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Awareness of Cyber Crimes



The Impact of Eco-Friendly Marketing on Sustainability



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NATIONAL EDUCATION DAY 2025

National Education Day 2025 asks us to confront a defining question of our era: how will learning remain deeply human as automation reshapes classrooms? This year's theme - **"AI and Education: Preserving Human Agency in a World of Automation"** - reminds policymakers that technology must amplify, not replace, human judgment and compassion.

AI can personalize learning, diagnose gaps, and free teachers from routine tasks, but it cannot cultivate moral reasoning or civic purpose. Teachers remain the ethical anchors of schooling; their role shifts from information-delivery to mentoring, curating and guiding inquiry.

We must invest in teacher training that builds fluency with AI tools while strengthening values, empathy and critical thinking. Equity must be central: access to AI-powered learning should not deepen existing divides between urban and rural, rich and poor. Data privacy, algorithmic fairness and transparent governance are urgent priorities as classrooms become digitally instrumented.

Foundational literacy and numeracy cannot be outsourced - they are the scaffolding on which meaningful AI-supported learning rests. Curricula must foreground digital literacy, ethics, and interdisciplinary skills so learners navigate technology responsibly. Schools, universities and edtech companies should collaborate to co-design tools that respect cultural contexts and pedagogy. Policy must ensure students learn to be creators of technology, not merely consumers-coding, design and critique matter. Parents and communities should be engaged in conversations about when and how AI is used in children's learning.

National Education Day 2025 is thus both a celebration and a call to careful stewardship of technology in education. If harnessed wisely, AI will expand human possibility; mishandled, it risks hollowing out the very agency education seeks to nurture.

Let this year renew our commitment to an education that uses AI to deepen humanity, not diminish it.

- **Dr. S.B. Yadawad**
Editor

LAL BAHADDUR SHASTRI AND BHARAT WITH SPECIAL REFERENCE TO GREEN REVOLUTION - A CRITICAL REVIEW

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ABSTRACT

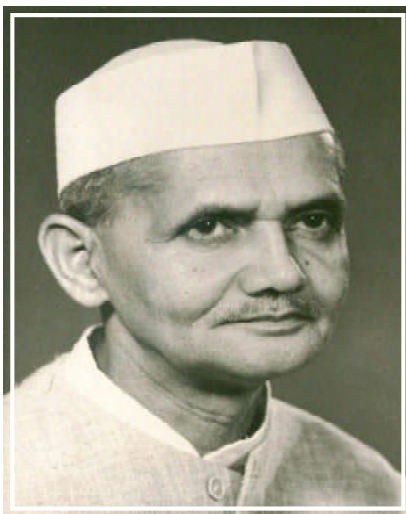
This critical review examines Lal Bahadur Shastri's significant influence on India's agricultural policies during the Green Revolution, a transformative period aimed at improving the nation's food security. Shastri, who served as Prime Minister from 1964 to 1966, was an advocate for the use of fertilizers, modern irrigation methods, and high-yield variety (HYV) seeds. "Jai Jawan, Jai Kisan," his well-known catchphrase, emphasized the significance of farmers and soldiers in nation-building. The Green Revolution's socioeconomic impact on rural India is examined in this review, looking at both its successes, like increased food production and self-sufficiency, and its challenges, like environmental degradation and farmer socioeconomic disparities. The review highlights Shastri's legacy and the ongoing relevance of his vision in contemporary discussions on sustainable agriculture and food security by situating his policies within the larger narrative of India's agricultural development. These are intended to improve comprehension of the legacy of the Green Revolution and its implications for India's future agricultural policies and practices. Further research on sustainable agriculture and rural development can significantly benefit from interdisciplinary approaches and a variety of methodologies.

Keywords : Lal Bahadur Shastri, Green Revolution, Agricultural policy, Food security, High-yield variety (HYV) seeds, Modern irrigation, Fertilizers, Sustainable agriculture, Rural development

INTRODUCTION

The second Prime Minister of India, Lal Bahadur Shastri, was instrumental in leading the country through the 1960s' transformative Green Revolution. Shastri's leadership was instrumental in the implementation of policies aimed at increasing agricultural productivity and ensuring food security for a growing population after taking office during a time of severe food shortages and widespread agricultural distress. High-yield variety (HYV) seeds, chemical fertilizers, and cutting-edge irrigation methods were all introduced during the Green Revolution, which began in the middle of the 20th century.

India went from a food-deficient nation to one of relative self-sufficiency as a result of these changes, particularly in staple crops like wheat and rice, which significantly increased crop production. Shastri's famous slogan, "Jai Jawan, Jai Kisan," which emphasized the dual roles of farmers and soldiers in nation-building, exemplified his dedication to agriculture. In addition to emphasizing the significance of agriculture to India's economy, this philosophy sought to elevate farmers' status, who had long been marginalized in the socioeconomic landscape^[1]



Nonetheless, the Green Upset was not without its difficulties. It brought about significant socioeconomic disparities and environmental issues, in addition to remarkable increases in food production. The emergence of issues like land inequality, farmer debt, and the depletion of natural resources sparked critical debates about these practices' viability. Lal Bahadur Shastri's contributions to the Green Revolution are critically examined in this review, looking at both their successes and failures. This paper aims to shed light on Shastri's vision and the ongoing

relevance of his approach to current agricultural challenges in India by analyzing the interaction between his policies and the socioeconomic landscape of rural India. In this context the present paper deals with the study of Lal Bahadur Shastri and Bharat with special reference to green revolution -A Critical Review.

AIM AND OBJECTIVES

- 1. To Analyze Shastri's Role :** Examine Lal Bahadur Shastri's influence on India's agricultural landscape and his efforts to promote agricultural policies during the Green Revolution.

2. **To Assess the Green Revolution's Impact :** Focus on food production, rural development, and farmer welfare as you examine the socioeconomic shifts brought about by the Green Revolution.
3. **To Explore Sustainability Issues :** Examine the implications of the Green Revolution's environmental and socioeconomic challenges for sustainable agricultural practices.
4. **Policy Evaluation :** Critically examine Shastri's agricultural policies, which included the promotion of high-yielding variety seeds, irrigation methods, and the use of fertilizer.
5. **Socio-Economic Analysis :** Examine the changes in farmer livelihoods, land ownership patterns, and income levels caused by the Green Revolution in rural communities.
6. **Disparity Investigation :** Examine the disparities that the Green Revolution created among various farmer demographics, particularly with regard to access to resources, technology, and market opportunities.
7. **Environmental Assessment :** Investigate the environmental effects of intensified agricultural practices, such as the deterioration of soil, scarcity of water, and loss of biodiversity.
8. **Legacy Reflection :** Think about Shastri's legacy and how his vision applies to the current debates in India about agricultural policy, food security, and sustainable development.
9. **Policy Recommendations :** Utilizing the lessons learned from the Green Revolution, provide insights and suggestions for future agricultural policies that strike a balance between productivity, sustainability, and social equity.

REVIEW OF LITERATURE

The literature on Lal Bahadur Shastri and the Green Revolution in India comes from a number of different points of view, such as historical accounts, evaluations of the economy, and sociopolitical assessments. The multifaceted nature of Shastri's impact and the outcomes of the Green Revolution are highlighted in this review, which synthesizes important contributions in the field.

HISTORICAL CONTEXT

The Green Revolution's origins have been traced by a number of scholars, who note that it began in response to India's severe food shortages in the 1960s. For instance, the agricultural landscape prior to the Green Revolution,

characterized by low productivity and subsistence farming practices, is the focus of studies by Prasad (2002) and Gulati & Saini (2014). These works place Shastri's leadership in context with the Indo-Pak War of 1965, which exacerbated concerns about food security and prompted urgent agricultural reforms.

POLICY IMPLEMENTATION

Research on Shastri's policies highlight his strategic focus on agricultural technological innovation. Choudhury (2010) provides a comprehensive analysis of the development of agricultural research institutions like the Indian Council of Agricultural Research (ICAR) and the introduction of high-yield variety (HYV) seeds. His work focuses on how Shastri's administration helped bring modern agricultural techniques to Indian farmers through collaboration with international organizations like the Ford and Rockefeller Foundations.

SOCIO-ECONOMIC IMPACTS

There has been a lot of discussion about the social and economic effects of the Green Revolution. Bhalla and Singh (2009) look at how the shift from food scarcity to self-sufficiency was caused by significant increases in food grain production. However, they also note the emergence of regional disparities, with Punjab and Haryana disproportionately benefiting from the new agricultural methods. Ranjit Singh (2015) and other researchers look at how the Green Revolution exacerbated social and economic inequality, focusing on issues like farmer debt and the marginalization of smallholder farmers.

ENVIRONMENTAL CONCERNS

The Green Revolution's effects on the environment have come under increasing scrutiny. According to Shiva (2016), excessive use of chemical pesticides and fertilizers has resulted in soil degradation, depletion of water resources, and a decline in biodiversity. Her work is a cautionary tale that encourages farmers to reevaluate their agricultural practices in light of sustainability issues.

LEGACY AND CONTEMPORARY RELEVANCE

Lal Bahadur Shastri's legacy and the Green Revolution continue to guide India's current agricultural policies. Scholars like Pingali (2012) look at how current debates about food security and sustainable agricultural development are influenced by the fundamental shifts brought about by the Green Revolution.

Shastri's vision and current initiatives, such as the National Mission for Sustainable Agriculture, are frequently

compared in contemporary analyses, which emphasize the importance of inclusive growth and environmentally friendly practices.

RESEARCH METHODOLOGY

This critical review examines Lal Bahadur Shastri's contributions to India's Green Revolution, including its successes and failures, using a multifaceted research approach. The following parts make up the methodology's structure:

1. Literature Review : To compile and evaluate existing research on Lal Bahadur Shastri, the Green Revolution, and their effects on society and the environment. Books, government reports, academic journals, and policy papers from reputable institutions. To ensure a comprehensive collection of relevant literature, important databases like JSTOR, Google Scholar, and institutional repositories will be used.

2. Historical Analysis : To place Shastri's leadership in context with India's agricultural policies throughout history. Chronological examination of significant occurrences during Shastri's tenure, with an emphasis on the sociopolitical setting, the urgency of agricultural reforms, and the immediate effects of initiatives related to the Green Revolution.

