conclusion of a certain period in order to determine who passes or fails, but also to improve learning by modifying classroom instruction (Rabinowitz, 2010). This is precisely what assessment for learning achieves, as it tries to improve teaching quality and use assessment results to adjust students' learning.To eliminate needless delays in rectifying students' errors, assessment for learning is centred on providing immediate and detailed feedback after each learning stage. It is proposed that assessment should not be a one-time event in order for such evaluation to be most beneficial. Rather, it should be a continual act that

drives the teaching-learning process by providing timely feedback. It is widely accepted that the impact of feedback is strengthened if and only if it is immediate and properly explained in order to lead the learning process and correct potential flaws (O'Malley & Pierce, 1996).

Language teachers have long recognised the value of feedback in language learning. In reality, feedback promotes kids in developing a sense of responsibility and a self- monitoring mechanism. In fact, the students are immediately engaged in the proper activity of self-assessment and self-correction.

The above example demonstrates the distinction between assessment for learning, which is designed to help the learning process, and typical summative assessment, which is primarily During the second term of the academic year 2020-2021, this project will attempt to investigate the efficacy of assessment for learning in enhancing the performance of a group of pre-Arts Sudanese students learning English for Specific Purposes (ESP). The outcomes of this study could be used to improve the process of modernising educational practise and aid in the learning of English, a language that is crucial in determining students' future performance in their respective specialisations .focused with assessing learning outcomes.

Statement of the Problem:-

Learners at Goa College, where this study is being done, attend an intense ESP course during the second term of their first academic year. However, the learning outcomes at the end of that course were not always sufficient. According to reports, a substantial number of students sadly fail their final exam each year, and for those who pass, they begin their undergraduate studies with a low level of English proficiency, which has a severe impact on students' performance in their primary specialisations (Aslam, 2015). Summative assessment, which is a one-time exercise, is thought to be one of the key sources of such depressing findings because it never accurately or timely diagnoses students' learning problems. This issue must be handled more carefully by employing more appropriate assessment processes. The researcher will attempt to explore the influence of assessment for learning on a group of pre-arts students' achievement in English for Specific Purposes in this study. If the efficacy of this sort of assessment is demonstrated, it can be promoted as an alternative to standard summative evaluation procedures. In addition, the study will seek to identify learners' views towards this method of assessment.

Need for the Study:-

Given the importance of English as an international language and as a medium of teaching in most scientific colleges in Goa, there is a pressing need for this language among Goa arts students. Many scholars believe that assessment for learning has the most positive impact on students' progress (Black &William, 1998). At the moment, it is necessary to determine whether

the introduction of such an evaluation approach, with its immediate feedback, can improve the learning process and make the English language learning experience more enjoyable and fruitful in a Goa environment.

Question of the study:-

1. To what extent does assessment for learning influence ESP learners' English achievement?
2. What are the learners' views towards learning assessment**?**

Hypotheses of the study:-

1. Assessment for learning has no effect on ESP learners' English achievement.
2. Learners have negative attitudes towards learning assessment and related procedures.

Literature view:-

1. **AssessmentforLearning:ADefinition**

Assessment for learning, also known as constructive assessment, is a procedure used by teachers and students during instruction to provide feedback in order to change current teaching and learning in order to increase students' attainment of planned instructional goals (Sadler, 1989). According to Pophan (2008), assessment for learning is a deliberate process in which teachers utilise evidence of students' status to adapt their ongoing instructional processes or students use evidence of students' status to adjust their present learning tactics.

While instruction and learning are taking place, assessment for learning or for constructive goals is designed to aid learning. It is used to bridge the gap between learners' current status and their desired learning outcomes (Heritage, 2012).

Summative evaluation is frequently compared with assessment for learning. Assessment for learning varies from summative assessment in that the latter is focused with summing up or summarising students' achievement status and is aimed at reporting students' status at the end of a term of study for certification reasons (Sadler, 1989). Summative evaluation is also claimed to be essentially passive and does not generally have an immediate impact on learning, despite the fact that it frequently influences decisions that have substantial educational and personal consequences for students (Sadler, 1989).

The summative assessment function determines if a student has acquired a certain level of competency following a specific period of learning, such as a unit, a year of study, or even a 12-year period of schooling (NRC, 2001). Historically, educators have focused on summative evaluation to assess students' learning outcomes, with little consideration for other parts of the learning process (Herman, 2013). Today, however, there is a growing understanding of the shortcomings of a summative evaluation of learning, as well as widespread acceptance and

evidence of the value of assessment for learning.

It is commonly acknowledged that evaluation for learning can play a significant role in supporting students, all students, to achieve high academic standards (Herman, 2013).Umar (2013) explains the benefits of this assessment strategy by stating that, rather of looking back to judge what has been learnt, evaluation for learning looks forward.

Assessment for learning entails the continuous gathering and use of assessment results throughout instruction in order to determine where students are in relation to the desired goals. The data is then used to take immediate measures, such as changing teaching and learning methods to help students get where they need to go (Herman, 2013). Achieve Inc. (2013) clarifies this point by stating that assessment for learning "draws on information gathered in the assessment process to identify learning needs and adjust teaching" (p. 7).

Assessment for learning is now considered as an integrated aspect of the teaching and learning process, rather than as a distinct activity that occurs after a teaching phase (Achieve Inc, 2013). Assessment for learning entails classroom interaction, questioning, scheduled classroom activities, and feedback aimed at assisting students in closing learning gaps. Through self- and peer-evaluation, students are also actively involved in the assessment process (Sadler, 1989). Other sorts of assessments and school administration data could also be used to identify learning requirements and reformulate teaching strategies (Black & William, 1999).

According to William and Leahy (2007), an assessment can only be referred to as assessment for learning if "information from the assessment is fed back within the system, and actually used to improve the performance of the system in some way." (p. 31). According to Sheppard (2000), what makes this assessment effective is that "it is immediately used to make adjustment so as to form new learning" (p. 281).

- **How to Collect Data for Assessment for Learning?**

There are numerous methods for gathering data for this type of assessment. According to Gryphon (2007), proof of learning may be gathered through three observable sorts of behaviour: what a person says, what a person writes, or what a person does. This demonstrates that data can be acquired through a number of approaches that are primarily planned before instruction during the teaching and learning process. Data can also be collected on the fly through observations of students' behaviour, written assignments, book presentations, teacher-student exchanges, and peer interactions. However, data can be obtained initially via formal procedures, such as administering examinations particularly designed to improve learning.

Feedback in Assessment for Learning

According to Sadler (1989), feedback is a critical component in learning assessment. He sees feedback as an endeavour to provide information to students in order to bridge the gap between their current learning status and intended learning goals. However, Sadler (1989) admits

that "information is not feedback in and of itself, but only becomes so when it is actively used to close the gap." According to Heritage (2013), while learning is taking place, the teacher receives feedback through assessment evidence and uses the knowledge to alter instruction and provide feedback to students on how they can progress their learning forward. The teachers' methodological response and direct feedback are thus made dependant on the evidence collected.To address feedback through marking, teachers should be aware of research findings that show that while feedback through comments can improve students' performance, giving grades or marks has a negative impact because students frequently ignore comments when marks are given (Butler, 1988; Heritage, 2013; Gryphon 2007).

- **Assessment for Learning Strategies**

Several researchers have recommended several techniques for doing assessment for learning. However, Sadler's (1989) procedures for this form of assessment appear to be the most prevalent. These tactics are mirrored in the concepts that comprise "Assessment for Constructive or Formative Purposes." It is a practise that aims to meet students' requirements for increased motivation and achievement by including them in their own learning from the start. Umar (2013), who develops, eventually endorses these concepts.

They should ask themselves the following questions:

1. Where are you attempting to go? (Determine and convey learning and performance objectives).
2. Where are you right now? (Help the kids to self-assess their current level of understanding).
3. How are you going to get there? (Assist students in developing goals and strategies).

These questions are then rephrased from the students' perspective, as follows: What am I doing? What am I doing now? And how can I bridge the gap?

