Bharti Airtel Foundation

25 YEARS CELEBRATION

CONVOKE 2024

National Research Symposium for Teachers and Heads of Schools

Message from
Ms. Mamta Saikia,
Chief Executive Officer
Bharti Airtel Foundation

It is with a sense of pride and renewed commitment that we release our CONVOKE 2024 report. Each year, CONVOKE continues to reinforce our mission of transforming education in rural India by creating a platform for educators, researchers, and thought leaders to share, learn, and collaborate on evidence-based innovations and best practices in teaching and learning. The platform aims to cultivate an aptitude for encourage use of action oriented research as a tool to enhance teachers' capabilities and boost evidence based pedagogy and decision making practices to improve student learning outcomes in line with the National Education Policy 2020.

In 2024, CONVOKE remains dedicated to amplify the voices of educators working in diverse and remote areas. We witnessed a remarkable engagement from educators across diverse geographies, with over 123 research papers submitted from 15 states/UTs.

The discussions this year highlighted innovative teaching and learning methods. For instance, "Enhancing Learning Experiences Through the Use of EdTech" by Tanu Priya Sharma highlighted the importance of evaluating the effectiveness of EdTech tools such as simulations, VR, AR, AI tools in enhancing class participation. The research conducted by teachers also touched upon key aspects of holistic education, such as the paper by Namarita Sharma "A Case study of GHSS Jakh, Jammu and Kashmir" which evaluates the impact of life skills education on student's growth and development in areas such as leadership, problem solving and managing stress. In the same vein, the discussions also focused on using locally available resources to make learning interactive and accessible. For example, the paper "A Novel Approach to Teaching Time Measurement in Class 6 Mathematics: GOALS Pedagogy" by Sharmila Begum, employed locally available games, observations and culturally relevant stories to teach time measurement. Further, I am especially Inspired by the focus on girl child education, with many papers offering comprehensive approaches to reduce girls' dropout rates through parental involvement, remedial support, and improved sanitary facilities.

As we reflect on the insights shared at CONVOKE 2024, I am filled with optimism for the future of rural education in India. Together, we are shaping an educational ecosystem where teachers are empowered to be researchers and innovators, where students are inspired to learn and grow, and where communities stand united in their commitment to quality education for every child.

I extend my deepest gratitude to all the educators and researchers who have contributed to this year's CONVOKE. Your work fuels our mission and drives us closer to a future where every village child receives an education that prepares them for the challenges and opportunities of tomorrow.
Let us continue to build this foundation of shared learning, innovation, and commitment to excellence.

With sincere thanks and best wishes,
CEO, Bharti Airtel Foundation
Jai Hind

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CONVOKE 2024: Celebrating Excellence in Education and Innovation

The Bharti Airtel Foundation's flagship initiative, CONVOKE, has evolved significantly since its inception in 2017. From a collaborative platform for knowledge sharing, it has grown into an annual National Symposium, bringing together educators, researchers, and policymakers to drive meaningful transformation in the education sector. This year, CONVOKE received an overwhelming response, with 123 educators from 15 states and Union Territories submitting research papers. These contributions exemplified the dedication of teachers in leveraging research to refine teaching practices, improve classroom learning, and share best practices with their peers.

This year's CONVOKE 2024 Award Ceremony was held along with the launch of TheTeacherApp. The event was a testament to the unwavering commitment of educators to research-driven teaching practices and innovation in classrooms. By fostering a culture of research and collaboration, the event set the stage for impactful changes that will shape the future of learning in India.

Distinguished Addresses

"Educating the next generation and ensuring clarity of thought among students is crucial for India's future. The role of teachers in shaping young minds will determine our ability to lead the global economy." – Honorable Union Minister of Education, Shri Dharmendra Pradhan.

The event commenced with inspiring addresses from esteemed Board of Governors and Leadership of Bharti Airtel Foundation, including Co-Chairman Bharti Airtel Foundation - Rakesh Bharti Mittal, former CEO Bharti Airtel Foundation - Lt Col Vijay Chadda, CEO Bharti Airtel Foundation - Mamta Saikia and Director Bharti Hexicon Limited - JS Deepak.

Rakesh Bharti Mittal, Vice Chairman of Bharti Enterprises and the driving force behind Bharti Airtel Foundation's initiatives in education highlighted the importance of upskilling teachers. By building teacher's capacity, the nation is not just "elevating educators but also elevating India." Highlighting the crucial role of a teacher in student's overall wellbeing, he further added "teachers are like candles that burn to spread knowledge and light for others". Through Bharti Airtel Foundation, Rakesh Bharti Mittal continues to drive impactful education reform, focusing on equity, access, and technology-driven learning to empower students and educators across India.

Lt Col Vijay Chadda, Mamta Saikia and JS Deepak echoed similar sentiments and emphasized the pivotal role of teachers in shaping the nation's future. They reiterated that teachers are the "most valuable resource" in education and must constantly strive to learn and upskill themselves. With the rapid pace of technological advancement, educators were urged to embrace technology and integrate it seamlessly into their teaching methodologies. "Teachers must realize their commitment and passion to the classroom is what fuels the nation's progress." They emphasized the need for continuous learning, urging educators to walk hand in hand with technology as it becomes an essential part of education through The Teachers App.

This session was concluded with an address by the Honorable Union Minister of Education, Dharmendra Pradhan.

Union Minister of Education Dharmendra Pradhan

Union Minister of Education, Dharmendra Pradhan, lauded the Bharti Airtel Foundation's innovative efforts, particularly The Teacher App, describing them as truly commendable. He extended heartfelt appreciation to Rakesh Bharti Mittal, BAF CEO Mamta Saikia, Board Members JS Deepak, and Col Chadda for their dedication and commitment. Pradhan also expressed gratitude to Airtel, acknowledging the company's timely and substantial impact on education.

At this pivotal moment, as the National Education Policy (NEP) 2020 is being implemented on a full scale, Pradhan highlighted the multifaceted stakeholders involved—students, parents, teachers, and society as a whole. He emphasized that while students are central, they are incomplete without teachers. Historically, India's post-independence teaching approach has been student-centric, but the indispensable role of teachers remains paramount.

Pradhan noted that, until now, most EdTech innovations have primarily benefited children from private schools or those with the means to afford them. He commended the Bharti Airtel Foundation for responsibly focusing on the primary catalyst of education—teachers. The success of NEP 2020 hinges on teacher capacity building, necessitating dedicated syllabi, course patterns, pedagogy, and curricula. Recognizing this, the Hon'ble Prime Minister has allocated a dedicated budget and urged district administrations to establish Centers of Excellence (COEs) for the continuous evaluation and upskilling of DIET teachers who instruct primary and elementary grades.

In the process of implementing COEs, Pradhan personally examined the essential components required for their success. He observed that India is currently the world's fifth-largest economy and is projected to become the third-largest in the coming years. With the nation's rapid economic growth, it has the potential to emerge as the world's leading economy—the global growth engine—in the next two decades.

Pradhan posed a critical question: How will this transformation occur? The answer lies in educating the next generation and ensuring clarity of thought among students. Teachers are the cornerstone of this clarity. Every individual has received foundational knowledge from a teacher. A child's ability to comprehend the world and envision their future role is crucial. In a technology-driven economic landscape, will our children merely be users of technology, or will they innovate and enhance it?

During visits to rural India, Pradhan observed an incredible level of curiosity and critical thinking among children. However, he raised pressing questions: Are our teachers adequately equipped to nurture this curiosity and critical thinking? Are our students acquiring the necessary skills to thrive in a technologically advanced economy? Future mapping must become a shared priority for both teachers and students.

Pradhan extended his deepest gratitude to the Bharti Airtel Foundation, noting their consistent prioritization of social causes. As Education Minister, he takes immense pride in witnessing teachers transition from rote learning to a competency-based learning environment, where outcomes are measured more scientifically.

Airtel has played a crucial role in democratizing education technology, with the potential to reach one crore teachers across India. These initiatives stand to impact 260 million school-going children, particularly in rural India, where 60% of the nation's children reside. The Teacher App will be instrumental in bridging educational gaps, ensuring equitable learning opportunities for all.

The Education Minister congratulated all CONVOKE winners and participants, acknowledging their dedication and contributions to advancing evidence informed education in India.

Panel Discussion: Using Research to Impact Classroom Learning

A major highlight of the ceremony was a panel discussion featuring winners of CONVOKE Moderated by Mr. Binu Nair, the session brought together esteemed educators, including Miss Tanu Priya Sharma, Miss Namrita Sharma, Miss Sharmila Begum, and Rupa Borekar, who shared their insights and experiences.

Namrita Sharma emphasized the importance of integrating life skills into the school curriculum. She noted that while aspects of life skills are already present in the Indian education system, there is a need to ensure that students can apply these skills effectively in real-life situations. She also referred to organizations such as WHO and UNICEF, which have highlighted the critical role of life skills in holistic development. Namrita further emphasized that life skills should be embedded within the curriculum rather than being treated as a separate subject.

Tanu Priya Sharma underscored the significance of EdTech as a transformative tool in education, especially in the post-COVID era. She spoke about how technology has empowered her as a biology teacher to conduct virtual dissections, particularly in schools lacking laboratory facilities. However, she also addressed common misconceptions about EdTech and acknowledged challenges such as limited device access, internet connectivity issues, and the need for digital training for teachers. She highlighted the Teacher App (TAPP) as an initiative aimed at making educational technology more accessible to educators across India.

Rupa Borekar shared her inspiring journey of launching the Schools on Wheels initiative during the pandemic. She detailed how she connected tribal students to education through innovative mobile classrooms, demonstrating how EdTech can bridge accessibility gaps and provide learning opportunities to underserved communities.

Sharmila Begum introduced her innovative GOALS (Games, Observation, Application, Logic, and Stories) pedagogy, an experiential learning approach designed to make mathematics more practical and engaging. With 18 years of teaching experience, she observed that students often struggled with real-world applications of mathematical concepts. The challenges intensified post-COVID, as she encountered students with varying learning abilities. To address these issues, she developed the GOALS method to help children incorporate math into daily life Her approach exemplifies how experiential learning can bridge conceptual gaps and foster a deeper understanding of core subjects.