3. Case Studies : To show how the Green Revolution affected different parts of India in different ways. Choose case studies from states like Punjab, Haryana, and Uttar Pradesh that showed how agricultural practices and outcomes changed a lot. These case studies will shed light on the social, economic, and environmental effects of the Green Revolution and shed light on regional disparities.

4. Qualitative Analysis : To gather information from oral histories, interviews, and historical narratives about farmers' actual experiences during the Green Revolution. Conduct an analysis of qualitative data obtained from secondary sources like memoirs, interviews with farmers, and documentaries. This will assist in capturing the human aspect of changes in agricultural policy and how they affect rural communities.

5. Data Analysis : To evaluate quantitative data on the effects on the environment, socioeconomic indicators, and agricultural production. Utilize statistical analysis of data on agricultural productivity, income levels, and resource consumption prior to and following the Green Revolution. Economic surveys, government agricultural reports, and studies carried out by agricultural research institutions are all potential sources.

6. Comparative Analysis : To contrast the effects of the Green Revolution with those of other agricultural policies and methods. Evaluate the effectiveness of other Indian agricultural initiatives, such as the organic farming and sustainable agriculture movements, in relation to the Green Revolution. The lessons learned from this comparison can be applied to future agricultural policy.

7. Synthesis and Reflection : To combine the results of the various methods and consider the implications for current agricultural policy. Create a cohesive understanding of Shastri's legacy and its relevance today by integrating insights from the literature review, historical analysis, case studies, and qualitative and quantitative data.

STATEMENT OF THE PROBLEM

In the 1960s, under Lal Bahadur Shastri's leadership, India started the Green Revolution to address the nation's pressing food security issue. While it transformed India from a food-deficient nation into one of relative self-sufficiency and significantly increased agricultural productivity, this period also brought about a variety of environmental and socioeconomic issues. The Green Revolution's dual legacy is the primary issue this review aims to solve: Despite the significant advances it made in food production, it also created significant disparities among farmers and had negative effects on the environment. The sustainability of agricultural practices implemented during this time period and their long-term effects on rural communities and the environment are fundamentally questioned by these outcomes.

In addition, the review aims to critically examine Lal Bahadur Shastri's policies in the context of the Green Revolution, focusing on how his vision and strategies affected the transformational period's successes and failures. Not only is it necessary to comprehend this legacy in order to comprehend the historical context of Indian agriculture, but it also serves as a foundation for current discussions regarding sustainable agricultural practices, food security, and social equity in rural India. Under Lal Bahadur Shastri's leadership, the Green Revolution succeeded in improving food security and agricultural productivity in India, but significant socioeconomic disparities and environmental issues have emerged. In order to comprehend their implications for sustainable agricultural practices and policymaking in contemporary India, this review conducts a critical analysis of these two legacies.

NEED FOR THE STUDY

The study of Lal Bahadur Shastri's contributions to the Green Revolution is essential for several reasons:

1. Understanding Historical Context : Shastri's leadership during the Green Revolution sheds light on the crucial transformation of India's agricultural sector during a crisis. The decisions made and policies implemented that shaped modern Indian agriculture are made clearer when the historical context is understood.

2. Evaluating Policy Impacts: The Green Revolution had a significant impact on rural livelihoods, food security, and agricultural productivity. To evaluate the efficacy of Shastri's policies and their relevance to India's current agricultural challenges, it is necessary to critically examine these outcomes.

3. Addressing Socio-Economic Disparities: Despite the fact that the Green Revolution led to an overall increase in food production, it also led to significant disparities between various regions and the demographics of farmers. It is essential to investigate these disparities in order to identify lessons learned and guide future agricultural development policies.

4. Environmental Sustainability: Today, the Green Revolution's effects on the environment—such as soil degradation, depletion of water resources, and the loss of biodiversity—are becoming increasingly relevant. To critically evaluate these difficulties and investigate environmentally friendly farming methods that may lessen their impact, this research is required.

5. Informing Contemporary Agricultural Policy: Understanding the successes and failures of previous policies is crucial as India faces new challenges related to sustainable development, climate change, and food security. Policymakers attempting to develop agricultural strategies that are both balanced and efficient may benefit from this review's insights.

6. Legacy Reflection: The vision of Lal Bahadur Shastri is summed up in his slogan "Jai Jawan, Jai Kisan," which emphasizes the significance of farmers in the process of nation-building. Modern agricultural and rural development initiatives that place an emphasis on farmer welfare and community resilience can be inspired by his legacy.

7. Contribution to Academic Discourse: The larger academic discussion of agricultural policy, food security, and sustainable development will benefit from this study. It has the potential to lay the groundwork for subsequent

research that investigates the way in which agricultural practices of the present and past interact.

FURTHER SUGGESTIONS FOR RESEARCH

The critical examination of Lal Bahadur Shastri's contributions to the Green Revolution paves the way for a number of new fields of study. Some suggestions are as follows:

1. Longitudinal Studies on Socio-Economic Impacts: Conduct longitudinal studies to examine the long-term socioeconomic effects of the Green Revolution on various farming communities, concentrating particularly on income stability, health outcomes, and social mobility.

2. Comparative Analysis of Regional Variations : Investigate a comparison of the effects of the Green Revolution in various Indian states like Punjab, Haryana, and West Bengal. This can assist in determining the factors that contributed to success and sustainability in varying degrees.

3. Assessment of Environmental Sustainability : Examine the Green Revolution's effects on the environment in greater detail, concentrating on soil health, water consumption, and biodiversity loss. Sustainable agricultural practices that mitigate these negative effects may be informed by this research.

4. Policy Evolution and Future Directions : Examine how agricultural policies changed after the Green Revolution and how lessons learned from that time have influenced current policies. Technology, organic farming, and climate-resilient practices could all play a role in this.

5. Role of Women in Agriculture : Investigate the particular effects of the Green Revolution on female farmers and the roles they play in rural communities. Policies aimed at promoting gender equity in farming may benefit from an understanding of the gender dynamics that exist within agricultural practices.

SCOPE AND LIMITATIONS

SCOPE

1. Historical Analysis : The historical context of India's agricultural policies in the 1960s, particularly Lal Bahadur Shastri's leadership and the Green Revolution, will be the focus of the study.

2. Policy Evaluation : It will examine the effects of Shastri's agricultural policies on productivity, food security, and rural livelihoods in a critical way.

3. Socio-Economic Impact Assessment : The Green Revolution's socioeconomic effects, such as shifts in income levels, patterns of land ownership, and disparities among various farmer demographics, will be the focus of the review.

4. Environmental Consequences : An investigation of the environmental effects of intensified agricultural practices, such as soil degradation, water scarcity, and biodiversity loss, will be included in the scope.

5. Legacy Reflection : Shastri's legacy and the Green Revolution will be discussed in the study in light of current discussions about sustainable agricultural practices and policymaking.

LIMITATIONS

1. Data Availability : Particularly for earlier periods, there may be limited access to accurate and comprehensive data on agricultural productivity, socioeconomic indicators, and environmental impacts.

2. Subjectivity in Historical Accounts : Historical narratives can be interpreted in a variety of ways, and opposing viewpoints can result in inaccurate depictions of Shastri's policies and their effects.

3. Temporal Focus : Even though the study will concentrate on the Green Revolution, it might not fully take into account the long-term effects of these policies after the 1970s, which could give a better understanding of their legacy.

4. Regional Disparities : The study may not cover all areas equally, focusing primarily on states like Punjab and Haryana, which were most affected by the Green Revolution. This could leave out other areas that face unique challenges.

5. Complexity of Socio-Economic Factors : Beyond agricultural policies, a variety of factors, including market dynamics, social structures, and political shifts, influence the socioeconomic effects of the Green Revolution, which may make the analysis more difficult.

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to everyone who helped finish this critical analysis of Lal Bahadur Shastri and the Indian Green Revolution. First and foremost, I would like to express my sincere gratitude to [Advisor's Name], my academic advisor, for providing me with invaluable guidance and insightful feedback throughout the research process. I was motivated to investigate this important topic further thanks to your

expertise and encouragement. Additionally, I am indebted to the faculty and staff of [Institution/Department Name] for facilitating a conducive learning environment and giving me access to crucial resources like libraries and research databases. With your help, we were able to thoroughly examine the relevant literature.

I would like to express my gratitude especially to my colleagues and fellow researchers for their stimulating discussions and contributions to my comprehension of the complexities of agricultural policy and its effects on society. In addition, I would like to thank the researchers and authors whose work I cited in this study. Their contributions to the field helped shape my understanding of the Green Revolution's socioeconomic and environmental aspects and provided a solid foundation for my analysis. Last but not least, I am indebted to my friends and family for their unwavering encouragement and support throughout this research journey.

I am truly appreciative of your patience and understanding, and your confidence in my abilities pushed me to keep going. This review aims to honor Lal Bahadur Shastri's legacy and the Green Revolution, and I hope it makes a significant contribution to the ongoing discussion in India about agricultural development and sustainability. I appreciate everyone's support.

HYPOTHESIS

The following hypotheses regarding Lal Bahadur Shastri's involvement in the Green Revolution and its numerous effects on India are presented in this critical review:

1. Hypothesis 1 : Policy Impact on Productivity : Through the use of high-yield variety (HYV) seeds and cutting-edge farming methods, Lal Bahadur Shastri's agricultural policies significantly increased India's agricultural productivity and food security.

2. Hypothesis 2 : Socio-Economic Disparities : Despite the fact that the Green Revolution contributed to overall increases in food production, it also exacerbated socioeconomic disparities among farmers, with larger landowners benefiting more than marginalized communities and smallholder farmers.

3. Hypothesis 3 : Environmental Consequences : The Green Revolution's intensification of agricultural practices had significant negative effects on the environment, including the degradation of soil, depletion of water resources, and loss of biodiversity. This made it difficult for these practices to last.

4. Hypothesis 4: Legacy and Contemporary

Relevance : The legacy of Lal Bahadur Shastri and the Green Revolution continue to have an impact on India's current agricultural policies. This demonstrates the need for a balanced strategy that places an emphasis on both productivity and sustainability.

5. Hypothesis 5: Regional Variation in Outcomes :

The effects of the Green Revolution were very different in different parts of India. States like Punjab and Haryana saw more positive effects than states with less access to technology and resources. These hypotheses will help frame the discussion and evaluate the effects of Shastri's policies on India's agricultural development throughout the review.