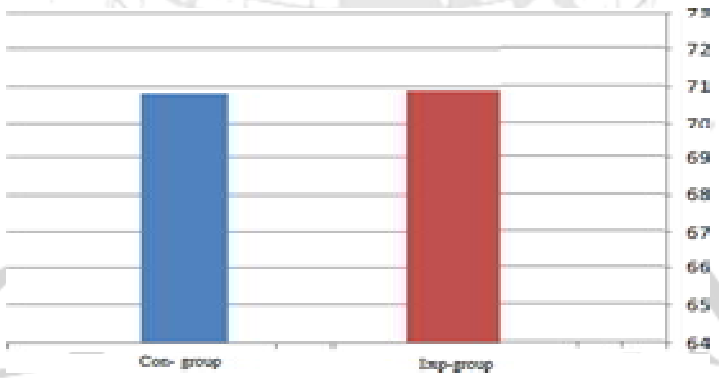
Methodology

The subjects of this study are pre-arts students from two classes (Class 1 and Class 2) at Goa College. Subjects are first assigned to groups based on their achievement on a Placement Test. Actually, the two classes have similar degrees of proficiency. They are categorised as English beginners based on a locally created Proficiency Test administered at the start of the first semester of the school year 2020-2021. The control group consists of 26 pupils, while the experimental group consists of 27 students. They are all Sudanese and range in age from 16.9 to 17.2 years old at the time of the experiment.They have all studied English for at least six years in school and one term (16 weeks) at college. One of the two classes is chosen at random to represent the experimental group in this study. It is the second year, and the other class has been designated to represent the control group. A proficiency exam is conducted soon before the experiment to ensure that the two groups, the experimental and control groups, are on equal footing.

The result of this test indicates that the two groups, i.e., the control and the experimental group are of similar levels in general English. This result is reflected in the table and the graph below:

Table1.Scoresofthecontrolandexperimentalgroupbeforeexperiment

	Controlgroup	Experimentalgroup
N	26	27
Mean	70.8%	70.9%
Median	72	71
Mode	72	67
Std.Deviation	4.42	5.42
Range	16	21
Minimum	62	60
Maximum	78	81



Graph1. The level of performance of the control and the experimental experiment group before

According to the above table and graph, the experimental group's mean score is (70.9%), whereas the control groups is (70.8%). The mode for the control and experimental groups is (72% and 67%, respectively). According to these measures of central tendency, there appears to be no difference in the level of performance between the two groups, but to be sure, a t-test is performed to validate this finding, and the following result is revealed:

Table2.T-testfordifferencebetweencontroland experimental-group

Groups	N	M	SD	T-Value	Df	α-Co.eff.	Sign.level 0.05	Result
Cont.Group	26	70.8	4.42	0.01	48	.917	insignificant	There is no significant differences between the two groups
Exp.Groups	27	70.9	5.42					

Table-2.Shows the result of a t-test which verifies that the difference between the two groups is not significant. The t-value is found to be (0.01) which is quite insignificant at the level of (0. 05). This result can be cited to prove that the control and the experimental group are really standing on equal footing before the treatment began.

- **The setting and Instructors' Training:**

The research will be carried out during the second semester of the 2020-21 school year. After completing the General English Language Course in the first semester, students often begin their English for Specific Purposes (ESP) programme during this semester. Two instructors with comparable qualifications are appointed to teach the experimental and control groups. The experimental group instructor, on the other hand, receives comprehensive instruction on how to apply evaluation for learning approaches while teaching ESP. The five-day training course is scheduled between the first and second semesters.

The research will start in the first week of the second semester of 2020-21. Classes are outfitted with teaching tools and laptop computers with loud speakers. Each session is intended for 30 or more people. The lecturer has a white board and a control desk, while pupils have regular chairs and desks.

- **Procedure:-**

The tools used for implementing assessment for learning include learning portfolios, classroom bservations, after class exercises and quizzes, and learning notebooks. Learning notebooks are required to be hande dinoncea week and their content normally involves a summary of a week's study, a plan for the next week and suggestions to the teacher. After marking which does not involve any grades, the teacher returns the notebooks to the students. Classroom observations are conducted by the instructor who regularly records the students' progress towards achieving the set objectives, their participation in class activities, and the problems and difficulties that face them in classroom.Then he ommunicates with the students in time for solving the problems observed in class. Group work is particularly encouraged throughout this experiment

and quizzes are carried out after the teaching of each unit to examine students'mastery of the course content.

All diagnostic data and insights to modify the teaching-learning processes are generated from the range of activities shown above. These may also include classroom questioning and feedback.

- **Final Stage of the Experiment:-**The students take their final test after a semester of teaching experimentation in which assessment for learning concepts are completely implemented and applied with the experimental group according to the method outlined above. This was created by a group of seasoned English Department staff members. The exam is an achievement examination designed to assess students' abilities in listening, grammar, vocabulary, reading, and writing. Because the exam questions are closely tied to the ESP material presented in English, the test content validity is closely monitored and ensured. The test's face-validity is acquired when the test draught is initially handed over and evaluated by three senior EFL specialists who affirm the test's fitness for what it claims to test.

The control group students are taught the identical content by an equally trained instructor, but without the use of evaluation for learning approaches.

Students in the experimental group are expected to complete a questionnaire at the end of the experimental instruction time. The questionnaire's questions are all designed to elicit information about the individuals' attitudes and ideas concerning evaluation for learning.

- **Students' Responses to an Interview (Qualitative Analysis) :-** The above questionnaire is complemented by a series of interviews with experimental group students in order to create more specific and thorough information about the students' impressions and attitudes towards assessment for learning. The qualitative reactions of students to these interviews are summarized below:

When questioned about the benefits of evaluation for learning, one student stated that it has helped him recognize how much he needs to develop. Not only how much, but also what he should change. Another student adds that this style of assessment enables them to follow their development and see how far they have come.

He agrees that it also informs them of their progress and corrects them if they make a mistake. "Assessment for learning allows me to see areas where I need to improve and work on for my language study plan," says a third student. It allows me to think about how to respond to circumstances in my field of specialization, medicine, and to be efficient in my queries and replies."

A fourth student considers the diversity of activities given by assessment for learning, stating that the many tactics utilized by the teacher in presenting the lesson make the learning experience highly engaging and colorful."I didn't feel bored or frustrated," the pupil stated.

One candidate praises thecommends the space of freedom offered to them during the presentation of each lesson saying: “This type of assessment allows us more freedom. We are left to progress at our own pace”.

Other students show a positive attitude towards the assessment for learning because they believe it has helped them to improve their performance in English, a subject that is so crucial for their future study of medicine which is mainly taught through an English medium. Furthermore, this group of students claims that this form of assessment has improved their learning strategies and motivations to do better in English.

Discussion

Assessment for learning involves a variety of practical techniques, beginning with teacher’s planning; sharing learning goals with students; marking, feedback, evaluations and target setting. Each strategy satisfies a particular purpose of assessment. These techniques ensure that learning outcomes are clear and the next steps in short-term planning are accurately passed over to students. This could guarantee that the learners and teacher focus on the purpose of the task and they are both aware of learning intentions. Assessment for learning strategies, therefore, allows the teacher to track and to diagnose the progress students have made and to provide targets and records of students’ learning needs. In other words, it is ensured that teachers know where students exactly are in their learning, in order that they can plan where their students need to go next.

Through effective questioning and careful observation, the teacher can assess the students’ understanding and can move them forward in their learning. Students can only achieve a learning goal if they understand that goal and can assess what they need to do to achieve it. So self-assessment is essential to learning.

Assessment for learning that explicitly aims to promote learning encourages ways of evaluating performance, feeding performance results back to students with strategies to close the gap between their actual level ofperformance and the intended learning outcome.

Conclusion

Assessment is a critical component of any educational process. Summative evaluations are currently the most popular type of assessment at universities. Summative assessments are used to determine what students have learned at the end of a course in order to progress to the next level, to ensure they have satisfied the requirements for a degree, or to select students to attend a specific college. However, assessment for learning or constructive assessment has lately developed as a more successful evaluation technique in the educational sector. Assessment for learning refers to frequent, interactive assessments of students' progress and knowledge in order to identify learning difficulties and tailor instruction to the requirements of the students. A thorough analysis of the literature demonstrates that this form of assessment is common.

Recommendations

This empirical study has proved the efficacy of assessment for learning in teaching ESP and it shows that the students' attitudes towards this method of assessment are predominantly positive. Taking into consideration these findings, the researcher strongly recommends this form of evaluation and suggests that it is to be generalized and used at a wider level in the future in teaching English and even other subjects at the Goa college . But to secure the success of implementing such a method of assessment in a Sudanese setting, the instructors and teachers need to be given intensive training on how to conduct this form of assessment and that, instructors need to be fully acquainted with the philosophy and merits of such a modern occidental technique of evaluation and to encourage them to abandon the barren traditional summative assessment practices.

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OUTCOME BASED ASSESSMENTS TO ENHANCE STUDENTS' CRITICAL THINKING

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Abstract

The National Education Policy 2020 has changed the way we assess students in higher education. Outcome Based Education (OBE) has brought about Outcome Based Assessments (OBA) which is used to assess students based on learning outcomes. The aim of this present study is to introduce the concepts of OBE and OBA along with the personal experiences of the researcher. OBE focuses more on the outcomes than the student's performance. OBA is the assessment used to assess the learning outcomes of the students. There are several benefits and methods of assessments. A teacher can design one based on the needs of the students. The process of OBE and the manner in which the outcomes are assessed are stated in this study. The researcher's experiences with regards to the process of OBE leading to OBA have also been put forth in this study. OBE enhances critical thinking in students and leads them to become professionals.