Executive Summary

Initiated in 2015, The Bharti Airtel Foundation's CONVOKE is an annual conference which aims at creating a common collaborative platform for network and knowledge sharing among the participants. A wide range of crucial issues relating to quality in schools, current practices in the achievement this quality in school education, enhancing teacher's capability and exploring best practices and lessons from different schools/educational institutions are studied and shared. In 2021 Convoke grew into a national Symposium with the partnership of NITI Aayog in ensuring the benefits of such an event reached across India.

Key Objectives of Convoke

Convoke contributes towards realizing the vision of NEP 2020 by supporting the professional development of the teaching community and inculcating scientific thinking at the school level, empowering the head of the schools and teachers. The specific objectives of Convoke are:

a) To provide an opportunity for teachers (pre-service and in-service) and educationists from the grassroots to showcase good practices using scientific approach and action research.

b) To use research as a tool to enhance teachers' capabilities and encourage evidence based decision making practices to improve quality student outcomes.

c) To provide exposure to the participants from rural schools with educational research and researchers from national and international level.

Convoke Research Selection Process and Rubric

- CONVOKE 2024 was announced in June on Bharti Airtel Foundation's The Teacher App and other social media platforms.
- Registration was open from 10th June to 30th August.
- Research papers were received from 123 participants from 15 states and UTS.
- After the first round of elimination, 50 papers were sent to an external agency for evaluation.
- Research was evaluated on a predefined rubric that took into consideration

Statement of purpose	Research design
Literature review	Sampling
Objectives	Research Instruments
Hypotheses	Findings and conclusions

- The top 12 top papers from 7 states/UTs were selected for the jury round.

The Three-Bench Jury Presentation

In Session I

Enhancing Teaching-Learning Experience Through Tech and Other Tools featured research on leveraging technology to improve education, particularly in Science and Math. Teachers from Delhi, Uttar Pradesh, and Rajasthan presented their findings on innovative methods for enhanced learning outcomes. Tanu Priya Sharma (Delhi) explored the impact of EdTech tools like VR, AR, and AI on post-COVID learning, highlighting improved engagement and comprehension. Praveen Mishra (Uttar Pradesh) examined science communication in schools, emphasizing customized lesson plans and instructional technologies to boost student confidence and participation in science-based activities. Bhawna Bharadwaj (Uttar Pradesh) assessed AI-curated ICT tools in Accountancy hybrid learning, finding significant improvements in student performance and retention. Seema Khatri (Rajasthan) studied the availability and usage of science kits in government schools, underscoring their role in fostering scientific temper and hands-on learning.

In Session II

Significance of Life Skill Education & Its Impact on Students Teachers from Jammu & Kashmir, Delhi, and Puducherry presented studies on the importance of life skills and mental health in holistic education. Jyotsana Nayyar & Manisha Pavi (Delhi) explored the impact of hygiene education on student well-being through community engagement and parental workshops. V. Jayasundhar (Puducherry) examined how mental health and life skills influence academic performance in 10th-grade Science. Madhavi Khajuria (Jammu & Kashmir) assessed the role of AI-driven ICT tools in Accountancy education, highlighting their potential to enhance engagement, retention, and test scores through interactive digital platforms. Namarita Sharma (Jammu & Kashmir) conducted a case study on GHSS Jakh, analyzing the impact of science kits in government schools. Her research emphasized the importance of hands-on learning in fostering scientific curiosity and practical application of theoretical concepts.

In Session III

In Session III Influence of Teacher's in Training on Student's performance, Educators from Madhya Pradesh, Tamil Nadu, and Delhi showcased innovative teaching strategies that leveraged locally available resources and adaptive learning methods to enhance student performance. Neha Bahuguna (Delhi) implemented a multi-modal approach for teaching linear equations, integrating visual (DESMOS software), kinaesthetic (live Cartesian plane), and auditory (songs and discussions) techniques. Rashmi Pillai (Madhya Pradesh) assessed the impact of a Differential Learning Program (DLP) in Geometry, demonstrating how personalized lessons and technology-driven activities improved performance and confidence in 4th-grade students. Tapsa Verma (Delhi) evaluated teacher training programs under Mission Buniyaad, highlighting activity-based learning, CAMaL strategies, and customized content as effective interventions for bridging foundational literacy and numeracy gaps, despite challenges such as resource constraints and administrative burdens. Sharmila Begum (Tamil Nadu) examined the GOALS pedagogy (Games, Observation, Application, Logic, Stories) for teaching time measurements in 6th-grade Mathematics, finding that interactive activities and storytelling methods significantly enhanced student comprehension.

Jury Partners

The jury comprises esteemed and highly experienced professionals, including social sector leaders and educators with extensive expertise in research, policy, and education. Their diverse backgrounds and profound understanding of systemic challenges in education equip them to critically evaluate the papers using a meticulously designed rubric. This ensures a comprehensive and fair assessment of the contributions, emphasizing innovation, practicality, and impact in the presented work.

Comments from the Jury

Session I

In the session on The Significance of Life Skill Education and its Impact on Students, I was deeply moved by the commitment of teachers who, despite limited resources, pour so much effort into fostering essential life skills in their students. Their dedication is inspiring, and it's clear that, with added support, their impact could be even more transformative. By providing teachers with targeted capacity-building opportunities—especially in research methodologies and deeper frameworks for understanding life skills—they could amplify their already remarkable contributions.

~ **Rachana L**

Session II

In my panel, teachers presented their classroom innovations and experiments that they had undertaken. All of them tried to understand the impact of their innovations on improving student learning. However, certain complex challenges were also brought forth while discussing these challenges. For instance, the separation of children who need more support in math from the rest of their class was problematic as those children might feel labeled and will have to cover up other syllabus once they are merged with regular classroom. Furthermore, the research done on teacher education needs to go deeper in understanding the impact of training on shifting practices in classrooms.

~ **Akanksha Agarwal**

Session II

During the recent Convoke event, teachers presented their research papers with great enthusiasm, showcasing a genuine interest in exploring new classroom approaches. However, in Session 1, many faced challenges with research methodologies, which limited their ability to fully address their research questions. While a few teachers responded effectively to the jury's inquiries, there is significant potential for growth in research proficiency across the group. Considering their dedication, a tailored crash course on research methodologies offered by Bharti Foundation could be invaluable. Such training would empower teachers with the skills needed to confidently approach, analyze, and interpret research problems, enhancing their impact in the classroom.

~ **Sahana VP**

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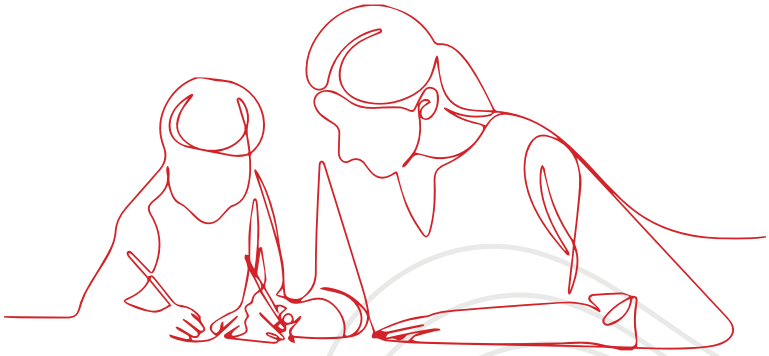


Session I

Enhancing Teaching Learning experience through the use of Tech and other tools

Jury | Session I

Abhimanyu Maheswari, Center Square Foundation

Currently as Senior Project Lead in the EdTech team, he works closely with different EdTech startups on driving their strategy for scale, engagement and product. Overall has 9 years or work experience in education sector which started with the Teach For India fellowship where Abhimanyu taught for 2 years and then worked with teachers from different affordable private schools across the country on classroom instructional practice and FLN curriculum. Abhimanyu holds an MBA from Rotterdam School of Management, Netherlands.

Sahana, Sattva Consulting

As a senior consultant on Sattva's Impact Measurement and Advisory team, Sahana has over 6 years of experience in the development sector. She has worked on conceptualizing program designs and frameworks to deploying and evaluating the same, predominantly in the field of education. Before Sattva, she worked with the Centre for Education Innovation and Action Research (CEIAR) at the TATA Institute of Social Sciences in the capacity of an action researcher.

Dr Keerti Sharma, Bharti Airtel Foundation

As Head Curriculum and Teacher training. Experienced Educator with a demonstrated history of working in the education management industry. Skilled in Experiential Learning, Business Development, Educational Technology and Training, Instructional Leadership, and Team Building.

Paper 1: Enhancing Learning Experiences Through the Use of EdTech by Tanu Priya Sharma, Delhi

About the Author :

PGT at Army Public School Shankar Vihar, New Delhi, Tanu Priya Sharma has over 16 years of teaching experience. An avid researcher she has earned badges of School Innovation Ambassador, AICTE, Microsoft Innovative Educator Expert and Adobe Creative Educator. She is a CBSE Resource person and has mentored projects on Design thinking and Innovation, which have been recognized at State, National and International level.

Introduction:

Post Covid, students' engagement and attendance in classroom has been significantly impacted. To attempt to re-engage students and enhance the learning experience, it is imperative to critically evaluate the use of Ed Tech tools in classroom learning. The study evaluates how EdTech tools enable students by instilling 21st century skills in learners, and aids teachers to provide timely feedback, improve students' comprehension of concepts and academic performance, foster a collaborative and interactive learning environment. However, the study also recognizes the challenges in integrating these technologies in classrooms. Issues such as the non-availability of devices, internet access, as well as the time constrains for curriculum completion.