SUMMARY

This critical review examines Lal Bahadur Shastri's significant role in India's 1960s agricultural transformation known as the Green Revolution. The rise of Shastri's leadership came at a crucial time when the country was struggling with severe food shortages and financial difficulties.

Through the use of chemical fertilizers, modern irrigation techniques, and the introduction of high-yield variety (HYV) seeds, his policies sought to boost agricultural productivity.

THE REVIEW HIGHLIGHTS SEVERAL KEY FINDINGS

1. Increased Productivity and Food Security : India went from being food insecure to being somewhat self-sufficient as a result of the Green Revolution, which resulted in significant increases in the production of food grains. This was especially evident in Punjab and Haryana states.

2. Socio-Economic Disparities : Inequalities among farmers were exacerbated by the revolution, which resulted in an increase in agricultural output overall. Larger landowners frequently received disproportionate benefits, which increased socioeconomic disparities and marginalized smallholder farmers and those with lower incomes.

3. Environmental Impacts : Soil degradation, the depletion of water resources, and the loss of biodiversity were just a few of the significant environmental issues that were brought about by the intensification of agricultural practices. Concerns about the Green Revolution's practices' long-term viability were raised by these issues.

4. Legacy and Contemporary Relevance : Shastri's vision, summed up in his slogan "Jai Jawan, Jai Kisan," is still relevant in current debates regarding agricultural

policy. The need for policies that strike a balance between productivity, sustainability, and social equity is emphasized by his emphasis on farmers' role in nation-building.

5. Regional Variability : The availability of local resources, infrastructure, and technology access influenced the outcomes of the Green Revolution in various parts of India.

RESULTS

This in-depth examination of Lal Bahadur Shastri's contributions to India's Green Revolution led to a number of significant findings that demonstrate both the benefits and drawbacks of this crucial period in agricultural history.

1. Increased Agricultural Productivity : Food grain production significantly increased as a result of the introduction of high-yield variety (HYV) seeds and improvements in irrigation and fertilizer use. By the beginning of the 1970s, India had achieved self-sufficiency in staple crops after statistical data indicated a significant increase in wheat and rice yields.

2. Improvement in Food Security : Increased food availability as a result of the Green Revolution contributed to national food security. The country's reliance on imports and famine relief decreased as a result of its increased food production, boosting agricultural resilience.

3. Socio-Economic Disparities : The benefits of the Green Revolution were not evenly distributed, despite overall gains in productivity. Economic growth was substantial for larger landowners and regions with better access to resources (like Punjab and Haryana), whereas smallholder farmers and regions without infrastructure (like eastern India) struggled to benefit, resulting in greater socioeconomic disparities.

4. Environmental Consequences : Significant environmental concerns were raised by the shift to intensive farming methods. Chemical fertilizers and pesticides have been shown to have negative effects on soil degradation, water resources, and biodiversity. These issues bring to light the difficulties with sustainability that are connected to the agricultural practices that were promoted during the Green Revolution.

5. Regional Variability : The effects of the Green Revolution were very different in each state. Wheat production, for instance, exploded in Punjab and Haryana, but other states like Odisha and Bihar did not see the same growth because they did not invest enough in technology and infrastructure. The need for tailored agricultural policies

that take into account local contexts was made clear by this disparity between regions.

6. Enduring Legacy and Lessons Learned : Current agricultural policies continue to be influenced by Lal Bahadur Shastri's legacy, particularly his commitment to farmer welfare and national self-sufficiency. His catchphrase, "Jai Jawan, Jai Kisan," which emphasizes the interconnectedness of agricultural and national development, is still relevant. However, the review also points to the need for policies that address existing inequality and promote sustainable practices to ensure equitable growth.

DISCUSSION

A critical analysis of Lal Bahadur Shastri's contributions to the Green Revolution reveals a multifaceted legacy that includes significant challenges as well as remarkable accomplishments. The main findings and their implications for India's current agricultural policy and practice are summarized in this discussion.

1. Agricultural Productivity and Food Security : The introduction of high-yield variety (HYV) seeds and cutting-edge farming methods ushered in a new era in Indian agriculture known as the Green Revolution. In addition to reducing hunger and malnutrition, the significant increase in food production contributed to national self-sufficiency.

This accomplishment demonstrates Shastri's dedication to addressing food security and the efficacy of his policies. However, the reliance on intensive farming practices has sparked concerns regarding their long-term viability. Concerns about the health of the soil, the availability of water, and the stability of the ecosystem increased with production. The discussion of sustainability emphasizes the need to strike a balance between short-term productivity gains and ecological health over the long term, calling for a shift toward integrated farming methods that conserve soil and biodiversity.

2. Socio-Economic Disparities : Despite the fact that the Green Revolution resulted in an increase in agricultural output, farmers' socioeconomic disparities were exacerbated. Smallholder farmers faced obstacles like limited access to credit, technology, and markets, while larger landowners were better positioned to profit from the new resources and technologies. The issue of equity in agricultural development is seriously questioned by this disparity. These disparities have ramifications that go beyond economic metrics; They have an impact on rural dynamics, community cohesion, and social structures. These disparities must be addressed by future agricultural

policies by promoting cooperative models, ensuring access to resources and training, and providing targeted assistance to smallholder farmers. Policies can help close the gap between different socioeconomic groups by encouraging inclusivity.

3. Environmental Sustainability : The Green Revolution's effects on the environment, such as the degradation of soil, scarcity of water, and loss of biodiversity, emphasize the significance of sustainable agricultural practices. The need for environmentally friendly farming practices is pressing as the effects of climate change become more pronounced. The review suggests that contemporary approaches can draw on lessons learned from the Green Revolution and emphasize the integration of traditional practices and contemporary innovations. Sustainable water management, organic farming, and agroecological methods can all be studied to find ways to lessen the negative effects of intensive agriculture on the environment. In order to encourage a shift toward sustainable agricultural systems that maintain productivity while protecting natural resources, policymakers ought to give priority to funding and providing support for research that investigates these alternative options.

4. Regional Variability in Outcomes : The need for localized approaches to agricultural policy is emphasized by the disparities in the outcomes of the Green Revolution across various regions. States that successfully implemented Green Revolution technologies benefited economically, whereas others lacked infrastructure, investment, and access to resources. One-size-fits-all policies may not work because of this regional variation. Each region's distinct agricultural landscapes, socioeconomic contexts, and resource availability should be taken into consideration in future strategies. Access to markets, education, and tailored interventions are all necessary for ensuring that agricultural development is equitable across the nation.

5. Legacy and Contemporary Relevance : The legacy left by Lal Bahadur Shastri, particularly his idea of giving farmers more power as important contributors to national development, is still relevant today. His campaign slogan, "Jai Jawan, Jai Kisan," serves as a reminder of the connection between national prosperity and agricultural productivity. The agricultural industry, on the other hand, needs to be flexible and creative as new problems arise, such as climate change and pressures from global markets. The discussion emphasizes the significance of incorporating new technologies and methods while taking lessons from the past. The lessons learned from the Green Revolution ought to serve as a guide for future developments, and

policymakers ought to encourage a holistic approach in agriculture that places sustainability, equity, and resilience first.

CONCLUSION/FINDINGS

This critical analysis of Lal Bahadur Shastri's contributions to the Green Revolution sheds light on a complicated legacy that was marked by significant accomplishments as well as significant difficulties. India transformed from a food-deficient nation to one of relative self-sufficiency under Shastri's leadership, making remarkable progress in agricultural productivity. Food grain production increased significantly as a result of the introduction of high-yield variety seeds, modern irrigation methods, and chemical fertilizers. As a result, immediate concerns about food security were addressed. However, there were important caveats attached to these advancements. Farmers' socioeconomic disparities got worse as a result of the Green Revolution's uneven distribution of benefits. Smallholder farmers and communities on the margins struggled to gain access to resources and technology, while larger landowners frequently received the majority of the benefits. This disparity highlights the need for specialized assistance for vulnerable groups and poses serious concerns regarding the inclusiveness of agricultural development policies.

In addition, the negative effects of the Green Revolution on the environment—such as the degradation of soil, the scarcity of water, and the loss of biodiversity—are stark reminders of the unsustainable practices that can accompany intensive agriculture. Sustainable agricultural practices that maintain productivity while maintaining ecological health must be prioritized as India confronts the effects of climate change. The need for localized approaches to agricultural policy is further emphasized by the regional variation in the outcomes of the Green Revolution. In order to meet the diverse requirements of India's farming communities and promote equitable growth, interventions must be tailored to the specific circumstances of each state. In conclusion, India's current agricultural development can learn a lot from Lal Bahadur Shastri's vision and policies during the Green Revolution. Policymakers can develop strategies that encourage agriculture's sustainability, equity, and resilience by analyzing the era's successes and failures. In order to shape a future in which all farmers can thrive and contribute to the prosperity of the nation, it will be essential to adopt a holistic strategy that honors Shastri's legacy.

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INDIA'S SPACE PROGRAMME AS A CATALYST FOR DIGITAL GOVERNANCE, IT INNOVATION AND HEALTHCARE TRANSFORMATION : SPECIAL FOCUS ON KARNATAKA

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ABSTRACT

India's space programme, led by the Indian Space Research Organisation (ISRO), has evolved from basic satellite launches to a comprehensive ecosystem supporting communication, navigation, Earth observation and deep-space science. Recent missions such as Chandrayaan-3, Aditya-L1, XPoSat, NISAR, NVS-02 and CMS-03 mark a new phase of technologically advanced, application-oriented space activities. These missions are directly linked to national priorities including Digital India, disaster resilience, precision agriculture, climate adaptation, and digital health. Karnataka, home to ISRO's major centres and India's IT capital Bengaluru, benefits disproportionately through enhanced governance tools, a thriving space-tech and IT ecosystem, and pioneering telemedicine networks. ISRO's satellite-based telemedicine, Sat Com links to district hospitals, and navigation and remote-sensing applications support public health planning, emergency care, disease surveillance and training of medical personnel across the state. This paper reviews the latest progression of Indian space activities, analyses their benefits to the Government of India, and examines specific applications in Karnataka with emphasis on information technology (IT) and healthcare/medical services. It concludes that sustained investment in space infrastructure, coupled with state-level policy support and industry collaboration, can position Karnataka as a global model for space-enabled digital governance and health innovation.