Keywords : National Education Policy, Outcome Based Education, Outcome Based Assessments, Critical thinking, Higher Education, etc.

Introduction

One of the most crucial aspects of growth is education. It significantly influences a nation's economic prosperity. The citizen's education, knowledge, competence and efficiency are essential to the growth and prosperity of the nation. 'Presently, this century can also be known as the Age of Capital in relation to the fact that the main determining factor of a nation's criteria of standard living is how effectively it utilises the skills, practical knowledge and competencies' (Ozturk, 2008).

William Spady helped found the network of schools for Outcome Based Education in 1980's. Countries like Australia, Malaysia, Hong Kong, the European countries, the United States of America, etc. have been using Outcome Based Education for more than a decade now. However, in India, it has become a hype with the National Education Policy 2020 (NEP-2020). The NEP- 2020 policy document mentions the word 'outcome' about 40 times while 'learning outcomes' is repeated around 20 times (Dr. Shah, 2022). Some may ask, 'What is Outcome Based Education or OBE?'. Midraj (2018), defines OBE as, 'Students are actively involved and develop

their knowledge and skills by constructing ideas in their own way when they understand their meaningful learning experience'. According to Kumbhar (2020), 'the paradigm of education known as OBE places more emphasis on outcomes or goals than on performance. Plans are set for the students by the educators, the knowledge has to be acquired by the students, and at the end of the course, they need to appear for the examination. The student's achievements will be evaluated based on tests, practicals, assignments, and projects. Their outcomes will thus showcase the student's performance or achievements in that particular course.'

'As part of quality assurance, it is essential to substitute teaching *how to remember* with teaching *how to learn* deeply through systematic un-learning. In this context, both the UGC and NAAC have come forward to insist upon OBE based on the Bloom–Anderson taxonomy of learning as an effective method of curricular design for quality teaching and learning' (Gurukkal, 2020).

OBE is a flexible learning strategy with an emphasis on empowerment. It aims to equip students with the knowledge, abilities, and strategies they need to succeed after graduation. The assessments related to OBE are Outcome Based Assessments (OBA) which are authentic assessments, where students are encouraged to put the knowledge and skills they have learned in the classroom to use in real-world scenarios. This kind of assessment does not have a wrong or right answer, it reflects the thought process of a specialist in the field. When teachers assess their students on the basis of outcomes, it provides an opportunity for these students to apply their skills and knowledge to ill-defined problems, just like they would in real life, thus leading to critical thinking and problem solving abilities. The teachers need to integrate discipline-based skills and knowledge while conducting activities during instruction. Students figure out how to think critically by undertaking an outcome based assessment that is illustrative of an ongoing issue a specialist in that discipline would experience.

Teachers should preferably use a rubric to assess their students, and the teacher and the student should apply this rubric to the outcomes. Both need to discuss the result, and based on the teacher's feedback, the student could choose to attempt the assessment based on outcomes again until the student achieves quality work as set by the teacher via the rubric. Students are more likely to be effective professionals when they attempt outcome based assessments. Their critical thinking abilities are enhanced and so do their problem solving abilities. A teacher can determine outcomes that meet higher order levels of learning, although this can be judged best by the teacher herself/himself as they need to create achievable outcomes. They can construct outcomes that meet higher levels of learning and then design pedagogy and assessments based on them. Teachers can provide additional opportunities and feedback to their students to help them achieve those outcomes.

Benefits

Transparency

OBE produces transparency. Students are able to understand what is expected of them, and the teachers also realise the level of their student's understanding. It is essential to be clear about the outcomes, but it is also crucial to remain persistent throughout the category for the development of students.

Assessing students

It is a critical aspect where OBE is concerned. The criterion is already stated in the outcomes of the course. As a result, the teachers assess their students based on the said criterion already mentioned in the course outcomes. The result sheds light on the student's progression.

Participation

Student's participation is seen and they calculate and strive to not only learn about themselves but also to work towards achieving realistic outcomes.

Performance

Student's performance levels are heightened as they know their strengths and understand which outcomes are achievable for them and which they need to put in more effort toward. Thus they turn out to be professionals in their field of study and ultimately in their field of work.

Critical thinking

When a teacher assesses students based on outcomes, the students begin to think critically. They are able to achieve the goals meant for professionals.

Challenges

Curriculum

A curriculum changes with time; however, the way to assess outcomes will still be the same.

Teacher workload

There is a change in the workload of the teachers as they now need to work towards implementing OBE in their classroom and assessing their students based on outcomes. This means that the teachers need to match their teaching and assessment techniques based on the desired outcomes. This could be done before the next semester/year begins.

Time consuming

Assessing the students based on outcomes is time consuming. It is not impossible, but yes, it is a lengthy task. Teachers are normally asked to assess their students on more than one occasion.

Thus, a teacher needs to implement time management techniques to meet the demands of a continuous assessment.

Untrained faculty

Teaching staff will need specific training in designing assessment structures, incorporating these into their teaching, and enhancing their curriculum delivery approach. They would need to understand the nitty-gritty of outcome based teaching and assessments.

Designing an Outcome Based Assessment

Firstly, a teacher needs to identify what is expected of the students to be able to do upon the completion of a course. Assessments are an important aspect of outcome based education and is used to understand if a criterion has been achieved. The questions one can ask themselves is

- How will she/he assess each outcome?
- What evidence of learning is relevant for each outcome?
- What criteria will he/she use to evaluate the evidence?
- Which outcomes can she/he incorporate to develop the student's critical thinking ability?

Steps to assess the students

There are various types of assessments that can be used to measure the learning outcomes of students. We have been using almost all of them to assess our students. Nevertheless, they are formative assessments, summative assessments, criterion referenced assessments, alternative assessments, authentic assessments, and performance assessments. Once the teacher decides on an assessment tool, he/she needs to decide the criteria by which the work of the students will be assessed, depending on the outcomes assessed and the tool used for assessment. A teacher should preferably use a rubric. A rubric is used to assess a student's work. It has a set of criteria that are predetermined and suited to the outcomes that are not easily quantifiable. There are no clear 'wrong' or 'right' answers.

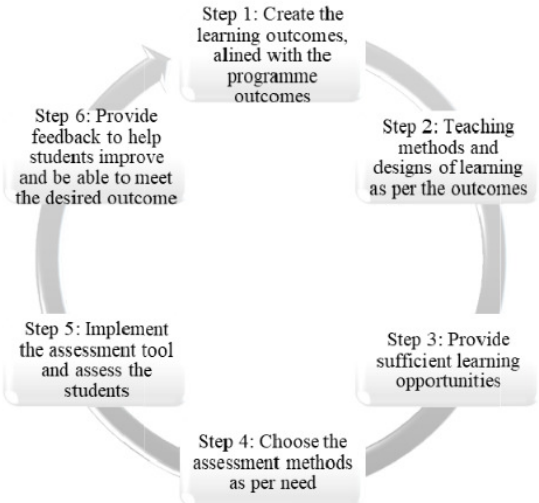

Figure 1: *Steps of Outcome Based Education/Assessment as Experienced by the Researcher*

Personal Experience

The NEP-2020 is being implemented in a phased manner in the Indian state of Goa. As an educator in higher education, it was deemed fit for us to implement outcome based teaching and assessments during this semester for the academic year 2022-2023. We were first trained on how to set the outcomes, how to teach keeping those outcomes in mind, and finally, how to assess students based on the said outcomes. We had to assess our students based on the outcomes we set for them during the semester. Finally, we had to make an attainment matrix to understand how many of our students met the outcomes.

Firstly, we had to have a clear image of what was important for our students to be able to achieve, ensure our students were aware of the predetermined outcomes, change the way we teach or provide instructions based on the desired outcomes, provide sufficient learning opportunities, provide feedback so that the student can improve and achieve the desired outcomes, and finally assess them to ensure that the learning took place. We had to be focused on what we wanted our students to develop in terms of knowledge and skills, not forgetting their personalities too, so that they were able to achieve the intended outcomes that had been articulated to them prior to assessment. We had to ensure that we had a high benchmark of performance as per their calibre. We had to encourage them to engage deeply in the learning process and to help them think critically. We had to create an environment fit for learning that supported the learning activities appropriate to achieving the desired outcomes.