Methodology:

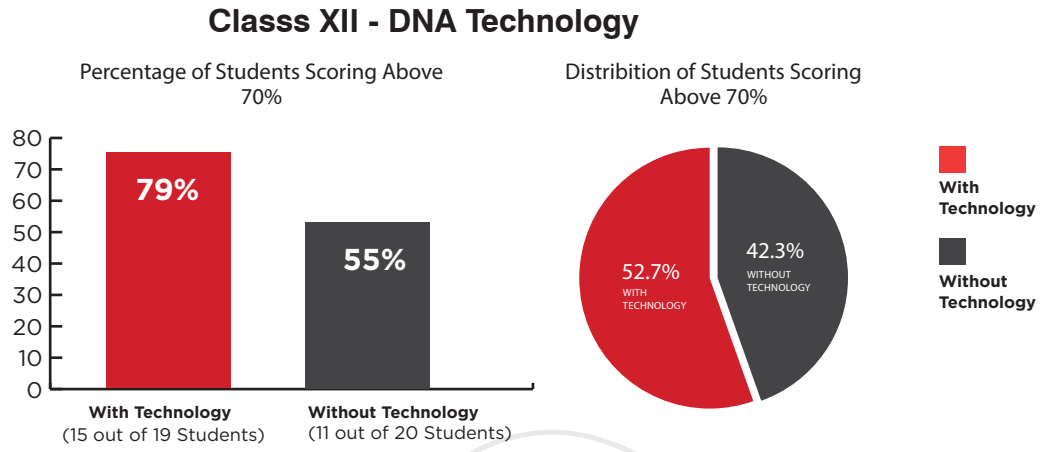
The present study employs a mixed-methods design conducted over a two-month period. The sample consists of 200 students from classes IX to XII, randomly selected from APS Shankar Vihar, alongside 10 teachers from various subjects (Social Science, Biology, Physics, Economics, and Mathematics) and 10 parents of students (selected randomly) from classes IX to XII.

Quantitative Data: Collected through online questionnaires filled out by the 200 students, measuring their engagement, understanding, and comfort with using EdTech tools.

Qualitative Data: Gathered from interviews and class/peer observations of students, teachers and interview with parents after informing about the EdTech integration

Intervention:

Different Ed Tech tools - Simulations, VR, AR, AI tools - employed by teachers and impact of using these Innovative tools was observed in their overall attendance, class participation, engagement during learning and academic performance.



Key Findings:

1. Students favoured the use of EdTech tools for better understanding across subjects, improving class participation, and promoting peer collaboration. However, internet and device limitations hindered consistent engagement.
2. EdTech fosters 21st century learning skills. It provides quick feedback and supports effective teaching practices.
3. However, teachers faced challenges in fully achieving learning outcomes due to usability issues and lack of curriculum integration.
4. Educational tools promote critical thinking, experiential learning, and digital literacy, enhancing students' readiness for future opportunities.

Conclusion;

1. The study found that EdTech tools are favored across all grades, helping students acquire digital skills, become more independent, enjoy learning, and develop 21st-century skills, aligning with NEP 2020 goals.
2. Teachers supported the appropriate use of these tools in classrooms, noting benefits such as better engagement, active participation, whole-class involvement, and quick feedback on learning outcomes.
3. However, they reported minimal enhancement for weaker students.
4. Challenges include lack of uninterrupted internet, absence of smart boards in all classrooms, and reluctance among senior secondary teachers due to time constraints and curriculum coverage.

Learners' demonstrating 21st century skills- 3L's




Recommendations:

1. Subject specific technological training should be provided to teachers.
2. Schools should offer dedicated technical support to address any operational issues. Institutions should initiate pilot programs to test new EdTech tools in specific classes or subjects, gathering data on their impact before a full-scale implementation.
3. Workshops should be conducted by educational institutions to educate parents to encourage constructive screen time for their wards.
4. Implementation of strong data privacy policies and cybersecurity measures to protect student information while using digital tools.
5. The teacher-student ratio should be maintained at 1:30 for the effective implementation of EdTech tools.

Paper 2: A Study of Science Communication in Schools: Current Trends, Opportunities and Challenges by Praveen Mishra, Uttar Pradesh

About the Author :

An Assistant Teacher in Basic Education Department Gorakhpur (U.P.), Praveen runs a competition awareness campaign for students "Hauslo ki Udan" to encourage students to participate in events. In 2022, he was awarded the prestigious "State Teacher Award" by Uttar Pradesh Government.

Introduction:

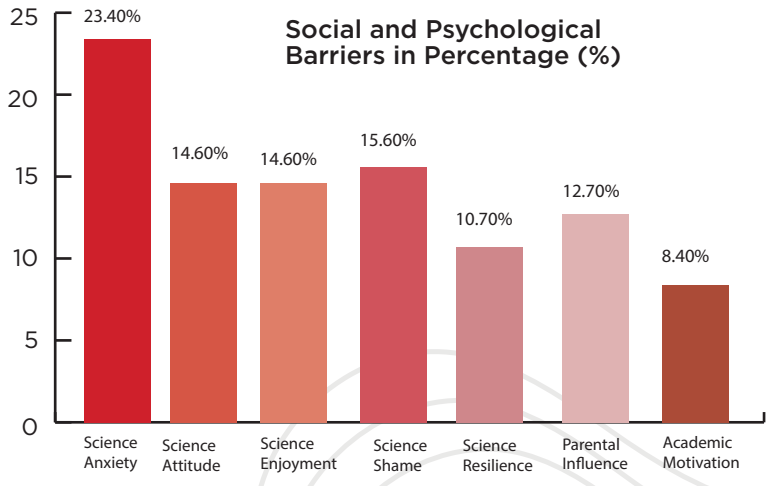
Science is one of the most important subjects in human life but afraid of failure, past insecurities and fear of change ignite uncomfortable emotional states which prevent students from taking full advantage of the science learning opportunities. The purpose of the paper is to discuss the issues and concerns related to science communication in schools that were undertaken to achieve sustainable success in science teaching. This paper suggests that small social and psychological interventions in learning like student's feelings, thoughts & beliefs can lead to large gains in student achievement and sharply reduce learning gaps even every day, month and year.

Methodology:

This is a preset case study based on the personal interview of 300 randomly selected students (150 Boys and 150 Girls) from 4 upper primary school of district Gorakhpur in which the research questions asked by the researchers to the students were based on these 7 parameters - Science anxiety, Science attitudes, Science enjoyment, Science shame, Science resilience, Parental influence and Less academic motivation. The researcher has used open-ended questions for interview of the students and collect data for study & analysis.

Key Findings:

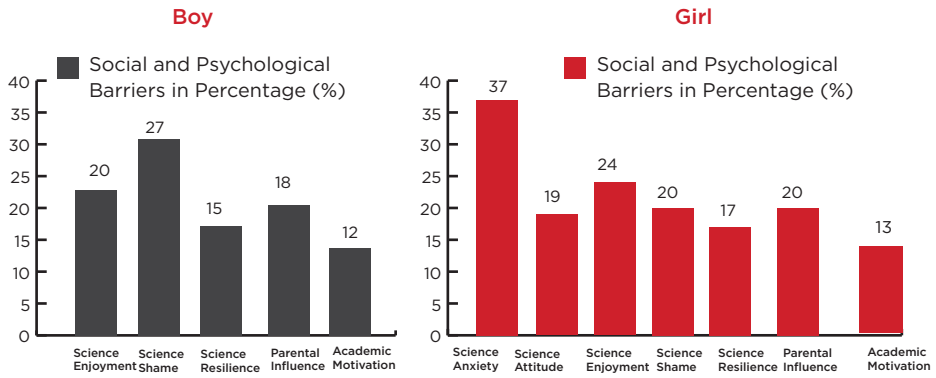
The researcher found that various kinds of perceptions, attitudes, misconceptions, social and psychological factors affect science learning.



Cumulative data of research showed that more number of students admit that science anxiety is the major reason as social and psychological barriers in science learning while 8.4 % talked about academic motivation.

There are a myth spread in society about girl's science learning that they are not good in science but research showed that there some places there are almost same psychological barriers among boys and girls.

Genderwise social and psychological barriers



Analysis:

While analyzing the responses, it makes a clear sense that most of the students have perception that science is a tough subject. Students self-confidence and negative attribution have been a major issue of their downfall in science learning. Some students do not want to study science just because they do not find its utility in future. Some students felt that science curriculum is not suitable for them.

Intervention:

"Following interventions were used to overcome the challenges of science communication" -

1. Engaging Lesson Plans
2. Curriculum based instruction and use of existing EdTech and Science kit
3. Maintaining open communication with parents/guardians on student progress

Conclusion:

After working on findings of research, mutual understanding and good bonding with the students as well as proper way of science communication, students not only participated in science class but also participated in different science based competitions e.g. Inspire award, RAA, NCSC, National Means Cum Merit scholarship, Science Olympiad etc. Due to student's achievement, student enrollment number has increased in the school. More number of students have taken science stream after clearing 8th grade.

Recommendation:

Multi-pronged strategy is needed to make science communication more effective in classroom like use of modern technology in classroom for better learning outcomes, breaking down complex scientific concepts into easy to define terms, using visuals and science kits to communicate scientific information, using humour to communicate scientific information etc.

Every challenge related to science communication can be tackled when teachers, parents and educational authorities start to feel an urgency and recognize advantages of changing traditional methods of science learning and communication used in classroom.

Paper 3: Impact of Use of AI Curated ICT in Teaching Learning of Accountancy During Hybrid Classes by Bhawna Bhardawaj, Uttar Pradesh

About the Author :

With over 25 years of teaching experience, Bhawna is a PGT Commerce at Amity International School, Ghaziabad, U.P. Her notable achievements include drafting of the entrepreneurship syllabus for NIOS, acting as CBSE Head Examiner for Accountancy & Financial Markets Management and being instrumental in providing online education through Svayam Prabha channel and e-content on NCERT's Diksha portal.

Introduction:

In today's fast-paced digital world, students are bombarded with an overwhelming influx of information from countless sources, making it increasingly challenging for them to focus. The allure of gadgets often distracts students from traditional classroom learning, leading to a shorter attention span and diminished engagement. However, amidst these challenges lies a remarkable opportunity: technology can be harnessed as a powerful ally in education. By integrating innovative tools and interactive experiences into the learning process, we can create an enriching environment that not only captivates students' attention but also fosters their overall development.

Methodology:

Students attempting brainstorming activity on wordwall.com

The journey began with a traditional "chalk and talk" approach, where I delivered the lesson in a conventional format, followed by a test that revealed an average score of 11 out of 20—an indicator that there was significant room for improvement. Determined to enhance the learn ing experience, I transitioned to a hybrid model that fully embraced diverse ICT tools at every stage of the lesson. The planning phase involved extensive research to craft an engaging lesson plan.