Keywords : Indian space programme; ISRO; NavIC; remote sensing; telemedicine; NISAR; Aditya-L1; XPoSat; Karnataka; IT applications; digital health; disaster management.

INTRODUCTION

Since the launch of Aryabhata in 1975, India's space programme has progressed from technology demonstration to an operational, multi-mission system supporting communication, navigation, meteorology, Earth observation and science. Over the last decade, missions such as Mars Orbiter Mission, Chandrayaan-2 and Chandrayaan-3 have showcased India's ability to undertake complex interplanetary and lunar missions at relatively low cost.

THE RECENT PHASE (2023-2025) IS CHARACTERIZED BY

- Advanced science missions such as Aditya-L1 (solar observatory) and XPoSat (X-ray polarimetry). Navigation and communication satellites including NVS-02 for the NavIC constellation and CMS-03 for communication.
- Earth observation and climate missions such as NISAR, a joint NASA-ISRO Synthetic Aperture Radar mission launched in July 2025 to monitor land and ice surfaces with high accuracy.

- Preparatory steps toward human spaceflight, including Gaganyaan test missions.)

Parallel to these missions, India has developed an indigenous satellite navigation system, NavIC (Navigation with Indian Constellation), which provides high-precision positioning, timing and messaging services over India and up to 1,500 km beyond.) Recent policy moves have introduced standards for NavIC receivers and mandated NavIC support in new smartphones and vehicle tracking systems, signalling large-scale adoption.

Karnataka has a unique place in this landscape. Bengaluru hosts ISRO's headquarters, the U R Rao Satellite Centre (URSC) and several associated facilities. The state also houses a dense network of IT companies, start-ups and research institutions, making it an ideal testbed for space-enabled digital solutions in governance, industry and healthcare. ISRO's telemedicine initiatives and SatCom-based networks have already connected rural hospitals in Karnataka with speciality centres in Bengaluru, demonstrating how space technology can directly improve human development indicators.

This paper situates India's recent space progression in the broader context of national development, with specific emphasis on IT and medical applications relevant to the Government of India and the Government of Karnataka.

2. DISCUSSION

2.1. Recent Progression in Indian Space Activities : ISRO's recent missions highlight a shift from basic capabilities to high-end, data-rich platforms:

1. Aditya-L1(SolarObservatory) : Launched in September 2023 and positioned at the Sun-Earth L1 point by January 2024, Aditya-L1 continuously observes the Sun, contributing to understanding solar winds, flares and space weather. Better space-weather forecasts help protect communication, power grids and navigation systems used by government and industry.

2. XPoSat (X-ray Polarimeter Satellite) : Launched in January 2024, XPoSat enhances India's capability in high-energy astrophysics. While largely scientific, its technologies (detectors, data handling, on-board processing) sharpen India's competence in advanced electronics and software, which feed back into commercial and defence satellites.

3. NISAR (NASA-ISRO Synthetic Aperture Radar) : NISAR, launched aboard GSLV-F16 in July 2025, provides high-resolution, all-weather, day-night imaging of Earth's land and ice surfaces. Data from NISAR will support government programmes in agriculture (crop monitoring), water resources (ground deformation, groundwater), urban planning, landslide and flood risk mapping - directly informing governance in states like Karnataka with diverse agro-climatic zones and rapidly expanding cities.

4. Nav IC Constellation and NVS-02 : The NVS-02 satellite, launched in January 2025, strengthens NavIC's navigation and timing services. Recent regulations and standards have pushed NavIC integration into consumer devices, logistics, banking and emergency warning systems, transforming it into an operational civil infrastructure.

5. Communication Satellites and CMS-03 : CMS-03 (launched November 2025) is part of the newer generation of communication satellites providing high-throughput data links. These links are critical for e-governance, video conferencing, tele-education and telemedicine, especially in remote and tribal regions.

Collectively, these missions represent a space-based digital infrastructure layer on top of which IT and health applications can be built.

2.2. Benefits to Government of India : The Government of India increasingly treats space infrastructure as a "public digital good", similar to broadband or digital identity. Key benefits include:

1. Disaster Management and Climate Resilience

- Remote sensing satellites and missions like NISAR support flood modelling, landslide mapping, drought and crop stress monitoring, and coastline change analysis.
- Nav IC's messaging capability is now used by State Disaster Management Authorities to disseminate location-specific warnings for floods, earthquakes, tsunamis, cyclones and landslides.

This directly reduces loss of life and economic damage, and improves preparedness of national agencies like NDMA and IMD, as well as state agencies.

2. Agriculture and Rural Development

- Earth observation satellites provide data for crop acreage and yield estimation, soil moisture, irrigation scheduling and pest/disease surveillance.
- Such data enables targeted subsidy schemes, crop insurance (PMFBY) improvements, and precision agriculture, supporting policies for farmer welfare and food security.

3. Transportation, Logistics and Smart Cities

- NavIC is used for vehicle tracking, railway monitoring, fleet management and personal navigation.
- For smart cities, geospatial data supports traffic engineering, land-use planning, and monitoring of unauthorised construction, thus strengthening urban governance.

4. Strategic Autonomy and Data Sovereignty

Indigenous navigation (NavIC), communication (GSAT/CMS series) and Earth observation reduce dependence on foreign systems such as GPS or commercial imagery. This strategic autonomy is crucial for national security, border management, and resilient digital services.

5. Innovation and Start-up Ecosystem

New space reforms and open data policies are enabling private participation. Space-tech start-ups in India increasingly use ISRO data and infrastructure to build Earth analytics, drone mapping, IoT and logistics solutions, many of them based in Bengaluru and other Karnataka cities.

2.3. Specific Relevance to Karnataka : Karnataka benefits from space technology both as a producer (through ISRO centres and IT industry) and as a user (through governance and service delivery).

2.3.1. Space and IT Ecosystem

- Bengaluru hosts ISRO headquarters and URSC, responsible for spacecraft design and fabrication.
- The state's large pool of software engineers and electronics professionals directly contributes to satellite on-board software, mission control, data analytics and user-segment applications.
- Start-ups in Earth observation, drone analytics, navigation, geospatial intelligence and health-tech use ISRO data (from Cartosat, RISAT, NISAR, etc.) and NavIC services to develop products for agriculture, urban planning and logistics.

This synergy between space and IT positions Karnataka as a "space data innovation hub" for the entire country.

2.3.2. Governance Applications

Karnataka State Remote Sensing Applications Centre (KSRSAC) uses satellite imagery for:

- Land-use and land-cover mapping,
- Watershed and tank rejuvenation monitoring,
- Urban growth and infrastructure planning,
- Forest cover and encroachment monitoring,
- Disaster risk assessment (floods, landslides, drought).

Integration of this geospatial data into the Karnataka State Disaster Management Plan improves early warning, risk zoning and response planning, in alignment with NavIC-based warning systems.

2.3.3. Telemedicine and Medical Applications

Karnataka has been one of the earliest and most active users of ISRO's telemedicine network :

- ISRO's telemedicine initiative, using INSAT satellites, links rural hospitals and health centres to speciality hospitals in cities through VSAT-based video consultation, diagnostic data transfer and medical record sharing.
- The state launched telemedicine projects connecting district hospitals to super-speciality centres like Narayana Hrudayalaya, coordinated by KSRSAC and supported by the Health and Family Welfare Department.

- ISRO manuals note that Karnataka, Kerala and Chhattisgarh have initiated SatCom-based telemedicine facilities in all district hospitals, linking them to speciality centres in major cities.

These satellite-based systems support:

1. Specialist Consultations and Emergency Care

- Real-time audio-visual consultation between specialists in Bengaluru and patients in rural or tribal districts.
- Remote interpretation of ECG, X-ray, ultrasound and laboratory results; faster triage and referral for cardiac, neurological and maternal emergencies.

2. Medical Education and Continuous Training

- Continuing Medical Education (CME) sessions delivered via satellite from Bengaluru to remote centres, improving skills of doctors and nurses without requiring travel.

3. Public Health Surveillance and Planning

- Integration of telemedicine data, Earth observation (e.g., for vector habitats, waterlogging) and NavIC-tagged field surveys can support disease mapping (malaria, dengue), vaccination micro-planning, and health resource allocation across districts.

4. Telehealth and Home Care in Urban Karnataka

- Bengaluru's hospitals and health-tech start-ups are increasingly using teleconsultations, remote monitoring and AI-enabled diagnostics that rely on high-bandwidth satellite or hybrid satellite-terrestrial connectivity, especially for outreach to peri-urban and rural areas.

Overall, space-based telemedicine has helped reduce rural-urban disparity in access to specialists, improved utilisation of tertiary care resources in Bengaluru, and strengthened the health system's resilience.

2.4. IT-centric Value Creation from Space Data

From an IT perspective, Indian space assets provide three key layers of value:

1. Data Layer

- Continuous streams of imagery (NISAR, Cartosat), meteorological data (INSAT-3DS/INSAT series) and navigation/time signals (NavIC) form the raw material.

2. Platform and Analytics Layer

- Cloud-hosted platforms, geospatial analytics engines

and machine learning pipelines are often developed and operated by IT and start-up firms, many located in Karnataka.

- This includes crop classification, yield forecasting, urban heat island mapping, traffic analytics and risk scoring for disasters or disease outbreaks.

3. Application and Service Layer

- Government dashboards for land records, urban planning, disaster alerts, telemedicine scheduling, ambulance routing and medicine supply chain tracking.
- Citizen-facing mobile apps that integrate NavIC-based navigation, weather alerts, and health advisories; future smartphones are expected to use NavIC by default according to recent policy.

For Karnataka, where government departments are already heavily digitised, combining these layers can lead to space-enabled "smart governance"-for example, integrating satellite land-use data with property tax systems, or using NISAR data for monitoring encroachment on lakes and stormwater drains in Bengaluru.

3. CONCLUSION

India's space programme has entered a mature phase where missions are not only technologically sophisticated but deeply interwoven with national development goals. Recent launches such as Aditya-L1, XPoSat, NISAR, NVS-02 and CMS-03, together with the operationalisation of NavIC, form an integrated space infrastructure that supports disaster management, agriculture, logistics, smart cities, and digital health.