We clearly stated the course outcomes and ensured that they were aligned with the programme outcomes. The course outcomes describe the performance that a student should be capable of achieving as a result of the learning experiences during a course. The course outcomes are determined by either a teacher or a team of teachers teaching the same course. There is a need to anticipate how a teacher would be assessing the student's learning in relation to each outcome. And for this reason, the teacher needs to be very cautious while writing these course outcomes. The verbs listed in the revised Bloom's Taxonomy for different levels of learning need to be used to facilitate the alignment of the course outcomes with the assessments. For higher education, the focus needs to be on the higher levels of learning so that the students are able to think critically. Once the course outcomes were finalised, they were made known to the students so that they were aware of the same.

Selecting the teaching-learning activities helps the students achieve the intended outcomes and engage them. This was a task to achieve. A learner-centred approach was emphasised, wherein the students took responsibility for their own learning. The students were taught on the basis of what they would face in real life and how to handle such situations. Planned and assigned an activity to the students during their internship to heighten their curiosity that was linked to the syllabus and the desired course outcome. Once they were back, situation-based scenarios were

placed before them, and they had to create a solution to handle such situations. They had to use their past knowledge and experiences to handle the new situation at hand, think critically, and provide their response. The students were provided feedback and given the opportunity to improve so that they could achieve the desired outcomes. Finally, we assessed our students based on the outcomes. The formative assessments were conducted using a rubric. The summative assessments were done as per the norms, and finally, the attainment matrix was analysed to understand the number of students who met the desired outcomes.

The Future

OBE is the future of the education system in our country, while OBA is the method by which our students should be assessed. NEP-2020 has made it clear that rote memory needs to be replaced, and what better way to do it than by changing the way we teach and assess our students. Students have only been memorising concepts that have been taught and, hence, do not have the ability to think critically. Our classroom needs to be vibrant, not merely with colours, but with different methods of teaching and innovative ways of instructing the curriculum. However, the NEP-2020 policy document will remain a document until and unless the stakeholders go beyond it and ensure that it is not merely implemented but is followed in a manner that suits the needs of the next generation learner. We need to make a change in the way we teach and assess the learner, and what better way than teaching and assessing by focusing on the learning outcomes. A teacher can make a difference in a student's life.

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BEST PRACTICES FOR STUDENTS' ACADEMIC DEVELOPMENT AT ASHOKA INTERNATIONAL CENTRE FOR EDUCATIONAL STUDIES AND RESEARCH, NASHIK

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Abstract –

A study of best practicesfor students' Academic development at Ashoka International Centre for Educational Studies and Research, Nashik. To achieve this research objective case study research method was adopted.For the research purpose researchers used purposive sampling method. For the data collection researchers observed related records and website of the institution. Best practices for academic development of students were implemented in AICESR having played major role in student's development.Elite and Remedial club help students and motivate to achieve good percentage in university examination. Students development programme helped student to set the goals and take follow-up of their goals till its achieved. Competitive examination cell motivated students to crack different competitive exams.

Keywords- Best practices, Academic Development, Case Study

Introduction

The Ashoka International Centre for Educational Studies and Research, Nashiknurtures critical thinking, creativity and scientific temper among the students to transform them into life-long learners and innovators. To nurture critical thinking, creativity and scientific temper among the students' initiative taken by college. AICESR believes in students' development and their continual improvement and for that it conducts number of activities to improve students' performance and Progression. We also believe student's growth is our College growth. Hence teaching learning is one important aspect for development of students. Students' academic growth is important for their future so we take many activities for that following are some best practices we conduct for the academic development of students. Best practices are those which are adopted by the institution for positive impact on regular functioning of the institute which are not prescribed by any statutory body. Student development programme focuses on enhancement of the skill of the students apart from regular academic development.

Review of related literature-

Jared Keengwe, (June 2010) Towards Best Practices in Online Learning and Teaching in Higher Education, MERLOT Journal of Online Learning and Teaching.

Objectives of the research

1. To study the best practices in Online learning.
2. To evaluate impact of best practices on students' learning.

In designing a successful online teaching and learning experience, faculty should understand the components involved in both setting the stage and managing the change process. . However, in the shift from the traditional learning and teaching modality to online teaching and learning environments, it is critical for faculty not only strive to learn the technologies associated with online learning, but also understand the need to fundamentally change and transform their pedagogical approaches to the learning and teaching process to meet the instructional needs of online students Elana Karshmer, Building a First-Year Information Literacy Experience: Integrating Best Practices in Education and ACRL IL Competency Standards for Higher Education

Need and Significance of study –

All the stakeholders related to institution are satisfied with the performance of the college. These makes the college unique in terms of its producer. The management and higher authority motivates for scaling new heights. These best practices not only have long run positive impact on students but also on society. It ensures that the SOP of the college is brought in real practice. Being a part of visionary organisation the college has made distinct mark of its self in the education fraternity. As per new education policy, the institution that are giving quality education will survive. This makes the college more unique and exclusive.

Objective of the Research -

1. To search the different best practices of AICESR.
2. To search significant best practices in teaching learning of college.

Methodology – A case study is a research approach that is used to generate an in-depth, multi-faceted understanding of a complex issue in its real-life context. Researcher used case study method for this research.

Sample Method- Purposive sampling method used for this research i.e. AICESR college is sample for the research.

Data Collection- Observation, Documents and Record tools were used for the research. College website, records were used for data collection.

Data Analysis Tools – Qualitative data analysis method used for this research.

Title of the Best Practice- Elite and Remedial Club-

Elite Club will cater the specific needs of academically talented students (Class toppers). This will help them to excel in academics and get ranks in university results. Remedial Club will

cater the specific needs of academically weak students. This will help them to do better in academics.

- **Goal-**
- To motivate and help students for getting the university gold medals (Ranks).
- To break record of all time toppers in university exams in each class.
- To enhance student's satisfaction through appreciation and engagement.
- To identify students who are not performing well in exam.
- To identify the reasons/factors affecting student's performance in exam.
- To help students for getting the good score in university exam by additional lectures, doubt solving sessions, extra exams, etc.
- To provide special guidance regarding answer writing, memory techniques, etc through expert sessions.

- **Context –**

1. Elite club will cater the specific needs of academically talented students (Class toppers).
2. This will help them to excel in academics and get ranks in university results.
3. This cell will cater the needs of academically excellent students.
4. Remedial Club will cater the specific needs of academically weak students.
5. This will help them to do better in academics.
6. This cell will provide necessary support in terms of content, question banks and additional lectures to academically weaker students.

- **Practice-**

Step 1 Identification of students from each class
Step 2 Make Whatsapp group at Unit level.
Step 3 Identification of reasons/factors affecting student's performance in exam
Step 4 Identification / Setting of Percentage Targets for each student
Step 5 Subject wise percentage target setting for each student considering his/ her strength and weaknesses.
Step 6 Preparation of student's schedule and monitoring it
Step 7 Regular evaluations and monitoring through Club meetings.
Step 8 Induction session
Step 9 Organising Expert Session
Step 10 Preparing and monitoring extra lecture schedules
Step 11 Reporting management & continuing improvement

Title of the Best Practice - Student Development Programme (SDP)

- **Objectives of the Practice:**

1. To provide need based Workshop to students according to their goal.
2. To arrange recent trends seminar so that the students can have Practical knowledge and hands on experience.
3. To conduct market required skill development program for the students.

- **The Context:**

1. Student Development Program focuses on the enhancement of the skills of the students apart from regular academic development.
2. It aims at increasing levels of understanding of the concepts and practical implementation of knowledge along with their research aptitude.
3. It would help in holistic development of the students making them thinkers.
4. To bridge the gap between the theory and practical knowledge.

- **The Practice:**

Step 1: We discuss with each student and find out the need of the student of each class (first, second and third year). We identify their area of interest and where they are lacking. Depending on this the topics are identified and discussions were done with the student.
Step 2: Pre-test is taken on the topics which are identified in step1 for each class. These papers are checked by respective Educators. They also get clarity of knowledge the student has for specified topic.
Step 3: Educator guide them to enhance their knowledge. They also help students to develop in the area they have selected.
Step 4: Finally, a Post Test is taken to evaluate them. We also compare the pre-test and post test result to identify the knowledge gain by each student.

- **Evidence of Success:**

Steps of SDP

1. SDP strives to make education and learning an interesting activity for the youth.
2. It helps to get rid of fear and anxiety.
3. Its ultimate goal is to facilitate overall Personality Development and Personality Enrichment for every student thus making them Happy and Successful in life.