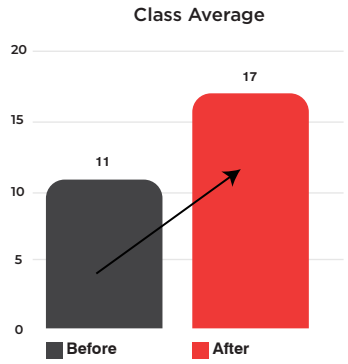
I designed a visually appealing PowerPoint presentation that would captivate my students' attention and enhance their understanding. Additionally, I curated interactive activities using platforms such as Wordwall.com, Pear Deck slides.com, Quizizz.com, and Topworksheet.com.

The topic was introduced with a dynamic brainstorming session on Wordwall.com, sparking student interest and participation. I then utilized the Smart Board and a stylus to deliver an interactive explanation of the content via the PowerPoint presentation, making complex concepts more accessible. For practice, students engaged with interactive Pear Deck slides, fostering collaboration and allowing them to explore the material deeply. To gauge their understanding, I conducted a quick revision test on Quizizz.com, which provided instant feedback on their comprehension levels and allowed them to analyze their performance against their peers. This immediate insight proved invaluable in identifying areas for improvement. To wrap up the lesson, I assigned homework on Topworksheet.com, reinforcing their learning in an interactive manner.

Finally, to evaluate the overall effectiveness of integrating these ICT tools, a questionnaire was administered to gather students' insights and experiences. This feedback will not only inform future lessons but also highlight the impact of blending technology with traditional teaching methods, ultimately aiming to create a more engaging and effective learning environment for my students. A week later, a follow-up class test was conducted, revealing a significant improvement in the class average, which soared from 11 out of 20 to 17 out of 20.

Intervention:

The intervention of this study centers around the strategic integration of AI-curated ICT tools into the teaching and learning process of Accountancy, specifically focusing on the topic of "Journal Entries" for Class 11 students. The intervention is designed to enhance student engagement, understanding, and overall academic performance through transition from traditional to hybrid learning activities. As part of the intervention, there may be a focus on professional development for educators to familiarize them with the effective use of ICT tools in their teaching practices. This ensures that teachers are well-equipped to implement technology in a way that enhances learning outcomes.



Key Findings:

The analysis of the findings revealed several important insights: (1) The subject knowledge of the majority of students improved significantly. (2) The learning process became more accessible and understandable for them. (3) Their attention levels increased, and their listening skills became more effective. (4) Due to their improved scores, students experienced a boost in self-confidence. (5) There was a noticeable increase in interest of the subject. (6) The learning retained effectively within students indicating that this would certainly benefit them in their higher studies. (7) Most importantly, students developed a positive learning attitude as their attention spans expanded.

Conclusion:

The study confirmed the hypothesis that there is a positive relationship between student performance and the use of AI-curated interactive ICT tools in the teaching and learning process of Accountancy. Embracing technology in the classroom opens doors to a world of encouraging experiences, transforming education into an exciting journey of discovery and growth.

Recommendations:

To create an impactful ICT classroom following is recommended:

a. Teachers training for use of interactive ICT tools

b. Development of Infrastructure that will enable usage of ICT tools in classrooms

c. Setting up Education Incubators

Paper 4: Status of Availability and Usage of Science Kits in Government Upper Primary Schools by Seema Khatri, Rajasthan

About the Author :

A government primary School teacher at Sheikhon Ki Dhani Ladipura, Rajasthan, Seema likes to remain aware of the innovations happe vning in education, new schemes, their implementation and the end impact we create. She keeps making continuous efforts so that students can get full benefit of innovations and new schemes.

Introduction:

Education is the foundation of human development. The main objective of education is to refine the behavior of students according to the needs and aspirations of human society. At present, emphasis is being given to activity based education. By learning by doing, the tendency of rote learning in students is reduced and the knowledge learned remains permanent.

In present times, keeping in view the importance of science, science teaching is being done at every level of education. Science learning aims to inculcate scientific temperament among children i.e. objectivity, critical thinking, acquisition of skills, understanding of methods and procedures, nurturing natural curiosity, aesthetic sense and creativity.

In this context, the department has provided kits in every government upper primary school. The knowledge learnt from the science kit becomes entertaining, enjoyable and permanent. Science kit is multipurpose. It helps in achieving the set objectives easily and also saves time.

Methodology:

For the present research study, a self-made open questionnaire was used. For the survey, three questionnaires of 10 questions each were prepared to obtain information from the head of the institution, science teacher and students of class 6, 7 and class 8 of the government upper primary school. There were 30 questions in these three questionnaires. Since the nature of the research is descriptive, hence the survey method has been used critically for this.

Intervention:

Intervention is one of the basic elements that lay the foundation for work. Intervention is the most important element in starting research. To study the presented problem, the regional and personal research limitations and the extent of the study have been determined in such a way that this research has been limited to Jaipur district only. A total of 20 government upper primary schools of 10 blocks of Jaipur district have been kept for the study. The research study is limited to 2 government upper primary schools of each block out of 10 blocks.

Key Findings:

Intervention is one of the basic elements that lay the foundation for work. Intervention is the most important element in starting research. To study the presented problem, the regional and personal research limitations and the extent of the study have been determined in such a way that this research has been limited to Jaipur district only. A total of 20 government upper primary schools of 10 blocks of Jaipur district have been kept for the study. The research study is limited to 2 government upper primary schools of each block out of 10 blocks.

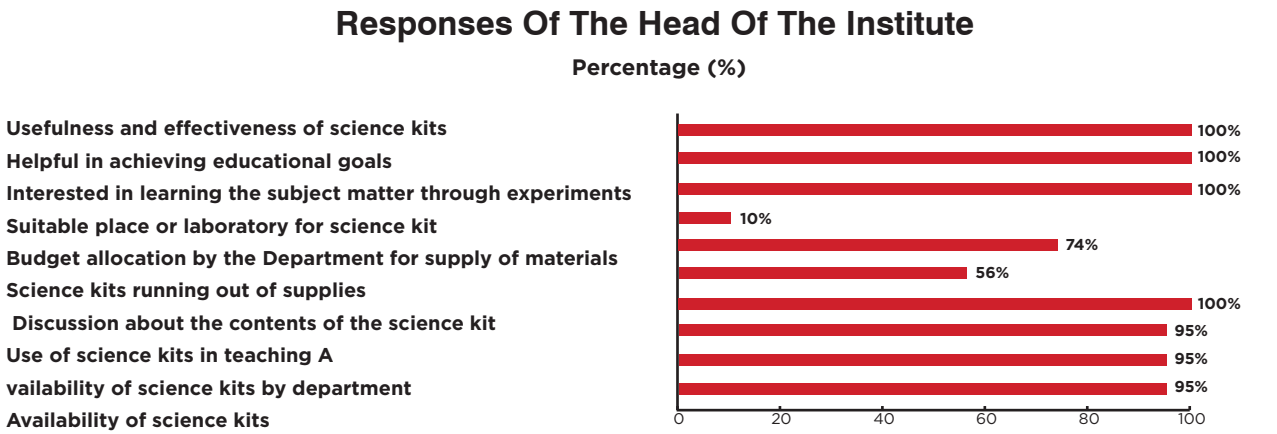
The presented research is very important in today's technological era. It communicates the effort to develop an investigative tendency in students. The usefulness of this research for the development of interest in science subjects among students, scientific thinking and practical use of knowledge is undisputed.

The main findings of the research were that considering the current environment, teaching through science kits keeping in mind the scientific approach of students was a very practical teaching. In this, emphasis has been given on children learning by doing. Students' interest in experiments in science subject was aroused. Scientific attitude could be developed even in students of remote, rural areas.

Conclusion:

In the presented research findings, whether science kits are available in government upper primary schools or not? To know the actual status of use of science kits, opinions were obtained from the heads of institutions, teachers and students of 20 government upper primary schools of 10 blocks of Jaipur district, which are as follows:

- Science kits are available in all government upper primary schools.
- Science kits are used as per the need during science teaching.
- The use of science kits has increased the interest of students towards science subject.
- The educational objectives set by the use of science kits are easily achieved.
- Science kits are relevant to the curriculum of science subject and its use helps in developing
- investigative and creative tendencies in children.



Conclusion:

The research work done in any field is not considered complete until suggestions are presented to solve the problems present.

Considering the importance of the topic selected by the researcher, it is recommended that the chemical material that is getting expired in the science kit and the new equipment should be supplied on time and budget should also be allocated for this.

From time to time, training should also be given to the science teacher for making and using the science kit.

Session II

Significance of Life Skill Education & its impact on Students

Jury | Session II

Dr Kashyapi Awasthi, Assistant Professor at National University of Educational Planning and Administration.

Her areas of intervention include Research, capacity building, training, teaching, publication, curriculum and course development, conducting workshop and seminars are her core responsibilities which she does for educators from across the county

Rachana Lankapalli, Sattva Consukting

Rachana is a part of the Foundations Advisory team at Sattva and has worked closely with multiple state governments like Andhra Pradesh, Telangana and Karnataka working on projects across the domains of Education, Health and Economic Planning. Presently, Rachana is involved in Project Sampoorna, a consortium-led project that aims to incorporate social-emotional learning for adolescents in government schools in Jharkhand. In this project, she is anchoring partner management and supports government engagement and delivery

Dr Keerti Sharma, Bharti Airtel Foundation:

As Head Curriculum and Teacher training. Experienced Educator with a demonstrated history of working in the education management industry. Skilled in Experiential Learning, Business Development, Educational Technology and Training, Instructional Leadership, and Team Building.

Paper 1: Building Healthy Habits, Integrating Life Skills with Hygiene Education by Jyotsna Nayyar & Manisha Pavi

About the Author :

Manisha Pavi is a mathematics teacher in SKV, Delhi. With over 25 years. Apart from teaching a subject, she has degrees in English, Computer Science, Human Rights and has authored various books. She is a fullbright TEA fellow 2018 and has also been conferred with the Teachers State Award 2021.