For the Government of India, this progression enhances strategic autonomy, improves the accuracy and timeliness of policy decisions, and fosters a competitive space-tech and IT industry. For Karnataka in particular, the co-location of ISRO centres and a vibrant IT ecosystem has created a unique opportunity to convert raw space data into high-value services in governance and healthcare. SatCom-based telemedicine networks, district-level SatCom links, and CME platforms have already demonstrated significant gains in equity of healthcare access.

Going forward, deeper integration of NavIC, NISAR and other satellite data into state e-governance platforms, health information systems and disaster management frameworks can make Karnataka a global exemplar of space-enabled public policy. Strengthening collaborations between ISRO, state agencies, academia and start-ups will

be essential to sustain this momentum and fully realise the developmental potential of India's space programme.

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THE IMPACT OF ECO-FRIENDLY MARKETING ON SUSTAINABILITY

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ABSTRACT

Green marketing has emerged as a strategic response to growing environmental concerns and the increasing demand for sustainable business practices. This study explores the relationship between green marketing initiatives and sustainable development, emphasizing how eco-friendly product design, transparent communication, and responsible resource management contribute to long-term environmental and economic resilience. The paper examines how consumers' shifting preferences toward sustainability influence corporate behaviour, driving firms to adopt greener value-creation models. It also highlights the challenges organizations face in balancing profitability with ecological responsibility, including greenwashing risks and the need for credible sustainability metrics. Overall, the analysis demonstrates that green marketing, when authentically implemented, serves not only as a competitive market strategy but also as a catalyst for sustainable development by fostering environmental stewardship, ethical consumption, and inclusive growth.

INTRODUCTION

In today's world, people are becoming more aware of environmental problems such as climate change, pollution, and the loss of natural resources. Because of this, many consumers want products that do not harm the environment. They prefer companies that care about nature and act responsibly. As a result, businesses are adopting green marketing, which means promoting products, services, and practices that are good for the environment.

Green marketing is not only about advertising eco-friendly products. It also includes how products are designed, how materials are used, how waste is managed, and how companies communicate their environmental values. At the same time, the idea of sustainable development has become important across the world. Sustainable development means growing in a way that protects the planet, supports people's well-being, and helps the economy without destroying resources for future generations.

This paper explains how green marketing supports sustainable development. It also discusses how consumers react to green marketing, what challenges companies face, and why honesty is important in environmental claims. The goal is to show that green marketing, when used responsibly, can help both businesses and society move toward a more sustainable future.

OBJECTIVES

- To analyse the relationship between green marketing practices and sustainable development goals.

- To identify the key drivers of green marketing adoption.
- To assess consumer perceptions and behaviours toward eco-friendly products.
- To explore barriers such as greenwashing, cost constraints, and lack of awareness.

LITERATURE REVIEW

Green marketing started in the late 1980s when companies began focusing on environmental issues through product improvements, recycling, and eco-friendly labels (Bhardwaj et al., 2023). Experts say that green marketing is more than just advertising; it also includes making products, packaging, pricing, and distributing them in ways that reduce harm to the environment (Berlián et al., 2024). Studies show that more consumers want sustainable products, but their choices are often limited by higher prices and doubts about the products (Adinugroho et al., 2025; Kiran et al., 2021). Trust is very important in green purchases-companies need to show that they truly care about the environment to gain consumer confidence (Bhardwaj et al., 2023). Researchers also warn about greenwashing, where companies make false or exaggerated environmental claims (Greenwashing: A systematic literature review, 2024; Sustainability, 2025). This can reduce consumer trust and hurt sustainability efforts. For green marketing to work, companies must be honest, use third-party certifications, and communicate clearly (Sustainability, 2025). Research also shows that green marketing can help businesses succeed in the long term because environmentally responsible companies often

get more loyal customers, run more efficiently, and stand out in the market (Parekh, 2018; Adinugroho et al., 2025).

METHODOLOGY

This study adopts a qualitative, descriptive approach, synthesizing insights from academic literature, case studies, and industry reports. The methodology involves:

- Reviewing existing research on green marketing and sustainability.
- Comparing theoretical perspectives with real-world corporate strategies.
- Analysing consumer trends and challenges.
- Identifying common themes that explain the link between green marketing and sustainable development.

This non-empirical method enables a comprehensive understanding of the subject without conducting primary data collection.

WHAT IS GREEN MARKETING?

Green marketing is the process of selling products or services by highlighting their environmental benefits. Examples include

- Products made from recycled or natural materials.
- Energy-efficient appliances.
- Companies using less plastic packaging.
- Brands promoting waste reduction or recycling.
- Businesses using renewable energy.

Green marketing encourages consumers to make choices that are better for the environment. It also pushes companies to adopt cleaner technologies and reduce their environmental impact.

Over time, green marketing has grown from simple eco-friendly labels to full business strategies that focus on sustainability. Today, companies try to show that they care about the environment through their mission, values, and daily operations-not just through advertisement.

SUSTAINABLE DEVELOPMENT AND ITS IMPORTANCE

Sustainable development means meeting today's needs without harming the ability of future generations to meet theirs. It has three pillars:

- 1. Environmental sustainability** - protecting natural resources, reducing pollution, and conserving energy.
- 2. Economic sustainability** - supporting stable growth and long-term profitability.

- 3. Social sustainability** - improving people's well-being, fairness, and quality of life.

Green marketing helps all three pillars when done honestly. It encourages companies to protect the environment while still running successful businesses. It also teaches consumers to make responsible choices.

CONSUMER ATTITUDES TOWARD GREEN MARKETING

Consumers play a huge role in the success of green marketing. Many people today prefer sustainable products, especially young adults and educated buyers. They are willing to pay more for eco-friendly options if they trust the brand.

However, not all consumers act the same. Some say they care about the environment, but they still buy cheaper or more convenient products that are not sustainable. This is known as the intention-behaviour gap.

REASONS FOR THIS GAP INCLUDE

- Higher prices for green products.
- Limited availability.
- Lack of trust in environmental claims.
- Lack of awareness of product benefits.

When companies explain clearly why their products are better for the environment and prove their claims, consumers are more likely to support them.

THE PROBLEM OF GREENWASHING:

A major challenge in green marketing is greenwashing. Greenwashing happens when companies make false or misleading claims about being environmentally friendly. This can include :

- Using vague words like "natural" or "eco-safe" without proof.
- Highlighting one small green feature while hiding larger negative impacts.
- Exaggerating sustainability benefits.

Green washing damages consumer trust. When people realize a company lied about being green, they may stop buying that brand completely. It also makes it harder for honest companies to stand out.

To avoid greenwashing, companies should:

- Provide clear and true information.
- Use trusted third-party certifications.
- Share proof, such as sustainability reports.
- Avoid exaggerated claims.

- Honesty is the foundation of successful green marketing.

How Green Marketing Supports Sustainable Development ?

1. ENVIRONMENTAL BENEFITS

Green marketing encourages companies to use:

- Less energy.
- Recycled materials.
- Cleaner production methods.
- Less harmful chemicals.

This reduces pollution, slows climate change, and protects natural ecosystems. It also inspires innovation in green technologies.

2. ECONOMIC BENEFITS

Green marketing can improve a company's long-term success. Businesses that care about the environment often:

- Save money by reducing waste and energy use.
- Attract more loyal customers.
- Build a positive brand image.
- Stay ahead of environmental regulations.

Eco-friendly products are becoming more popular, so companies that invest in sustainability can gain a competitive advantage.

3. SOCIAL BENEFITS

- Green marketing also improves society.
- Educates people about environmental issues.
- Encourages responsible consumption.
- Creates safer products.
- Supports healthier lifestyles.
- Promotes fairness and ethical behaviour.
- When businesses act responsibly, they help communities' live better lives.

CHALLENGES IN IMPLEMENTING GREEN MARKETING

Although green marketing has many benefits, companies still face several challenges:

- High Costs :** Eco-friendly materials and technologies can be expensive.
- Limited Knowledge :** Some companies do not know how to implement sustainable practices effectively.
- Lack of Regulations :** In some countries, environmental rules are weak, making it easier for greenwashing to occur.

- Risk of Consumer Doubt :** If consumers don't trust claims, even honest efforts may fail.

- Competition:** Companies must balance green efforts with business goals, especially in competitive markets.

To overcome these challenges, businesses must commit to long-term sustainability instead of short-term marketing gains.

CONCLUSION

Green marketing is a powerful tool that can help businesses, consumers, and the environment at the same time. When companies use honest and responsible green strategies, they not only protect nature but also improve their reputation, strengthen customer trust, and achieve long-term success. Green marketing also encourages people to choose products that are safer for the planet, supporting sustainable development for future generations.

However, for green marketing to truly make a difference, companies must avoid greenwashing and focus on real, measurable actions. Governments, businesses, and consumers must work together to create a cleaner, healthier, and more sustainable world.

Green marketing is not just a trend-it is an essential part of building a future where economic growth and environmental protection go hand in hand.

FINDINGS

Across studies, several common points appear:

- Green marketing has grown from simple eco-labels to a broad strategy involving the whole business.
- Consumer interest in sustainability is increasing, but trust and price still affect buying decisions.
- Greenwashing remains a major barrier to effective green marketing.
- When implemented truthfully, green marketing positively contributes to sustainable development.

Overall, this study shows that green marketing is a powerful tool, but it must be used sincerely and supported by real environmental actions.

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UNDERSTANDING POLITICAL CULTURE : DIMENSIONS, TYPES AND ITS ROLE IN MODERN SOCIETY

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ABSTRACT

The "Man is by nature political animal". One of the famous sayings of Aristotle. Which means man is naturally sociable and they are naturally drawn to various socio-political associations in order to satisfy their social needs. Over the time how the society controls and reacts to these socio-political associations will become that society's political culture. Political culture, political socialization, political orientation and political communication are all parts of the same matrix of political awareness, which has been essential components of social life since the origin of human civil society. All these components are closely interrelated to each other that health of one affects the health of the other. Hence their overall health and character has a deep bearing upon the overall health of the society as well.

Key Words : (1) Political Culture, (2) Political behavior, (3) Culture, (4) Public opinion.

OBJECTIVES OF THE PAPER

1. To understand the meaning of political culture.
2. To identify different types of political culture.
3. To identify the need of understanding political culture in order to analyse political situation.