- **Best Practice - Competitive Exam Cell**
- **Introduction**

Ashoka Education foundation is committed to impart need based and practical education and we are committed for holistic development of students. Competitive Exam Cell is catering the need of students to prepare for competitive examinations. This cell is include the tasks like -

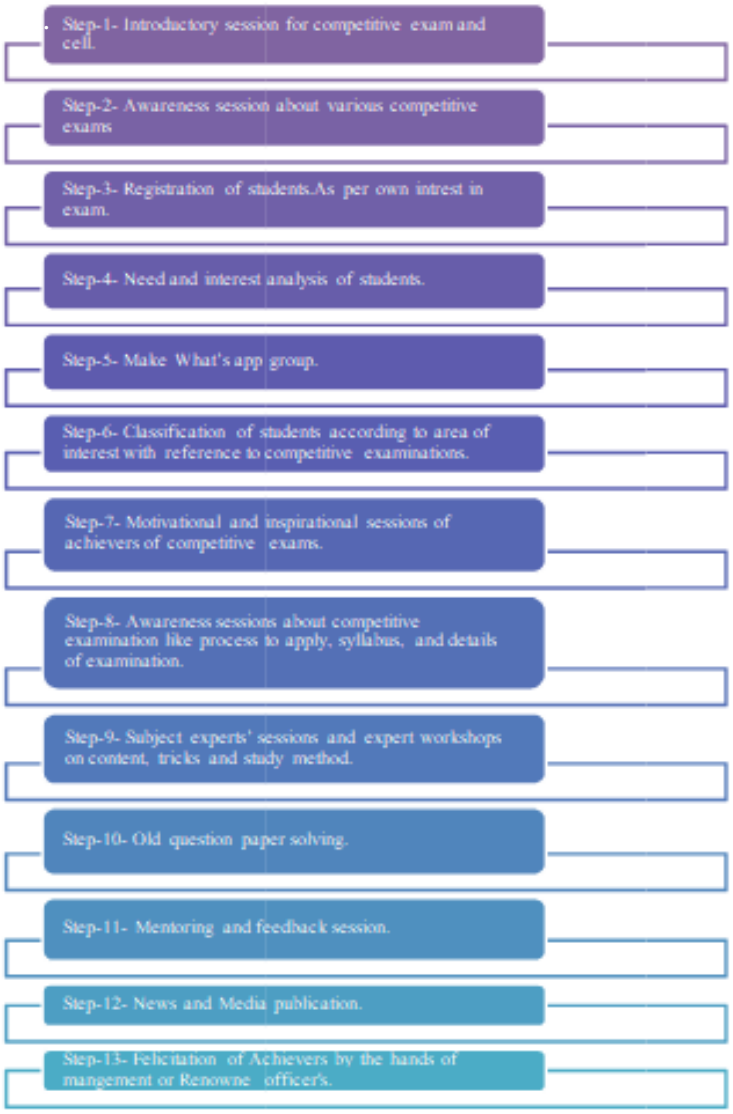
analyse the need and interest of student teacher, motivation, awareness about procedure of different exams and steps of examination, methodology of studies, guidance for examination, continuous mentoring and feedback about competitive examination.

- **Goals –**

1. To analyse the need and interest of students about various competitive examination.
2. To classify students according to area of interest with reference to competitive examinations
3. (UPSC,MPSC,SSC, RRB,IBPS,NET/SET,CAT/XAT/CMAT/CET/CTET, KVS etc.)
4. To create awareness among students about various competitive exams.
5. To explain procedure and steps to apply to various examinations.
6. To make student competent with set of abilities and skills require through various guidance sessions for achieving success in competitive examinations.
7. To provide resources and facilities (like library, e- library, reading room, Magazine, bulletin to students) for preparations and studies.

- **The context-**

1. This cell is tried to cover all competitive examinations conducted by government of India, State government, Semi government and autonomous bodies.
2. This cell will cover all students admitted at AICESR.



Steps of Competitive exam cell

Conclusion:

In AICESR there are different Best practices like Holistic Development, Competitive exam Cell, Mentoring, Need Based Scholarship, SDP, Employability Enhancement Cell, Reflective assembly and QAG were working for all round development of students'.

SDP best practice helped 100% placement of the students. Elite Club helped to achieve Gold medal in University examination. Three students were University toppers of 2019. In 2023 one student was University toper in B.Ed. Examination. Approximately 70% students got First class with Distinction. From last 7 years our Result is 100%.

With the help of Competitive exam cell our students cracked CTET, TET, SET, NET, PET exams during B.Ed. It helped students to be a professional teacher with new technology, social, human values and innovative techniques.

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ENGLISH AS A SECOND LANGUAGE IN THE TEACHING PROCESS IN THE LIGHT OF NEP 2020

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Abstract:

In this world language, the basic point of economic development is the general public.

Language is a presence for human beings. Where ever there is language, there is society and development. The main role of language is correspondence. Language plays an important role in shaping societies, countries and nations. Listening, speaking, reading and writing are essential for their proficiency and communication. If a person is able to speak more than one language, then the person is a linguistic person. Correspondence is a significant essence of progress and it is manifested through language. It should be believed that language conveys a plan of its meaning as a mean to achieve stated ends and not as an end in itself. The objectives set for this situation would be training, public persona and financial turnover of the events. India's National Education Policy 2020 outlines the country's plan for the new century. Its goal is to enable everyone to have access to a decent education that is in line with SDG 4 of the 2030 Agenda. The NEP emphasizes teaching in the mother tongue in public and private primary schools. This paper examines the NEP 2020 policy on language education. The framework of the National Education Policy (NEP) 2020 is to guide the development of education in the country. It also advocates that the medium of instruction be the mother tongue of the student's local language, the language spoken at home, or the regional language for schools. It aims to make India a global knowledge superpower that is consistently equitable, accessible and inclusive. All students learn three languages in their school according to a "pattern". It is generally understood that the three languages mentioned are Hindi, English and the regional language of the respective states. At least two of the three languages should be from India. However, the policy speaks to the loss of cognitive benefit for young children. For example: If a student in Punjab is learning Punjabi and English, he will have to choose to learn another Indian language. English is the most widely spoken non-native language in India. From schools to colleges, a student learns the English language until he finds a job. Nowadays, the use of various electronic resources has become an important part of the learning process. A teacher uses technology in the classroom to create positive change. It also helps to develop their knowledge with enthusiasm and develop their knowledge.

Keywords: NEP2020, Importance of English language, Recommendation of new education policy on local and regional language, Problems of implementation of NEP, Constitutional provisions related to languages.

Objectives:

1. Understand NEP 2020
2. To acquire knowledge of local and regional language in accordance with English language for the growth and overall development of students
3. To enable an understanding of the nature, importance and scope of the English language
4. To know the reasons of NEP 2020, they gave preference to local and regional language and kept English as the second language in the teaching process.

Introduction:

Global perspectives on education for the 21st century are already affecting the whole world.

Innovation practices are increasingly being developed and appreciated nationally beyond borders, especially revolutions in communication that have brought people closer together in thought action and motivation aspiration.

The interdependence of a nation goes far beyond the structure of economy and communication. The human plight is shared by all, and survival and development depend on cooperation between people and the nation. Globalization in education is considered the best national tool for building moral and human cultivation. He cannot see the emerging global problems and happily and satisfactorily copy the problems of Common Life. In this world language, the center of growth is financing the development of the education of the nation as well as the individual. Communication plays an important and fundamental role in today's life. It is a means of expressing thoughts, emotions and feelings towards someone. The English language is an essential means of communication that helps our perception and thinking in the form of words.

Meaning of English Language:

There are many languages in the world, but what makes it special is the recessive transcription of other languages before the English language, which increased the use of the English language.

Everyday communication contains various English words even when we are communicating in another language. It can be the behavior of native, official foreign or international communicative languages. In India, it is the official language and is at number two. It can be seen as a fundamental way of expressing social identity and as a purely human and non-

instinctive method of communicating. The child must learn the language of his society. The English language has become the primary requirement for connecting people and for the exchange of ideas, culture, economy, lingua franca for communication, business and education. The English language plays an important role in our education system as well as in our day-to- day life. Among the various languages in the world, English is the most widely spoken language in the world. English occupies a special place as an international language; it is used by a large number of people from different nations from all continents. The reason, which is based on ignorance, is that it is not because of its own qualities, but there are important political, historical and economic reasons for it to be popular worldwide. Another obvious reason is that English speaking nations like England and America are prominent but no normal common language can become so necessary until it has some extra-ordinary features to achieve phenomenal growth and to increase its popularity.

Three language formula

It was first incorporated in the national educational policy 1968 by the Indira Gandhi government. In Hindi speaking states; English, Hindi and Modern Indian languages. In non- Hindi speaking state; English, Hindi and one Indian language. The three language formula brought the three functions namely, accommodation of group identity, affirmation of national unity and increasing the administrative efficiency. The three language formula was implemented in 1968 all over the country except Tamil Nadu. National policy on Education 1986 was based on the National policy on Education of 1968 and had no differences.