About the Author :

Jyotsana is a dedicated primary teacher with 9 years of experience. She is passionate about creating effective teaching learning environment and has developed innovative TLMs to enhance student engagement.

Introduction

Promoting good hygiene in schools is crucial for students' well-being, as emphasized by the National Education Policy 2020. Life skills-based hygiene education aligns with UN's Sustainable Development Goal 6.2, aiming for equitable sanitation by 2030. Many students in the government schools come from marginalized backgrounds and struggle with hygiene due to limited resources and knowledge, impacting their self-esteem, health, and performance. This action research used interactive sessions, parental workshops, and community rallies to instill hygiene habits, leading to improved self-care, confidence, and social acceptance. Teachers and parents reported greater student responsibility and accountability.

1. To investigate the relation between personal hygiene and the health of the government school students and its effect on their performance.
2. What factors contribute to poor personal hygiene in government schools?
3. How can the practice of personal hygiene be improved in government schools?

Methodology:

This study area comprises a Government School of Delhi. The students belong to families of lower income groups. Our Sample size was 40 students (boys: 22 girls:18) of class 3 Age group 8-9 years 42 students of class 9 Age group 14-15 years. The total number of teachers interviewed was 10. The action research, conducted over six months in a Delhi government school, assessed students' personal hygiene practices using a mixed method approach. A survey with Likert scale questions provided a nuanced analysis of students' hygiene attitudes, while semi-structured interviews with students and teachers explored factors behind poor hygiene habits. After focused group discussions, multiple interventions were designed keeping the resources, timeline and techniques into consideration and implemented with a detailed action plan. Post-intervention interviews evaluated changes in habits, health impacts, academic performance, and the effectiveness of parental workshops. In addition, journals were maintained to record observations and keep a track on our progress. Interventions

Behaviour Change Strategies		Indicating Self Awareness
1. Av Aids 2. Parental Workshop 3. Volunteers from NGO	4. Talks by health workers 5. Individual Counselling sessions	1. Cleanliness Monitors 2. Health Monitors 3. Star class with no uniform defaulters

Reinforcement of Hygiene Through Activities

1. Students with poor hygiene are more vulnerable to diseases – 62%

2. Caring parents and healthy students are directly related – 74%

3. Students are comfortable discussing menstrual health and hygiene – 37%

4. Students with poor personal hygiene are less confident to participate in school activities – 82%

Indicating Self Awareness

1. Personal hygiene is a top priority for me – 68%

2. Personal hygiene can make impression on others – 45%

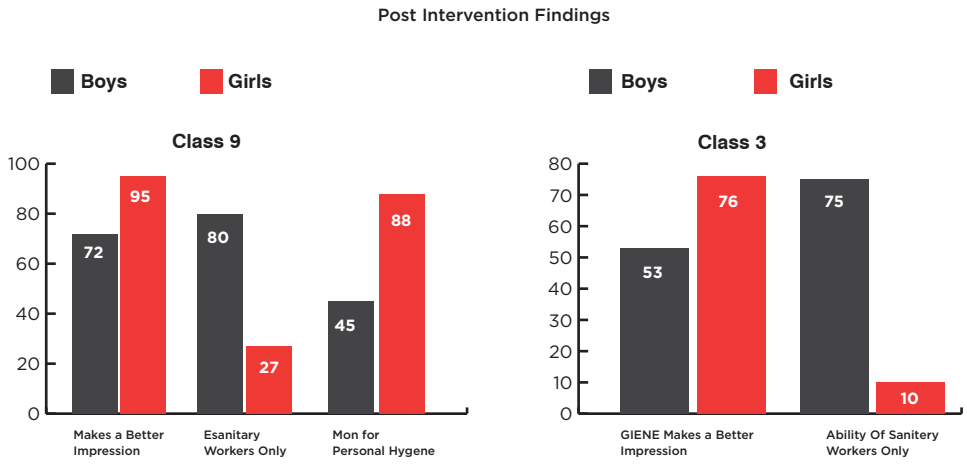
3. Cleaning of surroundings is the only responsibility of sanitary workers – 76%

4. Hesitate to participate in the school events due to unkempt appearance – 82%

5. Students take extra steps during menstruation – 37%

6. Caring parents & healthy students are related – 74%

Post intervention findings:



Conclusion:

Students often overlook personal hygiene, not recognizing its importance or social impact, and tend to avoid responsibility for cleanliness, blaming others. Poor hygiene leads to low confidence and reduced participation in activities. Younger students adapt better to hygiene practices, showing the value of early habit formation, while older students struggle, especially with topics like menstrual hygiene due to taboos. Overcrowded classes hinder teachers' efforts to address hygiene, but students with engaged parents display better habits overall.

Recommendations:

1. A pool of students with leadership qualities can be chosen from the school and trained to teach others.
2. Alumni talks can be organized on Hygiene issues. The students relate more to the seniors as they belong to the same community.
3. Schools should hold hygiene drives, workshops, and health programs focused on students' personal and health development.
4. Putting cleanliness into practice through programs like Shramdaan where the students collaboratively clean their classrooms every Saturday.
5. Assign cleaning projects to students to build understanding of cleanliness and hygiene in the community.
6. The parents should be provided resources and informative materials highlighting the importance of hygiene among their children.Life Skills and Academic Analysis: Utilizing statistical tools to assess and examine the life skills and its impact on their learning.

Paper 2: Impact of Mental Health and Life Skills on the academic performance in Science of Class X students in our school by V. Jayasundar, Puducherry

About the Author :

V. Jayasundar, Puducherry is a trained Graduate teacher with 12 years of experience currently teaching at Calve College Boys Government Higher Secondary School.

Introduction:

To analyze the impact of mental health and life skills on the academic performance in Science, a pilot project was carried out with the students of Class X in Calve College Boys Government Higher Secondary School Kurusukuppam Village, Puducherry.

This pilot project aimed at integrating mental health and life skills education into the curriculum for class X students at Calve College Government Boys Higher Secondary School to improve their academic performance. The project focused on delivering a structured module that covered key life skills, utilizing interactive and experiential learning methods to effectively engage the students.

Objectives:

1. To analyze the impact of mental health on academic performance in Science.
2. To examine the impact of life skills program on students learning of Science.

Methodology:

1. Execution process: Location of the Project

Calve College Boys Government Higher Secondary School Kurusukuppam village, Puducherry

14 Students of Class X were selected for the study. Students were given the opportunity for developing life skills by engaging in activities such as field trips and outings. Further, they were also given awareness and skills training by an NGO for 3 months to analyze and identify their Cognitive Growth, Emotional Maturity, and Social Integrity before and after the training. The analysis was conducted using a 3-point scale questionnaire.

Duration of the Project – 3 Months

A. Steps involved for model project:

1. Orienting the students and planning for execution of the project such as, work allotment, and coordination with guide teachers and places of visit.
2. Making designs and modules for the project, computer related work, presentation of work.
3. Collection of samples and visiting the local areas to analyse the resources of the program.
4. Collection and analysis of data.
5. Documentation and finalization of project.

B. Is the proposed Project inside the curricular framework of the students?

Yes, it is aligned to the Class X, Chapter 13 - Our Environment.

Activities included:

Field Surveys and Collection: Field surveys were conducted to collect diverse seashell samples from village area sea shore (Kurusukuppam, Puducherry), documenting their characteristics, and recording ecological data.

Market Surveys and Interviews: Engaged with stakeholders, artisans, businesses, and consumers through surveys and interviews to understand their perspectives on seashell utilization and market trends.

The tool used:

The academic performance of students was analyzed graphically with pre-test and post-test. The tool used had a three point scale, 0 – No Need, 1 – Very Less Need, 2 – Need, 3 – Need a lot

Q 1 to 5 asked questions on 'Cognitive Growth', Q 6 to 10 asked questions on Emotional Maturity and Q 11 to 16 were on Social Integration.
Average marks of each section was taken for graphical analysis with Mental Health and life skill need on X axis and obtained marks on Y axis.

Interventions:

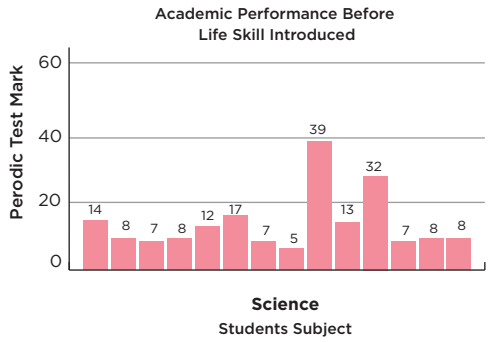
Learning Life Skills: It helps to learn life skills which include Communication skills, Creative thinking, Critical thinking, Empathy, Interpersonal skills.

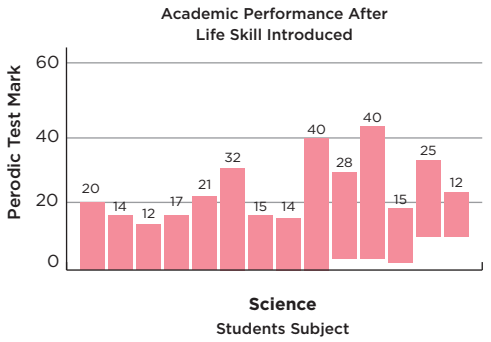
Public Awareness: Dissemination of findings through awareness campaign to public, and educational materials to raise public awareness about the economic potential and ecological importance of seashells.

Academic Performance	
Marks	Range
31-40	A
21-30	B
11-20	C
10 & Below	D

Findings and Analysis of Data:

Graphs of Life Skills of 14 students before and after analysis:





Result:

1. Students demonstrated low academic performance in science before the introduction of life skills project.
2. Students showed improvement in academic performance in science after the introduction of the program.

Conclusion and Recommendations:

The rationale for integrating life skills education into the curriculum for Class X students at Calve College Government Higher Secondary School is rooted in the need to foster holistic development, enhance academic performance, and prepare the students for future challenges. This pilot project aims to develop a comprehensive life skills education program that addresses the cognitive, emotional, social, and behavioral development of students, thereby empowering them to succeed both academically and personally. By investing in life skills education, we are not only enhancing the educational experience of our students but also contributing to the development of a more resilient, adaptable, and socially responsible generation.