METHODOLOGY

The current paper is narrative in nature which explains different dimensions of political culture. Most of its information is based on secondary data and information which is gathered from the concerned sources according to need of the research. While preparing this paper many books, articles, papers and web-sites are used/ referred.

INTRODUCTION

Culture in its broadest sense is the way of life of people. Means the way they do things. Different groups may have different cultures. A culture is passed on to the next generation by learning, whereas genetics are passed on by heredity naturally. Culture of the people is visible in their writing, religion, food system, dress, music, clothes, cooking and in what they do. Sociologists and anthropologists tend to differentiate between culture and nature. Nature is the features which is passed on from one generation to the next by hereditary. Culture is the features that passed on by learning, rather than through hereditary. Political scientists use the term Political culture in a narrower sense to refer to a people's psychological orientation, political culture being the 'pattern of orientations to political objects such as parties, elections, government, the constitution, expressed in beliefs and values.

Political culture is entirely differ from public opinion. Political culture is fashioned out of long-term values and learned capacity to react to situation. Public opinion is simply people's reactions to specific politics and problems. Public opinion is temporary reaction to present situation whereas political culture is the average political orientation of the people.

Meaning of political Culture : Political Culture is defined as the set of attitudes, beliefs, and sentiments that give order and meaning to a political process and which provide the underlying assumptions and rules that govern behavior in the political system. Political culture of particular society is the manifestation in aggregate form of the psychological and subjective dimensions of politics. A political culture is the product of both the collective history of a political system and the life histories of the members of that system, and thus it is rooted equally in public events and private experiences. A political culture is a set of attitudes, political orientation and practices held by a people that shapes their political behavior. Political behavior is act of individual or collective involvement in the political process (election, campaign, nature of protest), or any activity which has political consequences in relation to government and policy. It also includes people's practices, moral judgments, political myths, beliefs and ideas about what makes for a good society. Political culture of a country is visible in government, but it also incorporates elements of history and tradition that may predate the current regime.

Political cultures matter a lot because they shape a population's political perceptions and actions. Political

culture can be nurtured by governments. They can help in shaping political culture and public opinion through education, public events and commemoration of the past. Political cultures changes from state to state and sometimes even within a state. But generally political culture remains more or less the same over time

Political Scientist *Gabriel Almond* observes "every political system is embedded in a particular pattern of orientation to political actions" this means in any operation political system there is a structured way of politics, which gives meaning to the polity, discipline to institutions, and social relevance to individual acts. The concept of political culture reveals the political behavior, political orientation, the traditions of a society, the spirit of its public institutions, the collective passions and the reasoning of its citizens.

Robert Dahl identifies different elements of the culture.

- (1) Orientation of problem-solving- are they pragmatic or rationalistic ?
- (2) Orientation of collective actions- are they co-operative or non co-operative ?
- (3) Orientations to the political system- are they allegiant or alienated ?
- (4) Orientations to other people- are they trustful or mistrustful ?

Types of political culture : *Gabriei Almond* and *Sidney verba* in 'The Civic Culture' have identified three general types of political culture participant culture, subject culture and parochial culture.

- i. **Participant culture :** People involving actively in each and every sphere of politics. A participant political culture is one in where citizens pay deep attention to politics and regard popular participation as both desirable and effective.
- ii. **Subjective Culture :** People are not so active nor interested in politics but have limited capacity to influence government happenings.
- iii. **Parochial culture :** People are ignorant of civic sense. They don't know the importance of citizenship, they lack ability to judge good politics.

Characteristics of Political Culture : Political culture has three basic features.

- (a) **Values :** A political value is something you believe strongly in that relates to how government should be operated, whom it should serve or not serve. At the heart of this is the question-what is a public good? It is set of beliefs.

- (b) **Beliefs :** Beliefs are deep rooted patterns of thought. These are trusted way of thinking.
- (c) **Attitude :** Settled mode of thinking. The way people look into the things and response is attitude. The opinion and belief towards particular pattern of behavior.

CONCLUSION

The concept and dimensions of political culture facilitate good understanding of the given country. It also provides behavioral form of analysis to study political concept like political ideology and political theories. *Lucian Pye* describes "The theory of political culture was developed in response to the need to bridge a growing gap in the behavioral approach in Political Science between level of micro analysis based on psychological interpretation of the individual's political behavior and the level of macro analysis based on the variables common to political sociology." Hence the study of political culture helps in understanding of that country's political orientation. Once that is understood it can be nurtured positively by the governments through education and good practice. So it is very important to study political culture of the given society.

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THE ROLE OF SCIENCE, PHYSICS, AND INDIGENOUS TECHNOLOGY IN THE 2025 INDIA-PAKISTAN CONFLICT

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ABSTRACT

The 2025 India-Pakistan conflict was a brief but intense military exchange triggered by a terrorist attack in Pahalgam, Jammu & Kashmir. This paper explores the scientific and technological dimensions of the conflict, including the role of nuclear physics, missile technology, artificial intelligence, and indigenous innovations like the BrahMos missile. It also presents verified data on casualties, infrastructure damage, and environmental impact, while reflecting on the ethical implications of intelligent warfare.

1. INTRODUCTION

The Indo-Pakistani conflict of 2025 was not merely a geopolitical standoff-it was a showcase of how deeply science, physics, and indigenous technology are embedded in modern warfare. From missile trajectories to quantum-secure communication, the tools and consequences of war were shaped by physical laws and strategic innovation. This paper investigates the scientific underpinnings of the conflict and evaluates their impact on military operations, civilian life, and regional stability.

2. CAUSE OF WAR

The immediate trigger was the Pahalgam terrorist attack on 22 April 2025, in which 26 Indian tourists were killed by militants linked to The Resistance Front (TRF)-an off shoot of Lashkar-e-Taiba. India accused Pakistan of sponsoring the attack, leading to :

- **Operation Sindoor** : Indian missile strikes on terror launchpads in Pakistan and PoK.
- **Diplomatic Fallout** : Expulsion of Pakistani diplomats, suspension of the Indus Waters Treaty, and cancellation of visa services.
- **Military Escalation** : Pakistan retaliated with artillery and drone strikes on Indian border towns, including Poonch, killing 16 civilians.

The war lasted from 23 April to 10 May 2025, ending in a ceasefire agreement.

3. ROLE OF SCIENCE AND PHYSICS

- **BrahMos Missile** : Supersonic cruise missile developed by DRDO and Russia's NPOM.
- **Artificial Intelligence (AI)**: Machine-based systems for autonomous decision-making and targeting.

- **EMP (Electromagnetic Pulse)**: Burst of radiation disabling electronics.
- **Quantum Encryption** : Secure communication using quantum mechanics.
- **Nuclear Winter** : Climatic cooling caused by soot and aerosols from nuclear explosions.

4. DETAILED DISCUSSION

4.1. Nuclear Physics and Strategic Deterrence

- India's strikes were guided by physics-based models of blast radius, fallout, and EMP effects.
- Fallout modeling used Gaussian plume equations to predict contamination zones.
- EMPs disrupted radar and communications near airbases.

4.2 BrahMos Missile Development by DRDO

- **Deployment** : Used in air-launched and land-based configurations.
- **Capabilities** : Mach 2.8-3.0 speed, 300-500 km range, pinpoint accuracy.
- **Variants** :
 - ✓ **BrahMos-A** : Launched from SU-30MKI jets.
 - ✓ **BrahMos-NG** : Compact version under development.
- **Impact** : Enabled deep-strike precision with minimal collateral damage.

4.3 AI-Powered Indian Defense Technologies

- **Rudrastra Drone** : Live-streamed strikes from 3,500m altitude.
- **AI in Surveillance** : Infrared and LiDAR used for terrain mapping.

- **Humanoid Robots** : Deployed for reconnaissance and bomb disposal.
- **Quantum Communication** : Secured military channels via quantum key distribution.

4.4. Environmental Modeling

- Seismic sensors detected artificial tremors from underground strikes.
- Climate models predicted a 5-10°C drop in temperature in affected zones.
- Ozone depletion from NOx emissions increased UV radiation exposure.

5. RESULTS AND DISCUSSION

5.1 Casualties

Country	Civilian Deaths	Military Deaths	Other Fatalities
India	39 civilians	13-16 soldiers	100+ militants (claimed)
Pakistan	31 civilians	33-40 soldiers	50-100 unverified

A three-year-old girl was among the Pakistani civilian casualties.

5.2 Infrastructure Damage

✓ India

- Minor damage to Pathankot, Udampur, Bhuj airbases.
- Civilian structures hit: gurudwara, school, homes in Jammu & Kashmir.
- Stock market dip: Sensex fell by 1300 points.

✓ Pakistan :

- Damage to Noseri Dam, threatening water supply.
- Civilian targets: mosque-seminary, schools, homes in Muzaffarabad and Punjab.
- Military sites hit: Skardu, Sargodha, Jacobabad, Bholari, Murid, Rafiqui, Nur Khan airbases.

5.3. Economic Impact

Country	Estimated Losses	Recovery Outlook
India	\$100 billion (speculative)	Stable due to diversified economy
Pakistan	\$ 87 billion	Severe strain on infrastructure

6. CONCLUSION

The 2025 India-Pakistan conflict demonstrated the centrality of science, indigenous technology, and artificial intelligence in modern warfare. The deployment of BrahMos missiles and AI-powered systems enabled precision strikes, minimized collateral damage, and reshaped strategic deterrence. While the conflict resulted in over 100 confirmed deaths and billions in economic losses, it also highlighted the ethical imperative of responsible innovation. As India continues to advance its defense capabilities, the fusion of physics and AI must be guided by diplomacy, accountability, and humanitarian values.