The main characteristics for this stride of English language are under:

1. **Receptiveness:** The first characteristic of the English language is receptiveness, which is regarded as an extraordinary feature of the language.It has adopted various words from Asian, European, Chinese and other languages. English has kept a policy of accepting words from classical language is like Latin, Greek and Sanskrit.

2. **Heterogeneousness:** Heterogeneousness means combined or impure form. The language English contains various words from various languages that it has become the most mixed language. Original words from other languages have converted into English. Some words have kept their original meanings and some words' meanings got diverted into different meanings, the spelling and meanings have also changed. E.g. the word, 'Foto' from German has become 'Photo' in modern English.

3. **Fixed order:** Another characteristics of English language is having a fixed word order, which is necessary for proper relationships of the words in a sentence, to avoid various ambiguities. The arrangements of word decides the specific word's relationship to the others.

4. **Usage of Periphrases:** In English language there are very significant uses of periphrases. It

means various ways of expressing ideas or feelings in different words.It is made possible to say the same thing in different ways in English. It is a very necessary quality of any language, because it is what that makes the language rich and varied.

5. **Development of intonation:** The great development of intonation to express different varieties of meanings is the significant quality of the language English. Intonation can easily converge the meaning of a sentence completely. It can be described as the tone or pitch and density of the voice.

6. **Restrictions:** Language could be restricting; while concealing the ideas or imagination into language, some meaning is lost. No words or symbols can represent the exact reality.

7. **Language could be arbitrary:** Because of the presence of an artificial relationship between the signifier (form of the language) and the signified (referent).

8. **Features of language:** Language can be unique, creative, complex and modifiable.

9. **Language can be recursive:** It is the use of same grammatical patterns to accomplish any number of sentences. It acquiesces to represent any thought idea or a feeling using same phraseology.

10. **Language** is a system of symbols and it is repetitive (repeated): language contains the magnitude for superfluity or repetition. Repetition may ameliorate or depreciate efficient communication.

Scope of English language

- **International importance:** English is the first rated international language which can also be called and used as a universal language.

Therefore its knowledge promotes international understanding. Thus, it's very helpful in nurturing true internationalism and co-operation around the nations in the world.

- **Educational importance:** English has become a medium for gaining information about modern arts, science, humanities, technology, etc. It has equal importance for citizens, politicians, scientists, doctors, engineers, educators, businessmen, researchers. They increase or develop their knowledge and experience by reading English literature or journals. As a result, they contribute to the growth of their country particularly when it is a developing country like India.
- **Vocational importance:**Study of English language as a modern and developed foreign language has huge vocational importance for all of us, it gives us opportunities for many varied vocations, like diplomats, foreign related services, businesses, commerce, medicines, educating, law, etc.
- **Disciplinary Importance:** The Study of English language provides opportunities for global education.
- Constitutional Provisions regarding Languages:

Article29 of the Constitution of the India protects the interests of minorities.

The Article states that, any section of citizens who have a distinct language a script or cultural importance of its own language will have the right to conserve it.The article related to the official language of the Union of India is Article 343. According to this Article, The languageHindi has to be written &used in Devnagri script and the numerals should follow the international form of Indo-Arabic numerals. This Article also states that English will continue for 15 years from the commencement of the constitution.The article about the official language for communication between the state and between a state and union is Article 346. The Article states that an authorized language should be used. However, if some states agree that their communications shall be done in Hindi, then the language Hindi can be used.Article347 gives the Presidentthe power to recognize a language as an official language of a given state and to provide that the President is satisfied that a substantial proportion of the state desires the language to be recognized, such recognition can be for a part of the state or the whole state. The Article350A facilitates for giving guidance in mother tongue/regional language at the primary stage. Article 350 B states for making an establishment of a special officer for linguistic minorities. The officer shall be appointed by the presidents and shall be investigating all matters related to the protection for linguistic minors, reporting directly to the president. The President may then place the reports before each house of the Parliament or send them to the government of the states concerned. The article which gives power to the union government so that it can issue a directive for development of the Hindi language is Article 351.Eight Schedule of the Constitution of India contains a list of 22 languages recognized schedule languages.

- **Greater Flexibility in the New Policy:**

However, the final policy annexures affirmed that no language will be imposed or forced on any state.

The language learned by the children will be wholly and purely choices of states, and also the individuals (students) themselves, so long as at least two of the three languages are native to India.

- **Traditional languages, Classical Languages:**

Sanskrit will be offered as an optional language at all levels of school and higher education. Other classical and old languages will also be available while foreign languages will be offered at secondary level.

- **Mother language:**

Whenever possible, the medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language / mother–tongue/local language/regional language. According to New Policy, this language formula will be applicable for both public and private

schools.

- **Discussion:**

English has an important position in the educational system, advancements in information technology, scientific knowledge and applications worldwide.

In India, English is becoming the official administrative language, the medium of instruction and the subject of study. Knowledge of the English language is considered essential for thinking about the activity and even for employment. English has achieved the status of a reference language in anotherEarth of the world. The English language establishes social, economic, cultural and political relations with other countries of the world.Knowledge of English promotes international understanding and cooperation among the nations of the world. English occupies an important place in the education system and human life of our country. India is the third largest English speaking country. In India, English is seen as a must-know language. English has now become a ladder for higher social mobility and a window to the world.Despite all this, the New Education Policy 2020 emphasized on three language patterns for better understanding of the concept for students. NEP 2020 gave second place to the English language, and kept local and regional languages in first place.

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A STUDY OF METACOGNITIVE AWARENESS AMONG STUDENT TEACHER OF B.ED. IN CONTEXT WITH MATHEMATICS SUBJECT

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Abstract:

This study focuses on the descriptive analysis of metacognitive awareness among student teacher of B.ED. in context with mathematics subject. Metacognitive awareness refers to an individual's ability to reflect on their thinking processes, regulate their learning, and monitor their own understanding. The study aims to explore the level of metacognitive awareness of student teachers in the domain of mathematics and in teaching of mathematics. The research is carried out in Pune, Maharashtra on a sample of 98 student teachers of B.ED. having mathematics method. Metacognitive awareness is assessed using questionnaire developed by researcher.

Keywords : Metacognitive awareness, student teachers, mathematics subject

Introduction

The term Metacognition was introduced by Flavell in 1979 to refer to 'the individual's own awareness and consideration of his or her cognitive processes and strategies.' It refers to that unique capacity of people to be self-regulative, not just to think and know but to think about their own thinking and knowing.

Knowledge about cognition involves decision that helps to identify the task on which one is currently working. This dimension includes declarative knowledge, procedural knowledge and conditional knowledge as its sub dimensions. Regulation of cognition occurs when individuals modify their thinking. It is a sequential process that one uses to control cognitive abilities and to ensure that a cognitive goal has been met.

Metacognitive aware students plan their work properly, know how to manage the information available, monitor their own progress and evaluate them periodically, correct their mistakes in time and are always aware of their knowledge. This awareness leads to meaningful learning of mathematics as a discipline.

What are the main goals of mathematics education in schools? Simply stated, there is one main goal- the mathematisation of the child's thought processes. In the words of David Wheeler, it is "more useful to know how to mathematize than to know a lot of mathematics" (Wheeler, 1982)

Metacognition allows people to take charge of their own learning. It involves awareness of how they learn, an evaluation of their learning needs, generating strategies to meet these needs and then implementing the strategies. (Hacker, 2009)

The students who are going to be Mathematics subject teacher in future, metacognitive awareness is essential as it enables them to:

- Monitor their own understanding of mathematical concepts, and identify areas where they may need to improve.
- By being aware of their own thinking processes, a maths subject teacher can adapt their teaching strategies to better meet the needs of their students.
- A maths subject teacher who models metacognitive awareness can encourage students to develop their own metacognitive skills.
- By understanding their own thinking processes, Maths subject teachers can better assess student learning. They can use their own awareness to identify areas where students may be struggling and develop targeted assessments to help student overcome those challenges.

Statement of Problem

"A study of metacognitive awareness among student teacher of B.ED. in context with mathematics subject."

Objectives of the study

- To study the metacognitive awareness among student teacher of B.ED. about mathematics subject.
- To study the metacognitive awareness among student teacher of B.ED. about teaching of mathematics subject.

Research Question

The analysis of the data is predicted on the following research question;

- How is the metacognitive awareness among student teacher of B.ED. in context with mathematics subject?

Scope

In this study researcher intends to study the metacognitive awareness among student teacher of B.ED. in context with mathematics subject. The scope of this study is related to know the metacognitive awareness among student teacher with mathematics method in English mediumcollege of educationof Savitribai Phule Pune University, Maharashtra.