Paper 3: Significance of Life Skills in Mental and Social Well-being of School Going Students by Madhavi Khajuria, Jammu & Kashmir:

About the Author :

Madhavi Khajuria is the Senior Lecturer in Botany at Government Higher Secondary School, Dablehar, R.S Pura, Jammu and Kashmir. She is a research oriented and multi tasking lecturer always willing to take up challenges and convert them into opportunities.

Introduction:

India is the most populated country in the world, home to one-sixth of all people worldwide, with five out of every six being between the age of 0 and 19. As per UNICEF, India stands to benefit socially, economically, and politically, if this large number of adolescents are safe, healthy, educated and equipped with information and life skills to support country's continued development. Rate of poverty in India was 4.5% -5% in 2022–2023 and unemployment rate was 9.2%. Adolescents must deal with emotional and mental strain as they navigate the demands of the outside world. To support adolescents, one must establish mental and physical health awareness, promote healthy connections, and create situations where youth feel respected and understood. A vital component of assisting young people in overcoming life's obstacles is education. Integrating life skills into the curriculum is emphasized in the new education policy, 2020. Incorporating life skills and academic and co-scholastic areas into the curriculum can better prepare young people for life's problems as acknowledged by the CBSE. World Health Organisation (WHO, 2000) states that adolescence is a crucial time for the emergence of secondary sexual traits, the development of adult mental processes, and the pathway to sexual and reproductive maturity. Introduction:

Adolescents experience confusion and stress due to hormones and an immature impulse control center in their brains, which can result in emotional and behavioral issues (Kastner & Wyatt, 2002). Teen's stress levels seem to be rising, which could be brought on by substance misuse, peer pressure, an inability to handle schoolwork, a lack of competitiveness, dysfunctional family relationships, etc. and result in maladaptive behaviors (Singh & Kour, 2015). According to reports, 7.3% of teenagers in India have mental illness (Murthy, 2017). This study sought to ascertain the impact of life skills instruction on the mental health of Higher secondary school students in the Dablehar, R.S. Pura Zone (J&K).

Methodology

Procedure: A random sample of 30 students were taken studying in classes 11th and 12th. Inclusion criteria included willingness to complete a full mental assessment and take life skilling coaching via lectures and activities. Consent was taken from parents as well. The age range from 16 and 17 years. The average age group was 16±1 and 60 % of students were males. Birleson's questionnaire was used in the current study for all students before and after intervention. Since there are many life skills, we took coping with stress as a life skill into consideration.

Stress Management Tools:
Mindfulness, time management, connecting with nature, talking with friends and elders, thinking positive, listening to music, good food, reading good literature, exercising, faith and spirituality

Findings:

Thirty students participated in the study. With an average age of 16±1 and 18 students out of 30, (60% of the total) were male. The questionnaire had eighteen items with response scales ranging from 0 to 2. Each scale was totaled separately. A possible depressive condition was indicated by a score of 13 or higher. There was a notable shift in the mental and emotional well-being of the 25 students who scored 13 or higher before training, which was indicative of a possible depressive disorder. Significantly, the number of students who scored above 13 after training was reduced to 6. The two-tailed P value is less than 0.0001. By conventional criteria, this difference is considered to be statistically highly significant.

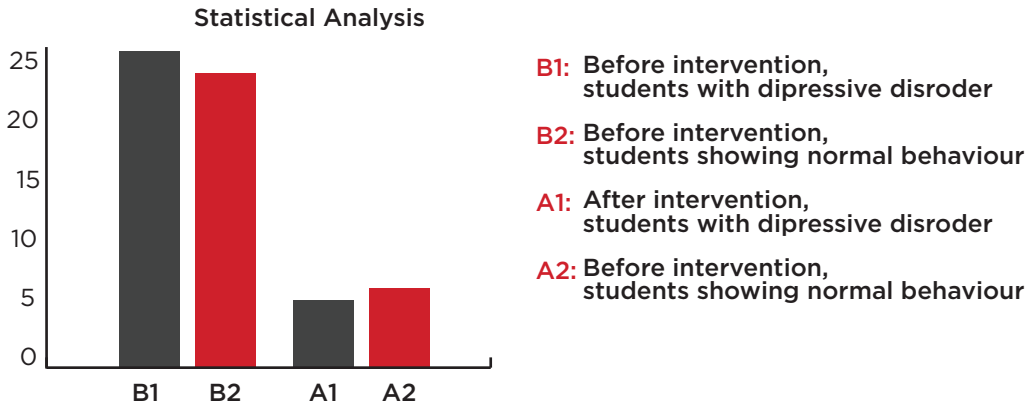
P value and statistical significance:
The two tailed P value is less than 0.0001. By conventional criteria, this difference is considered to be extremely statistically significant.

Confidence interval:
The mean of before minus after equals 6.53 95% confidence interval of this difference: 5.13 to 7.94 Intermediate values used in calculations: t = 9.5001 df = 29 Standard error of difference = 0.688
Life skills effect mental health of students to a significant extend and should be made part of curriculum to make them better human being and responsible citizens. The same has been the mandate of the NEP 2020

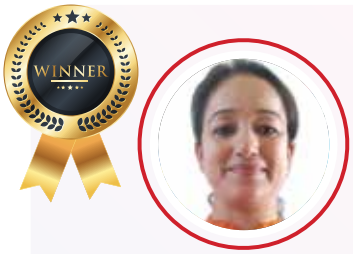
Recommendations:

The study's findings showed that life skills instruction generally has a major impact on school-age children's mental and emotional health. The abilities that children learn in school and the ones that they need in the real world diverge greatly. The emphasis, therefore, must be shifted from academic-based education to comprehensive, life-based learning in order to close this gap. Young people require more than simply information and expertise. They must absorb specific beliefs, dispositions, self-worth, and consciousness. In order to apply the knowledgethey have learnt to their behavior and make appropriate decisions, they also require social and personal skills.

Examples of programs that teach life skills include those that prevent teenage pregnancy, drug misuse, the promotion of intelligence, and bullying prevention.
In essence, the life skills method helps students become more resilient emotionally and mentally, strengthen their behavior, and develop self-confidence. Therefore, providing life skills to students can help them reach their maximum potential and become content as a person who can make major contributions to their communities and the country as a whole.



Paper 4: A Case study of GHSS Jakh by Namarita Sharma, Jammu & Kashmir

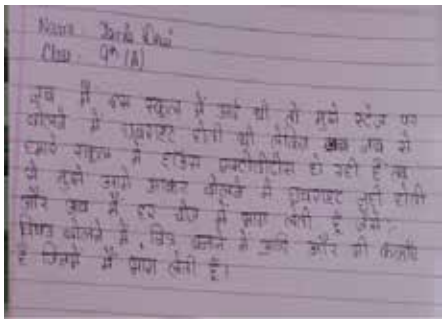


About the Author :

Namarita Sharma Teacher GGHSS Jakh, Samba , J&K. I'm a passionate and experienced educator with over 14 years of teaching experience.I hold a master's degree in Chemistry.I'm also holding the responsibility as DNO of Life Skill Development Project. DNO of Suvidha Sarathi and recently as DNO of Eco Club.I strive to create an engaging and inclusive learning environment that fosters curiosity and creativity in my students.

Introduction:

Life skills are essential for the holistic development of students, helping them make informed decisions, solve problems, communicate effectively, and build healthy relationships. At GHSS Jakh, life skill education has been integrated into the curriculum to create a dynamic learning environment. This paper evaluates the impact of life skills education on student's growth and development at GHSS Jakh, using both qualitative and quantitative data.



Methodology:

A mixed-methods approach was adopted, combining three years (2021-2024) of quantitative data from GHSS Jakh with qualitative feedback from students, teachers, and parents. Data collection involved competition participation, academic performance, and leadership roles. Qualitative feedback was gathered through surveys and discussions, highlighting personal observations on student confidence, leadership, and emotional growth.

Quantitative data:

Student's attendance increased from 80% to 85%, competition participation increased 34% (53 participants in 2024 out of which 15 awards at Block, District/State/national Level). The number of workshops increased from 3 in 2022 to 13 in 2024. Enrollment Increased from 333 in 2022 to 384 in 2024 i.e.15%. Academic performance, gender-based leadership has also improved.

Qualitative feedback:

Personal observations on student confidence, leadership roles (In Houses and Clubs), emotional growth, and communication improvements

Intervention:

Key interventions included house-based activities fostering teamwork and leadership, activity-based learning, the use of Teaching Learning Materials (TLMs), and personalized guidance and counseling. Student profiling allowed for a better understanding of individual interests, leading to increased participation in external competitions. Activity based workshops on goal setting, time management, creative and critical thinking, and problem-solving were central to the life skills education initiative.

Key Findings:

As a teacher, witnessing the transformation in students at GHSS Jakh has been immensely rewarding. The shy and reserved students have become more outspoken and confident. The introduction of life skills education has not only improved academic performance but also nurtured well-rounded individuals who are better prepared to face life's challenges.

Student Confidence and Participation:

Competition participation increased to 34% by 2024, with a rise in award wins. Students displayed greater confidence, as it reflected in their active involvement in external events and competitions.

Leadership and Gender Equality:

The number of girls in leadership roles remained at 50%, fostering gender equality and empowerment. Students took on more responsibilities in school activities, demonstrating a stronger sense of initiative and responsibility.

Innovation and Creativity:

Innovation and Creativity: Innovation and creativity help students think critically, solve problems, and adapt to new situations. By working on creative projects, they gain confidence, learn to express themselves, and improve teamwork. It also sparks curiosity and a love for learning, making students more open to new ideas. In simple terms, encouraging innovation in schools not only improves learning but also prepares students to face real-world challenges and become future-ready thinkers and leaders. The Innovation Club at GHSS Jakh saw active participation, with students presenting innovative projects under the INSPIRE MANAK initiative at national level.