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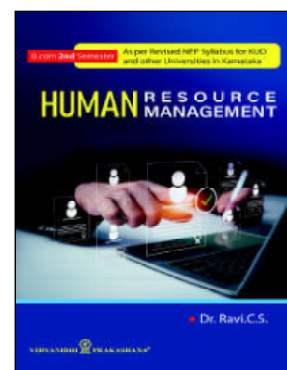

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EFFICACY OF SYNECTICS TEACHING MODELS IN FOSTERING LANGUAGE CREATIVITY IN ENGLISH AMONG SECONDARY SCHOOL STUDENTS

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ABSTRACT

Creativity is one of the most valued abilities in all societies, as it enables learners to think critically, solve problems innovatively, and express themselves effectively. In the field of language education, fostering creativity has become increasingly important in the context of the 21st-century skills framework and the National Education Policy (NEP) 2020, which emphasizes creative and critical thinking as essential learning outcomes. The Synectics model of teaching, developed by William J.J. Gordon and his associates, is a powerful instructional strategy that uses metaphorical and analogical thinking to stimulate creativity among learners. By engaging students in structured creative activities, Synectics helps them break away from conventional thought patterns and develop divergent thinking skills. The present experimental study investigates the efficacy of the Synectics teaching model in fostering language creativity in English among secondary school students. The study involved two groups-experimental and control-taught through Synectics-based instruction and traditional methods, respectively. Language creativity was assessed using the Test of Story Construction, Test of Poetic Diction, and Vocabulary Test. Statistical analysis revealed that the experimental group outperformed the control group significantly across all three measures. These findings demonstrate that the Synectics model is an effective pedagogical approach for enhancing language creativity, encouraging flexible thinking, and enriching students' linguistic expression. The study highlights the pedagogical implications of integrating innovative teaching models like Synectics into English language classrooms to nurture creative competencies among learners in line with contemporary educational goals.

Keywords : Synectics Teaching Model, Language Creativity, English Language Teaching,

CONCEPT OF SYNECTICS AND CREATIVITY

Invention and creativity are essential for the progress of society and for making life more meaningful. Therefore, there is a need to orient students toward creative thinking. Research on creativity especially on nurturing and promoting creative thinking in classroom settings is still at a relatively early stage in India. Much remains to be explored and accomplished in this emerging field. Creativity is defined as the ability to bring something new into existence; it is characterized by novelty, originality, and universal inventiveness. Guilford (1956) discussed creativity as divergent thinking in his famous Structure of Intellect (S.I.) model. According to him, creativity is not a unitary trait but rather a collection of different abilities and other characteristics. Passi (1972) described creativity as a multidimensional attribute differentially distributed among individuals. It primarily includes the factors of problem sensitivity, fluency, flexibility, originality, acquisitiveness, and persistence.

The school environment plays a crucial role in unfolding the creative talents of learners. Schools provide a platform where ample opportunities can be created to

promote creative thinking as well as achievement in various fields of life. However, most schools currently focus on preparing students to score high marks in examinations by memorizing subject matter, often through rote learning and cramming.

To enhance students' creativity, it is essential to adopt appropriate methods of teaching that provide opportunities for critical and divergent thinking, thereby fostering both understanding and creative abilities. The Synectics model of teaching is one such approach that has genuine potential to enhance learners' creativity. It provides opportunities to engage in various metaphorical and analogical activities key elements in developing creative thinking through which students can think critically and divergently. Thus, traditional teaching methods, which often place undue emphasis on convergent thinking, should be supplemented with methods that foster divergent thinking.

Language Creativity primarily includes the dimensions of fluency, flexibility, originality, and elaboration :
1. Fluency refers to a rapid flow of ideas and the tendency to modify or shift directions quickly. 2. Flexibility is the ability to break away from existing patterns of thought and shift to new patterns, generating ideas in novel directions.

3. Originality indicates uncommonness or rarity in ideas.
4. Elaboration refers to the ability to expand or develop a theme creatively, combining ideas with higher levels of thought.

Factors of Language Creativity : Language creativity can be measured using the following five factors: Story Construction, Dialogue Writing, Poetic Diction, Descriptive Style, and Vocabulary Test

For the present study, the investigator has focused on three factors : (1) Story Construction, (2) Poetic Diction, and (3) Vocabulary Test.

- 1. Story Construction :** Here, the free play of imagination is encouraged. Students are asked to write or complete a story based on a given situation.
- 2. Poetic Diction :** This involves writing witty and crisp dialogues between two persons. Feelings, thoughts, attitudes, and emotions are expressed through conversations between hypothetical roles.
- 3. Vocabulary Test :** This assesses the vocabulary of the individual. Students are required to write meaningful words derived from a given word or set of letters.

The Synectics model of teaching in language classrooms helps students foster creativity. Their language achievement and language creativity are enhanced through this model as it encourages free thinking. Language creativity allows for freedom of response, both qualitatively and quantitatively, in measuring various dimensions of divergent thinking.

Teaching English in India, which has been described as "the world's largest democratic enterprise of its kind" (N. Krishnaswamy and T. Shriraman, 1994), faces multiple challenges, particularly because learners come from diverse socio-economic, linguistic, and cultural backgrounds and display widely varying levels of competence in English. Synectics is a creative problem-solving process designed to increase the likelihood of successful solutions. It improves the effectiveness of creative problem-solving sessions by removing negative elements of human group dynamics and replacing them with positive, collaborative tools. This enables teams to focus their collective abilities on the challenges at hand.

REVIEW OF RELATED LITERATURE

Many studies have been conducted across the world to explore different methods for developing creativity through the Synectics model of teaching. Rahman & Khan (2023) conducted a recent study in Bangladesh and found

that students taught through the Synectics method performed better in vocabulary acquisition, metaphoric writing, and creative expression. The model also helped reduce students' anxiety toward English learning by making abstract concepts more relatable through analogies. Fitri et al. (2022) demonstrated that using digital tools to create and narrate stories helped EFL students improve their vocabulary, coherence, and imaginative expression in writing. Mishra & Panda (2021), in a comparative study involving rural and urban students, found that the use of creative dramatics, storytelling, and visual metaphors in English classrooms significantly improved creativity scores. This effect was particularly strong among rural students who had limited exposure to traditional enrichment programs. Naik & Mishra (2021) examined secondary schools in Odisha and explored the impact of Synectics on divergent thinking and creative expression. Their findings confirmed that the method enabled students to think beyond conventional ideas and express themselves more freely in both speech and writing. Reddy (2021) emphasized that rural students can develop creative competence in English if they are exposed to metaphor-based models like Synectics in a supportive classroom environment. Al-Mahrooqi & Denman (2020) focused on Omani secondary school students and found that structured creative writing tasks involving metaphor, sensory detail, and personification helped improve both language proficiency and creativity. Their study highlighted that creativity can be systematically developed through well-designed curricula. Mayer et al. (2020) suggested that emotionally intelligent learners tend to demonstrate better creative output in writing and speaking tasks due to their resilience and openness to novel ideas. Murthy & Ramesh (2020) conducted a quasi-experimental study in Karnataka and concluded that Synectics helped rural students enhance fluency, elaboration, and emotional expression in English composition. Walia & Wadhwa (2020) highlighted the impact of project-based learning and integrated creativity workshops on students' ability to generate original ideas in English composition and poetry writing. The authors concluded that exposure to creative methods is directly proportional to enhanced language creativity. Priya & Jayanthi (2019) found that the Synectics approach enhanced creativity and collaborative learning among secondary school students. The participants expressed higher motivation and engagement in English classes when tasks included analogical exercises and metaphorical descriptions. Pass (1985) conducted a study to examine the effect of the Synectics model of teaching on creative writing

and found significant improvement in students' performance after being exposed to the model. Brown (1980) studied the effects of Synectics-based training on students' vocabulary, reading skills, and self-concept. The study involved three groups : 1) The first (experimental group) was trained using Synectics-based materials focused on connection-making. 2) The second (Control Group I) used materials adapted from the experimental sessions. 3) The third (Control Group II) received no Synectics-based instruction. The results showed no statistically significant difference between the groups after training.

Overall, the above studies indicate that the Synectics model is an effective approach for enhancing language creativity. Its success has led to the development of more classroom activities that encourage students to produce new ideas, original combinations, and creative expressions in language learning contexts.

RATIONALE OF THE STUDY

1. One of the major problems with the teaching of Indian languages is that the emphasis is placed on providing information through language rather than on developing students' creative potential. There is a pressing need to foster language creativity among students.
2. In India, greater importance has traditionally been given to vernacular languages and their development. As a result, the development of English language creativity has been neglected. Therefore, it is essential to focus on nurturing creativity in the English language as well.
3. In short, it can be said that creative language ability is a highly desired component in language education for Indian students.

LIMITATIONS OF THE STUDY

The present study has the following limitations:

1. The study was confined to English medium students of 9th standard in a high school located in Cuddalore only.
2. The conventional method of teaching was used in the study for the purpose of observing, controlling, comparing, and assessing the development of creativity in English.
3. For the experiment, only three factors of language creativity: story construction, vocabulary test, and poetic diction were considered, while descriptive style and dialogue writing were excluded.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To find out the significant difference between the pre-test and post-test scores of the English Language Creativity Test on Story Construction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the experimental group.
2. To find out the significant difference between the pre-test and post-test scores of the English Language Creativity Test on Story Construction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the control group.
3. To find out the significant difference between the pre-test and post-test scores of the English Language Creativity Test on Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the experimental group.
4. To find out the significant difference between the pre-test and post-test scores of the English Language Creativity Test on Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the control group.
5. To find out the significant difference between the pre-test and post-test scores of the English Language Creativity Test on Vocabulary and its dimensions (fluency, flexibility, originality, and elaboration) among students of the experimental group.
6. To find out the significant difference between the pre-test and post-test scores of the English Language Creativity Test on Vocabulary and its dimensions (fluency, flexibility, originality, and elaboration) among students of the control group.

HYPOTHESES

In pursuance of the above-stated objectives, the following hypotheses were formulated:

1. There is no significant difference between the pre-test and post-test scores of the English Language Creativity Test on Story Construction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the experimental group.
2. There is no significant difference between the pre-test and post-test scores of the English Language Creativity Test on Story Construction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the control group.

3. There is no significant difference between the pre-test and post-test scores of the English Language Creativity Test on Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the experimental group.
4. There is no significant difference between the pre-test and post-test scores of the English Language Creativity Test on Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) among students of the control group.
5. There is no significant difference between the pre-test and post-test scores of the English Language Creativity Test on Vocabulary and its dimensions (fluency, flexibility, originality, and elaboration) among students of the experimental group.
6. There is no significant difference between the pre-test and post-test scores of the English Language Creativity Test on Vocabulary and its dimensions (fluency, flexibility, originality, and elaboration) among students of the control group.