Delimitations

- Onlycollege of education of English medium affiliated to Savitribai Phule Pune University of Pune city is considered for this study.
- Only English medium B.ED. students of mathematics method are included for this study.
- Only Metacognitive awareness in context with mathematics is included for this study.

Research Methodology

Research Method and Tool

Researcher used survey method for the data collection. Questionnaire is developed as a tool for data collection including questions based on metacognitive awarenessof student teacher of B.ED. about mathematics subject and about teaching of mathematics subject.

Population and Sample

The population considered for this study is all student teacher of college of education of Savitribai Phule Pune University, Maharashtra of English medium with Mathematics Method. The sample of present study comprised of 98 B.ED. students sample selected by non-probability sampling method that is incidental sampling, which are available conveniently to fill up questionnaire.

Data Collection

A questionnaire is used for collecting data on metacognitive awareness of student teacher of B.ED. Questionnaire is having total 20 questions. 10 questions are about to know metacognitive awareness of mathematics subject and 10 questions are about to know metacognitive awareness about teaching of mathematics subject. All questions are multiple choice questions with one mark each Level of students' performance is measured for less than 40% score as below Average, Score between 40% - 70% as Average and more than 70% as above average.

Statistical Technique

The researcher used percentage for statistical analysis of data.

Data Analysis and Interpretation

Objective 1

- To study the metacognitive awareness among student teacher of B.ED. about mathematics subject.

Table 1- metacognitive awareness among student teacher of B.ED. about mathematics subject.

Number of students	Total marks	Range of score	Percentage of correct response	Level of performance
98	**10**	**2-9**	**68.1%**	**Average**

Interpretation

Score of correct responses of metacognitive awareness of 98 student teacher of B.Ed. about mathematics subject is 68.1% which is average performance.

Objective 2

- To study the metacognitive awareness among student teacher of B.ED. about teaching of mathematics subject.

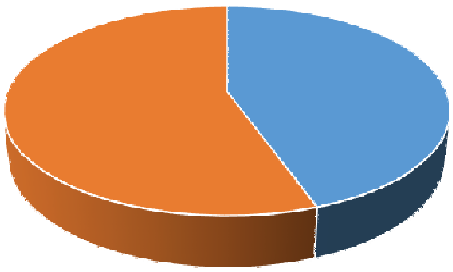
Table 2- metacognitive awareness among student teacher of B.ED. about teaching of mathematics subject.

Number of students	Total marks	Range of score	Percentage of correct response	Level of performance
98	**10**	**1-9**	**54.7%**	**Average**

Interpretation

Score of correct responses of metacognitive awareness of 98 student teacher of B.Ed. about teaching of mathematics subject is 54.7% which is average performance.

Chart 1- metacognitive awareness among student teacher of B.ED. About Mathematics and teaching of mathematics subject



Conclusion

- The study shows that student teachers of B.Ed. are not clear about Metacognition and Intuition for problem solving of mathematics. They still believe on traditional memorisation of formulas to solve problem.
- The study shows that student teachers of B.Ed. are not familiar about the metacognitive regulation regarding mathematics subject. They still believe that metacognitive regulation belong to step wise problem solving in context of mathematics subject.
- The study shows that student teachers of B.Ed. still do not think the use of Metacognition in everyday teaching mathematics will be helpful to make better instructional decision.
- The study shows that student teachers of B.Ed. are not able to differentiate between the Metacognition and cognition in the context of mathematics teaching.
- This study shows that metacognitive awareness among student teacher of B.ED. about mathematics subject and teaching of mathematics subject is Average.

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A CRITICAL STUDY ON THE HOLISTIC DEVELOPMENT OF SECONDARY STAGE STUDENTS AND TEACHER'S ROLE

(Augmentation of School Education)

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Abstract

Holistic development in English means a person's social, emotional, physical, mental, and intellectual growth. Fusing this term in education changes its meaning to focus on the complete development of a child's growth, not just academic advancements.The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. Ultimately, knowledge is a deep-seated treasure and education helps in its manifestation as the perfection which is already within an individual.Cognitive development is the area that traditional academic settings address most proactively, and it's one that still needs care and attention no matter the setting.Linguistic development is the last main area of holistic development. In short, it is a process by which children learn to use and understand a language. It starts with listening and understanding.Social-emotional development involves the development of a child's emotional wellbeing, identity, independence, cooperation and interaction skills, and it's the basis of all other learning.Physical development is another major area of holistic development. It can be broken into two categories, namely, the development of gross motor skills and the development of fine motor skills. Teacher has to do multitasking on different levels such as, creating learning environment, providing suitable learning resources, making students active participant, nurturing their creativity etc.

Keyword – Holistic Development.

Introduction

The period since the founding of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 1945 has been marked by an accumulating global agenda for transforming education for students in fundamental ways, even as the systems supporting their education continue to emerge and evolve. This agenda signifies an evolution in three respects: Recognition of education as a human right, a public good, and a public responsibility is driving the development of school systems that provide increasing access to instruction for more (and more

diverse) students.

- Recognition that access is not tantamount to learning is underscoring the distinction between school systems and education systems and is driving efforts to organize, manage, and improve the educational work of schooling—instruction—to raise quality and reduce disparities in academic learning in core content areas.
- Recognition that academic learning is but one dimension of holistic student development is broadening academically focused education systems into humanistic education systems that also support the social, emotional, moral, and civic development of students.

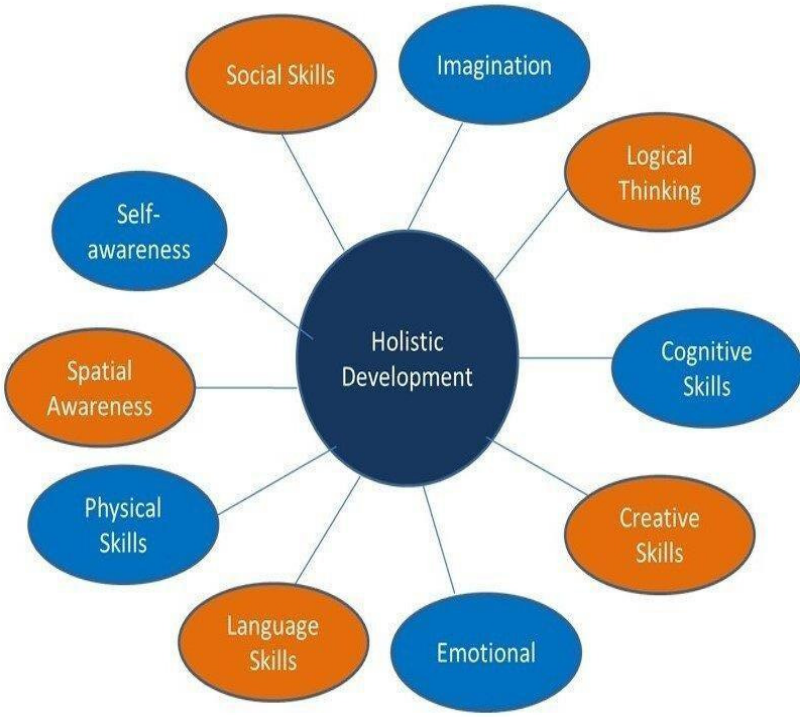
Holistic education addresses the broadest development of the whole person at the cognitive and affective levels. It aims for the fullest possible human development enabling a person to become the very best or finest that they can be and develop fully 'those capacities that together make up a human being'. A main element of holistic education is its focus on the interconnectedness of experience and reality. Holistic education attempts to develop a pedagogy that is interconnected and dynamic and thus is in harmony with the cosmos in contrast, much of traditional education tends to be static and fragmented, ultimately promoting alienation and suffering.

Holistic education focuses on the relationship between the whole and the part and suggests that teaching and learning approaches need to be rooted in a larger vision. If techniques are isolated and unrelated, they can become traditional education tends to be static and fragmented, ultimately promoting alienation and suffering (J, Miller 2006). Within this holistic perspective, the student is positioned as an active, participatory and critical learner who perceives and understands him/ dysfunctional. The holistic vision includes a sense of the whole person who is connected to his or her surrounding context and environment. (J, Miller 2004)

What is Holistic Development?

In the simplest terms, holistic development in English means a person's social, emotional, physical, mental, and intellectual growth. Fusing this term in education changes its meaning to focus on the complete development of a child's growth, not just academic advancements.

It aims at the development of abilities physically, cognitively, socially, emotionally, and intellectually. All these abilities are co-dependent on each other. For example, a child responds to a teacher's scolding by feeling the sensation (biological), understanding the motive (cognitive), and reacting accordingly (socio-emotional).