Conclusion:

Life skills education has had a transformative impact on students at GHSS Jakh, contributing to both academic success and the development of well-rounded individuals. It has fostered self-confidence, leadership, and critical thinking, preparing students for future challenges.

Recommendations:

To sustain student growth, life skills programs should be expanded, with stronger community partnerships providing real-world experiences. Incorporating digital tools will boost critical thinking and collaboration. Regular feedback will help evaluate and refine programs, while ongoing teacher training ensures effective integration of life skills into daily lessons for lasting success.

Session III

Influence of Teachers' training on Students' performance

Jury | Session III

Dr Punita Gupta, Associate Prof. in the Department of Education, Aditi Mahavidyalaya, University of Delhi.

She has been teaching for more than 2 decades in teacher training Program BELED (Bachelor of Elementary Education). Social Science Education, Elementary Education, Gender & Sexuality, Teacher Education are her areas of research. She has numerous published articles and Co-edited 2 books in Hindi on gender and women issues. Co- Principal Investigator for the FRP titled "Quality Schooling and Social Work Engagement: NEP2020 Vision" funded under the Institute of Eminence Scheme, University of Delhi for the year 2021-22. Submitted 2 Innovation projects to University of Delhi. Currently working on an undergraduate research project on e- choices of undergraduate readers. She is Director of a Research Programme funded by the ICSSR. The research explores the folk, Art and culture in the Uttarakhand region with reference to different versions of storytelling of Ramleela.

Akanksha, Sattva Consulting

Akanksha has a professional experience of 14 years+ working with nonprofits and research organisations to strengthen systems change in the Public Education Sector. She has worked extensively with the govt systems across 10 states of India and has been part of district and state-level projects on teacher education and assessment reforms. She began her work in education through qualitative research on dropout children as part of her Master's in Development Studies from TISS, Mumbai.

Dr Keerti Sharma, Bharti Airtel Foundation:

As Head Curriculum and Teacher training. Experienced Educator with a demonstrated history of working in the education management industry. Skilled in Experiential Learning, Business Development, Educational Technology and Training, Instructional Leadership, and Team Building.

Paper 1: Unveiling of the Mosaic Mind by Neha Bahuguna, Delhi

About the Author :

Neha Bahuguna, a CBSE Resource Person and Canva Teacher Ambassador for India, holds double Master's degrees in Mathematics and Education from Delhi University along with UGC JRF (NET) certification. With 19 years of experience, she is a passionate educator and school Innovation Ambassador, and has presented papers at IIT Jodhpur (2023) and the Department of Education (2024).

Introduction:

Mathematics often feels daunting for students, as traditional text-heavy instruction emphasizes memorization and formulas, sidelining visual, auditory, and kinesthetic learners. Abstract topics like linear equations become even more challenging under this one-size-fits-all approach. The National Education Policy 2020 (NEP 2020) addresses these gaps, advocating for inclusive, personalized, and activity-based learning to foster critical thinking and creativity. This research aligns with NEP 2020 by exploring a multi-modal teaching approach that integrates visual, auditory, and kinesthetic elements, enhancing engagement and accessibility for diverse learning styles.

Methodology:

Research Design: This research report employs a mixed-methods approach to capture both quantitative data (achievement scores) and qualitative insights (student experiences and engagement). The combination of quantitative and qualitative data offers a comprehensive view of how a multi-modal approach impacts learning in a mathematics classroom.

Participants: For quantitative analysis, the research report focused on 42 ninth-grade students with diverse learning preferences (visual, auditory, kinesthetic). For in-depth qualitative insights, 10 students from each category were selected to share their experiences with multi-modal instruction.

Data Collection Tools:

Quantitative Data: Learning Styles Questionnaire: Administered to identify students' preferred learning modes.

Pre-test and Post-test Assessments: Used to measure students' algebraic understanding and procedural skills in linear equations.

Student Engagement Metrics: Observations of student participation during traditional and multi-modal lessons.

Qualitative Data: Interviews and Observations: Conducted to gain insights into students' subjective experiences and engagement with the multi-modal instructional approach.

Participants: For quantitative analysis, the research report focused on 42 ninth-grade students with diverse learning preferences (visual, auditory, kinesthetic). For in-depth qualitative insights, 10 students from each category were selected to share their experiences with multi-modal instruction.

Implementation:

Phase 1: Pre-Test and Learning Style Assessment
Students took a pre-test on algebraic structures, followed by a learning styles questionnaire to identify visual, auditory, and kinesthetic preferences.

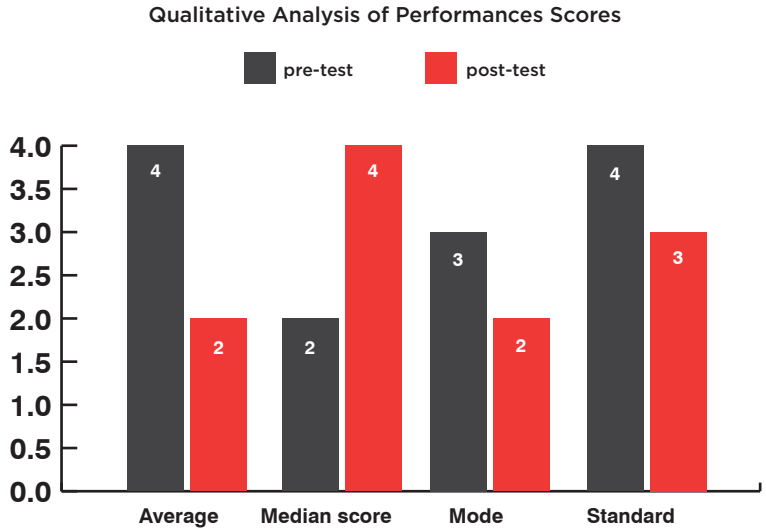
Phase 2: Multi-Modal Learning Activities
Linear equations were taught through activities tailored to each learning style:

Kinesthetic: Students physically interacted with a live Cartesian plane drawn in the school assembly area.

Visual: Graphing activities using DESMOS software and color-coded exercises

Auditory: Discussions, songs, and poetry reinforced concepts for auditory learners.

Phase 3: Post-Test and Data Collection
A post-test measured students' progress, while interviews and classroom observations provided qualitative insights into engagement and the effectiveness of the multi-modal approach. The data informed the analysis and conclusions.



Conclusion:

This research report highlights that a multi-modal instructional approach in mathematics enhances student engagement and understanding by catering to diverse learning styles—visual, auditory, and kinesthetic. Traditional, text-heavy methods often leave students disengaged, while tailoring lessons to individual learning preferences fosters a deeper, more inclusive learning environment, where students gain both confidence and comprehension. This report underscores the potential of multi-modal methods to address varied learning needs, paving the way for a more personalized and effective approach to mathematics education.

Paper 2: Enhancing Geometry Learning Through a Differential Learning Program by Rashmi Pillai, Madhya Pradesh

About the Author :

An educator at Billabong High International School, Bhopal, Rashmi has 20+ years of experience in educational leadership and has received awards for innovative teaching. She feels her strongest skills lie in analysis, interpersonal communication, and decision-making..

Introduction:

Geometry, a fundamental branch of mathematics, presents unique challenges due to its reliance on spatial visualization and abstract reasoning. Traditional instructional approaches struggle to address the diverse needs and learning styles of students in geometry education. Differential learning programs have emerged as promising pedagogical strategies tailored to individual student needs, preferences, and learning modalities. These programs allow for the customization of learning experiences to address specific learning gaps or areas of difficulty for each student, promoting deeper understanding and mastery of content. They also promote the development of metacognitive skills by encouraging students to take ownership of their learning and reflect on their learning processes. By valuing and respecting individual differences, these programs create a supportive and inclusive learning environment, enhancing students' overall engagement and enjoyment of the learning process. Differential learning programs recognize that students have varying levels of readiness, prior knowledge, and learning styles, and tailored instruction to meet these needs. They offer a variety of instructional strategies and resources to accommodate different learning styles and preferences, providing targeted intervention and support for students struggling with specific geometric concepts or skills.

Methodology:

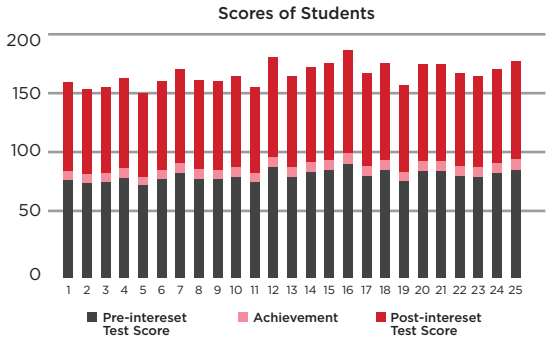
Differential learning programs cater to individual students' needs, preferences, and learning styles by tailoring instruction to their pace, readiness, and interests. These programs offer various instructional strategies and resources, including visual, auditory, kinesthetic, and tactile modalities. A study using a quasi-mixed research design explored the impact of diverse instructional approaches on fourth-grade mathematics students' final grades. Quantitative data included pretest and post-interest assessments, with a reliability coefficient of 0.8803 for the Differential Learning Program (DLP) Group.

Intervention:

Students struggling with geometry were identified through Term 1 examination results and targeted through the Differential Learning Program (DLP). These students were placed in a dedicated classroom and received personalized lessons. The program used technology to engage students and provide real-time feedback. The program increased students' interest in mathematics and improved their geometry skills, resulting in higher test scores. The program was implemented over a month and 15 days, with regular monitoring and progress assessments.

Interest Test	Sample Size	Mean	SD	t-Value	Significant Level tα = 0.05
Pre- Test	25	45.08	9.53	t-critical = 1.708 t-calculated = 4.6896	Significant at 0.05 Level
Post-Test	25	8.79			

Test	Variables	N	Coefficient of Correlation	Table Value	Level of significance
Correlation	Achievement	25	0.5902	0.930863	Significant at 0.05
	Post Interest Test	25			



Key Findings:

The study explores the effectiveness of differential learning programs in geometry education, revealing significant improvements in student achievement across various cognitive domains. The quantitative analysis showed that the differential learning program significantly improved performance and understanding, with half of the students stating that the material was reinforced more thoroughly. Additionally, some students reported personal growth and increased confidence in dealing with geometry challenges. These findings highlight the potential of differential learning programs to enhance geometry learning outcomes and foster cognitive development among students. The study suggests that further research is needed to explore the long-term effects of these programs and identify best practices for implementation in diverse educational contexts. Ultimately, differential learning programs have the potential to revolutionize geometry education, empowering students to achieve greater success and proficiency in this critical mathematical domain.

Conclusion:

The study explores the effectiveness of differential learning in geometry education, finding that it enhances student achievement and cognitive development. It suggests that tailored programs can improve performance, understanding, and confidence in geometry. However, challenges like resource allocation, teacher training, classroom management, and curriculum alignment need to be addressed. The study recommends ongoing refinement of differential learning strategies, professional development for educators, and leveraging technology for personalized learning experiences.

Recommendations:

The recommendations include tracking student performance after differential learning, providing ongoing training for educators, fostering collaboration, ensuring equal access to resources, collecting and analyzing performance data, involving parents and the community in math education, pushing for policy adjustments, and updating the math curriculum to incorporate personalized learning practices and innovative instructional methods. These measures aim to improve the effectiveness of differential learning programs and ensure student-centered learning.

Paper 3: Prominence of Teachers Training Programs for Primary Teachers to Fill the Learning Gaps by Tapsa Verma and Jyoti Dhingra, Delhi

About the Author :

Dr. Tapsa Verma is currently teaching at B.Ed. division, SCERT Delhi. With a Ph.D and, Masters in Education, English, Sociology as well as in Mathematics, she is dedicated to shaping the future educators of this country into reflective and kind teachers that foster inclusivity.

About the Author :

Jyoti Dhingra, with over 22 years of dedicated teaching experience was honored as a Delhi State Awardee Teacher. Her passion for pedagogy has led her to contribute as an author to more than 15 books, over 10 research papers. She served as a resource person for SCERT, NCERT, and CBSE.

Introduction:

Primary education forms the foundation of a child's academic journey and lifelong learning. Effective teaching in primary classrooms is dependent on well-trained educators equipped with robust pedagogical skills and strategies. The paper investigates the impact of teacher training on teaching effectiveness, student learning outcomes, and professional development. Special emphasis was placed on the Mission Buniyaad Campaign, which implemented the CAMaL (Combined Activities for Maximized Learning) strategy to address foundational literacy and numeracy (FLN) deficits

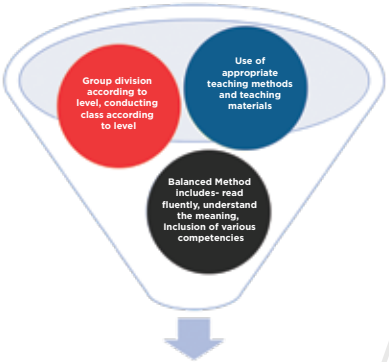
Methodology:

The study adopted a mixed-methods approach, utilizing both quantitative and qualitative data from mentor teachers. Data was collected via a Google Form survey with eight objective and three subjective questions, distributed to 107 mentor teachers. Descriptive statistics were used for quantitative analysis, while thematic analysis identified recurring themes from subjective responses. Ethical considerations, including informed consent and confidentiality, were upheld throughout the research.

Intervention:

The Mission Buniyaad initiative focused on addressing foundational learning gaps through activity-based and differentiated instruction. Key strategies included:

- **Storytelling, Mind Maps, and Role Play:**
  Enhancing literacy and numeracy skills.
- **Innovative Content:**
  Adjusted to students' levels to promote inclusion.
- **Teacher Empowerment:**
  Training manuals and practical tools supported teacher facilitation.
- **CAMaL Approach:**
  Combined activities encouraged engagement and interaction.



CAMaL
Combined Activities for Maximised Learning

Key Findings

1. Teacher and Student Impact:

- Most respondents appreciated the innovative and level-specific strategies.
- Activities boosted student engagement and learning outcomes.
- Teachers gained clarity on effective methodologies and assessment strategies.

2. Challenges Faced:

- High absenteeism among students and teachers.
- Administrative burdens and insufficient resources.
- Lack of autonomy and inadequate infrastructure for differentiated instruction.

3. Perceptions of Effectiveness:

- Majority found the training relevant, although improvements were suggested for better implementation and support.

Challenges teachers' faced:

Conclusion

The Mission Buniyaad training program enabled teachers to revisit and refine their teaching strategies to address diverse student needs. The CAMaL approach fostered an interactive, inclusive, and engaging learning environment. Teachers observed significant improvements in foundational skills among students and appreciated the interest shown by higher authorities in their professional growth. Despite its successes, challenges like resource limitations and administrative pressure need resolution for sustained impact.

Recommendations

1. **Program Structure:**
   Focus on short-term, intensive training programs targeted at specific grade levels.
2. **Teacher Support:**
   Provide continuous professional development, enhanced instructional materials, and reduced administrative burdens.
3. **Community Engagement:**
   Involve parents and School Management Committees to create a supportive ecosystem.
4. **Infrastructure Improvement:**
   Allocate resources for smaller class sizes and differentiated instruction.

Paper 4: A Novel Approach to Teaching Time Measurement in Class 6 Mathematics: GOALS Pedagogy by Sharmila Begum, Tamil Nadu

About the Author :

A. Sharmila Begum, M.Sc, B.Ed, M. Phil, (Mathematics) is a teacher at Govt. Hr. Sec. School, Bommahalli, Karimangalam Block, Dharmapuri District, Tamil Nadu.

Introduction:

This research introduces the GOALS pedagogy, a novel approach to teaching time measurements in Class 6 mathematics. The GOALS method—incorporating Games, Observation, Application, Logic, and Stories—aims to improve students understanding of time measurements through interactive and engaging activities. Traditional teaching methods often limit student engagement, but GOALS pedagogy encourages hands-on learning and real-life applications, which align with the principles of the National Education Policy (NEP) 2020 and the National Curriculum Framework (NCFSC) 2023. By comparing an experimental group taught with GOALS pedagogy and a control group taught with conventional methods, this study assesses the effectiveness of the GOALS approach in enhancing students' mathematical understanding and engagement.

Methodology:

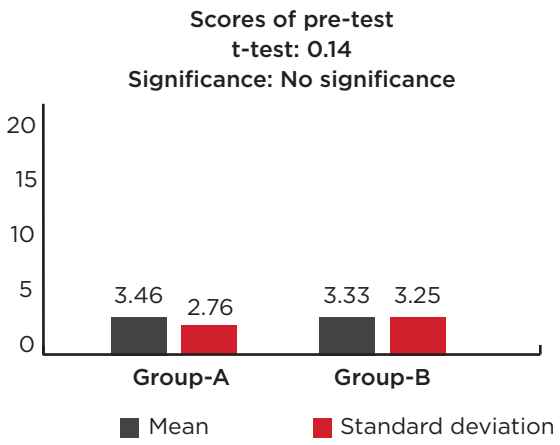
The study employs an experimental design, dividing 48 sixth-grade students into two groups. Group A, the experimental group, learned through GOALS pedagogy, while Group B, the control group, received conventional instruction. A pre-test assessed initial knowledge of both groups in time measurements. Over a period of 60 days, Group A engaged in activities such as time-based games, observation tasks, application exercises, and storytelling sessions. After the intervention, a post-test evaluated the improvement in understanding of both groups. The t-test analysis on pre- and post-test scores quantified the efficacy of the GOALS method compared to traditional teaching.

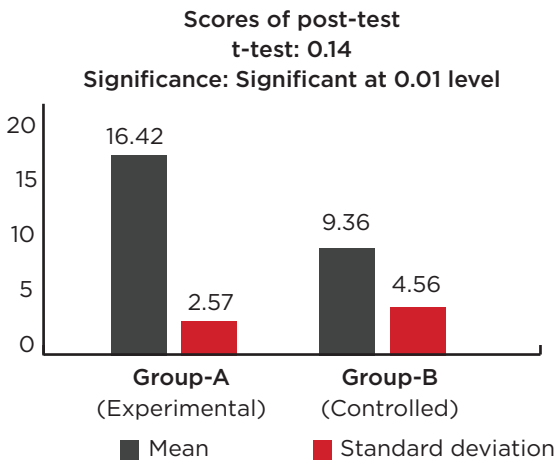
Intervention: GOALS pedagogy:

The intervention focused on various components of time measurement, including reading time, time format conversions, and calculating durations. GOALS pedagogy implemented engaging activities like the Tick-Tock Time Adventure Game, Railway Time Adventure, Daily observation logs, and storytelling. These activities promoted an interactive learning environment where students actively participated in time-based exercises, allowing them to apply mathematical concepts in real-world contexts. By using activities tailored to student interests and abilities, GOALS pedagogy transformed complex ideas into tangible concepts that fostered deeper comprehension.

Key Findings:

The findings demonstrate that the GOALS pedagogy significantly enhanced the experimental group's learning outcomes. The experimental group's post-test mean score was substantially higher than that of the control group, indicating a positive impact of GOALS pedagogy on students' comprehension of time measurements. A significant difference ($p < 0.01$) between the two groups mean scores validated the hypothesis that the GOALS approach is more effective than conventional teaching. The hands-on approach enabled students to engage more deeply with the subject matter, fostering collaboration, intrinsic motivation, and improved logical reasoning skills.





Conclusion:

The GOALS pedagogy has proven to be an effective instructional method for teaching time measurements, showing greater success in fostering understanding and engagement among students. By integrating real-life applications, games, and stories, students could contextualize mathematical concepts in ways that the traditional methods did not facilitate. The study underscores the importance of innovative pedagogical approaches in improving mathematical comprehension and highlights the need for learner-centric education models that prioritize active participation and critical thinking.

Recommendation:

The success of the GOALS pedagogy suggests it can be extended to other mathematical concepts, including geometry (angles, area, and perimeter) and number theory (prime and composite numbers). Teachers should consider incorporating similar methods to promote collaborative and experiential learning environments. Additionally, educational policies and teacher training programs should focus on hands-on methodologies like GOALS to better equip teachers in fostering a deeper understanding and appreciation for mathematics among students.

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