(https://idreamcareer.com/blog/holistic-development)

Importance of Holistic development

The holistic development of children is important for the following reasons:

1. Children develop a good personality.
2. They become innovative in their work.
3. Know how to deal with their problems.
4. Children develop how to communicate with the world.
5. They grow healthy.
6. Recognize, control their own feelings and understand other's emotions.
7. Children develop the values of what is correct and what is wrong. It also helps them to analyse things before reacting to any situation. This results in boosting their academic performance. A study conducted by the University of Cambridge found that students who participated in a progressive learning program showed an average improvement of 10-15% in their academic performance compared to students in a traditional learning program.
8. It helps the children work in cooperation and coordination that is, teamwork.

Holistic development of learners

The key overall thrust of curriculum and pedagogy reform across all stages will be to move the education system towards real understanding and towards learning how to learn - and away from the culture of rote learning as is largely present today. The aim of education will not only be

cognitive development, but also building character and creating holistic and well- rounded individuals equipped with the key 21st century skills. Ultimately, knowledge is a deep- seated treasure and education helps in its manifestation as the perfection which is already within an individual. All aspects of curriculum and pedagogy will be reoriented and revamped to attain these critical goals. Specific sets of skills and values across domains will be identified for integration and incorporation at each stage of learning, from pre-school to higher education. Curriculum frameworks and transaction mechanisms will be developed for ensuring that these skills and values are imbibed through engaging processes of teaching and learning.

NCERT will identify these required skill sets and include mechanisms for their transaction in the National Curriculum Framework for early childhood and school education. The logic and principles of holistic student development analogize "child with parent in home" to "student with teacher in school." The child/student is whole: body, mind, and spirit, developing synergistically. The parent/teacher nurtures the whole child/student: body, mind, and spirit, synergistically. The home/ school becomes both curriculum and context—that which the whole child/student recognizes, engages, and experiences, and in which the whole child/student develops. The essentials follow: positive, caring relationships between the child/student and parent/ teacher; responsibility, capability, and creativity in the parent/teacher; and safety, resources, and opportunity in the home/school.

Major objectives of the Study

1. To study the concept of holistic development.
2. To define the role of teacher in the holistic development of secondary students.

Holistic development

When we talk about the holistic development of a child, we need to understand that it is the overall development that matters. Thus, holistic growth seeks to target child personality development in the following ways:

Cognitive development

Cognitive development is the area that traditional academic settings address most proactively, and it's one that still needs care and attention no matter the setting. Each cognitive function activates a certain part of the brain, which helps a child understand and make meaning of the world. Like other areas, children develop their cognitive abilities at different paces, which is determined by inborn preferences and previous experiences.

There are 4 main categories within this area of holistic development, namely attention, thinking, memory and learning.

- **Attention** is the process in someone's mind that allows them to orient themselves towards

stimuli that are relevant and ignore those that are not.

- **Thinking** is the process of transforming and manipulating information in one's memory in order to reason, solve problems or make decisions.
- **Memory** is the capacity to retain information over time. Processing information includes three stages: encoding (getting information into memory), storage (retaining information over time) and retrieval (taking information out of storage).
- **Learning** is the change in a person's knowledge or behaviour due to new knowledge or experiences. Learning happens all the time, even in our sleep!

Cognitive development relates to the brain and its development, i.e., the child's intelligence. An average brain develops up to 90% of its potential by the age of 5, so children entering preschool are already nearing full development in terms of cranial capacity.

It is a well-known fact that young minds are quicker at absorbing information and noticing as well as adopting certain activities and behaviours. With proper guidance, these fresh minds can master much more. Cognitive development involves thinking, problem-solving, and understanding of concepts and is one of the vital elements of holistic development. It is a very important factor in the holistic development of a child.

Language development

Linguistic development is the last main area of holistic development. In short, it is a process by which children learn to use and understand a language. It starts with listening and understanding. Babies begin this process by paying attention to the face of their caregiver and recognizing language sounds. Then they start to connect words with meaning in familiar contexts. Linguistic development includes language listening and comprehension, language production and literacy skills.

- **Language listening and comprehension** is a child's ability to understand and make sense of spoken language. It includes recognizing speech, single words, phrases, sentences and grammar structures.
- **Language production** refers to a child's ability to communicate using pre-verbal (e.g., sounds or short vocalizations) and verbal expressions (e.g., words or sentences).
- **Literacy skills** include the development of oral language skills and getting familiar with different narrative structures. It also comprises phonological skills such as learning about letters and sounds.

Language and speech are integral parts of an upbringing process. Speaking well and articulating are necessary skills in today's world. Below the age of 5, children capture linguistic abilities fast and bloom well. Since the brain develops rapidly, it is necessary to stimulate sight,

sounds, and speech patterns. Children start with small words in their mother tongue and slowly move on to complex sentences. Gradually, the shift is made towards other languages, commonly English or a third language, and is the second most crucial element in the holistic development of the child**.**

Social-Emotionaldevelopment

Social-emotional development involves the development of a child's emotional wellbeing, identity, independence, cooperation and interaction skills, and it's the basis of all other learning. Once children have confidence, they feel empowered to learn anything.

This aspect of holistic development naturally begins from the time a baby is born. They interact with and create an attachment to their caregivers, which forms the foundation for all other relationships in life. As mentioned previously, establishing a child's wellbeing is the first step for learning. Without safety and trust, children cannot learn. You can build trust by giving children consistent routines (and being able to venture outside those routines occasionally), respect, and freedom to explore safely.

Social-emotional development includes:

- The ability to express and understand emotions
- The ability to form caring and secure relationships
- The possibility to experience life in a positive and healthy way
- The development of emotional wellbeing

If you've ever noticed that children of the same age vary in their social-emotional skills, that's perfectly normal. In fact, there's a factor that accounts for this phenomenon, and it's called temperament. A child's temperament affects their ability to control emotions or respond to the things around them. It explains the differences in children's personalities, behaviour styles, emotional reactions, and responses that you naturally observe as an adult.

For example, a child might be "easy," "slow to warm up," or "difficult." However, no child is actually "difficult," but the environment, including the adult who finds them difficult, simply does not match the child's temperament type. "Goodness of fit " describes this phenomenon, and it's important to be aware of it. Temperament is part of what makes each child unique, and learning the characteristics of their temperament will help you understand their individuality and ways to support them.

Physical development

Physical development is another major area of holistic development. It can be broken into two categories, namely, the development of gross motor skills and the development of fine motor skills. While every child is different, gross motor skills development typically occurs first. Fine

motor skills, which require control and dexterity in the hands and fingers, come later.

Gross motor skills involve the use of large muscles and body parts, like the arms and legs. Running, jumping, balancing and dancing are some examples of gross motor skills in action. For a typically developing child, active movement and freedom to explore their daily environments helps them develop these skills.

Fine motor skills, on the other hand, refer to small muscle movements in parts of the body like the fingers, toes and feet. Combining the senses with movement, what we call perceptual motor skills, fall under this category. Hand-eye coordination, which builds the foundation for writing and drawing, is one such example, and there are many more daily activities that require these skills.

It is common knowledge that children are little balls of unbridled energy. This energy is essential to make the necessary neural connections for overall holistic growth. Thus, exercise and movement of any form lead to increased blood flow in the body.

With increasing blood flow to the brain, the child becomes capable of acquiring new information and concepts. It is the development of gross and fine motor skills that enables a child to be healthy and fit. Not only that, children learn to be more aware of their sensory understandings and recognize their implications to implement well in the future.

Discussion

The goal of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. Teachers' role in achieving this goal is very crucial. Teacher has to do multitasking on different levels such as, creating learning environment, providing suitable learning resources, making students active participant, nurturing their creativity etc. To be more specific teacher can engage himself in following activities so that it can be beneficial for students in their holistic development:

- Teachers must have the knowledge about holistic education and they should try to implement all the principles of holistic education in the school. Teaching staff should be resourceful.
- Teacher should apply integrated approach. Integration of various subject provide an interesting and joyful learning to the students.
- Teacher should encourage the students to realize about themselves the meaning of life and make them strong to meet the challenges of the complex world. They should teach about the humanitarian values which help the students to contribute towards a better world.
- Teachers in the classroom and playground can teach about trust, honesty and punctuality through teaching them concepts like "honesty is the best policy", through narrating stories.
- Teacher and school authority should try their utmost to make the school attractive; it will

help the teachers to make education more holistic.

- Teachers can organize moral value classes every day or once in a week, teach them values through playing games and narrating stories.
- Teacher should be seen as a friend, a mentor, a facilitator or an experienced travelling companion for the students.
- Teacher should try to be familiar with every child separately and as soon as possible; Parents may give information about special likes and dislikes, and interests of children.
- It should be a teacher's duty to make sure that the activities are appropriate for children's development; interesting, challenging and tangible activities help children to feel comfortable in the new environment.

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