DESIGN OF THE STUDY

In the present study, the experimental method was used to collect data. A pre-test and post-test matched group experimental design was adopted. The study was conducted on a sample of 200 students, selected through purposive sampling. Raven's Progressive Matrices was used for testing and matching the intelligence levels of students.

Both the experimental and control groups were selected on the basis of their intelligence test scores to ensure equivalence between the groups.

The experimental group was taught using the Synectics model of teaching, while the control group received instruction through the traditional method. The efficacy of the Synectics model in enhancing language creativity was determined by administering a creativity test to both groups of students. The creativity test used for assessing language creativity in English was constructed and standardized by the investigator following established test development procedures.

TOOLS OF THE STUDY

- (a) **Treatment Tools :** The Synectics model-based lesson plans in the English language were used to impart instruction to the students.
- (b) **Measuring Tools :** Raven's Progressive Matrices (RPM) and The English Language Creativity Test, prepared and standardized by the investigator.

STATISTICAL TECHNIQUES USED

The Mean, Standard Deviation, and 't' test were used to analyze the data collected from the groups.

DATA ANALYSIS AND INTERPRETATIONS

To determine the effect of the Synectics Model of Teaching, the paired 't' test was applied, as shown in the following table.

Table 1 : Results of the paired 't' test for pre-test and post-test scores of the English Language Creativity Test on Story Construction and its dimensions (fluency, flexibility, originality, and elaboration) in the experimental group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Story Construction	Pre-test	16.4000	2.5831	-13.6170	3.8209	- 14. 6574	P < 0.01	S
	Post-test	28.0000	4.9524					
Fluency	Pre-test	5.9500	0.5111	-3.8500	1.7840	- 15.5009	P < 0.01	S
	Post-test	8.8000	1.0635					
Flexibility	Pre-test	5.7500	0.5111	-3.8500	1.8840	- 15.5009	P < 0.01	S
	Post-test	6.9000	1.0635					
Originality	Pre-test	4.4000	0.6352	-3.4000	1.6372	- 13.7845	P < 0.01	S
	Post-test	6.9800	1.1715					
Elaboration	Pre-test	4.5600	0.6352	-3.4000	1.2372	- 13.7845	P < 0.01	S
	Post-test	6.9700	1.1715					

The above table reveals that the pre-test and post-test scores differ statistically significantly with respect to story construction and its dimensions (fluency, flexibility, originality, and elaboration) at the 0.01 level of significance in the experimental group. Hence, the null hypothesis is

rejected, and the alternative hypothesis is accepted. This indicates that the pre-test and post-test scores of story construction and its dimensions differ significantly among the students of the experimental group.

Table 2 : Results of the paired 't' test for pre-test and post-test scores of the English Language Creativity Test on Story Construction and its dimensions (fluency, flexibility, originality, and elaboration) in the control group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Story Construction	Pre-test	12.0444	2.5500	-14.127	8.035	11.9620	P < 0.01	S
	Post-test	24.9500	6.6129					
Fluency	Pre-test	3.5333	0.4138	-4.4011	2.778	-11.9396	P < 0.01	S
	Post-test	6.8333	1.6678					
Flexibility	Pre-test	3.5333	0.4138	-4.4278	2.769	-11.9663	P < 0.01	S
	Post-test	6.8500	1.6513					
Originality	Pre-test	1.9600	0.5923	-4.7934	3.242	-10.5765	P < 0.01	S
	Post-test	5.638	1.8286					
Elaboration	Pre-test	2.167	0.7711	-4.7278	2.250	-9.9144	P < 0.01	S
	Post-test	5.633	1.8286					

The above table shows that the pre-test and post-test scores differ statistically significantly with respect to story construction and its dimensions (fluency, flexibility, originality, and elaboration) at the 0.01 level of significance in the control group. Hence, the null hypothesis is rejected,

and the alternative hypothesis is accepted. This indicates that the pre-test and post-test scores of story construction and its dimensions differ significantly among the students of the control group.

Table 3 : Results of the paired 't' test for pre-test and post-test scores of the English Language Creativity Test on Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) in the experimental group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Poetic Diction	Pre-test	11.9111	2.7998	-6.7000	3.9365	-11.5956	P < 0.01	S
	Post-test	17.5611	4.5369					
Fluency	Pre-test	4.4944	1.7109	-2.6778	0.7772	-13.9937	P < 0.01	S
	Post-test	5.0611	2.2584					
Flexibility	Pre-test	4.4944	1.7010	-2.4278	0.8595	-9.7476	P < 0.01	S
	Post-test	5.8111	2.2452					
Originality	Pre-test	3.1778	1.4762	-2.6611	3.3318	-4.9187	P < 0.01	S
	Post-test	4.7278	3.2634					
Elaboration	Pre-test	3.1778	1.4762	-2.2778	3.8126	-9.1847	P < 0.01	S
	Post-test	4.3444	1.9087					

The above table shows that the pre-test and post-test scores differ statistically significantly with respect to Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) at the 0.01 level of significance in the experimental group. Hence, the null hypothesis is rejected,

and the alternative hypothesis is accepted. This indicates that the pre-test and post-test scores of Poetic Diction and its dimensions differ significantly among the students of the experimental group.

Table 4 : Results of the paired 't' test for pre-test and post-test scores of the English Language Creativity Test on Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) in the control group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Poetic Diction	Pre-test	8.9778	2.3283	-7.6778	3.8236	-14.3611	P < 0.01	S
	Post-test	14.5333	3.5285					
Fluency	Pre-test	3.3611	1.4766	-2.9111	1.9570	-12.7524	P < 0.01	S
	Post-test	5.1611	1.8463					
Flexibility	Pre-test	3.3611	1.4566	-2.9111	1.9570	-12.7524	P < 0.01	S
	Post-test	5.1611	1.8463					
Originality	Pre-test	2.8444	1.4518	-2.5944	1.8609	-11.7241	P < 0.01	S
	Post-test	4.3278	1.7894					
Elaboration	Pre-test	5.8444	1.4518	-2.5944	1.8609	-11.7041	P < 0.01	S
	Post-test	4.3278	1.7894					

The above table indicates that the pre-test and post-test scores differ statistically significantly with respect to Poetic Diction and its dimensions (fluency, flexibility, originality, and elaboration) at the 0.01 level of significance in the control group. Hence, the null hypothesis is rejected,

and the alternative hypothesis is accepted. This indicates that the pre-test and post-test scores of Poetic Diction and its dimensions differ significantly among the students of the control group.

Table 5 : Results of the paired 't' test for pre-test and post-test scores of the English Language Creativity Test on Vocabulary and its dimensions (fluency, flexibility, originality, and elaboration) in the experimental group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Vocabulary	Pre-test	23.5333	2.5152	-3.5333	1.5862	-12.2006	P < 0.01	S
	Post-test	27.0667	2.2846					
Fluency	Pre-test	9.3667	0.8996	-0.4833	0.6363	-4.1605	P < 0.01	S
	Post-test	9.8500	0.4385					
Flexibility	Pre-test	9.3667	0.8996	-0.4833	0.6363	-4.1605	P < 0.01	S
	Post-test	9.8500	0.4385					
Originality	Pre-test	2.4000	0.6486	-1.2833	0.5676	-12.3847	P < 0.01	S
	Post-test	3.6833	0.8558					
Elaboration	Pre-test	2.4000	0.6486	-1.2833	0.5972	-11.7707	P < 0.01	S
	Post-test	3.6833	0.8558					

It can be observed from the above table that the pre-test and post-test scores differ statistically significantly with respect to the Vocabulary Test and its dimensions (fluency, flexibility, originality, and elaboration) at the 0.01 level of significance in the experimental group. Hence,

the null hypothesis is rejected, and the alternative hypothesis is accepted. This indicates that the pre-test and post-test scores of the Vocabulary Test and its dimensions differ significantly among the students of the experimental group.

Table 6 : Results of the paired 't' test for pre-test and post-test scores of the English Language Creativity Test on Vocabulary and its dimensions (fluency, flexibility, originality, and elaboration) in the control group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Vocabulary	Pre-test	20.9667	2.2047	-4.9833	3.9924	-6.8367	P < 0.01	S
	Post-test	25.9500	3.3997					
Fluency	Pre-test	8.9167	0.8313	-0.4167	1.1824	-1.9302	P < 0.01	S
	Post-test	9.333	0.1367					
Flexibility	Pre-test	8.9167	0.8313	-0.4167	1.1824	-1.9302	P < 0.01	S
	Post-test	9.3333	1.0367					
Originality	Pre-test	1.5667	0.6121	-2.1333	1.4618	-7.9935	P < 0.01	S
	Post-test	3.7000	1.3493					
Elaboration	Pre-test	1.5667	0.6121	-2.0167	1.2898	-8.5641	P < 0.01	S
	Post-test	3.5833	1.0262					

It can be observed from the above table that the pre-test and post-test scores differ statistically significantly with respect to the Vocabulary Test and its dimensions (fluency, flexibility, originality, and elaboration) at the 0.01 level of significance in the control group. Hence, the null hypothesis is rejected, and the alternative hypothesis is accepted. This indicates that the pre-test and post-test scores of the Vocabulary Test and its dimensions differ significantly among the students of the control group.

FINDINGS

The main findings of the study are as follows:

1. There is a significant difference between the pre-test and post-test scores of the English Language Creativity Test on Story Construction and Poetic Diction, and their dimensions (fluency, flexibility, originality, and elaboration) among the students of the experimental group.
2. There is a significant difference between the pre-test and post-test scores of the English Language Creativity Test on Story Construction and Poetic Diction, and their dimensions (fluency, flexibility, originality, and elaboration) among the students of the control group.

3. There is a significant difference between the pre-test and post-test scores of the English Language Creativity Test on Vocabulary, and its dimensions (fluency, flexibility, originality, and elaboration) among the students of the experimental group.
4. There is a significant difference between the pre-test and post-test scores of the English Language Creativity Test on Vocabulary, and its dimensions (fluency, flexibility, originality, and elaboration) among the students of the control group.
5. From the overall analysis, it was observed that the experimental group's performance in the Test of Story Construction, Test of Poetic Diction, and Test of Vocabulary was significantly higher than the control group's performance.

EDUCATIONAL IMPLICATIONS

The present study has the following implications:

1. The findings indicate that language creativity can be significantly enhanced, along with general creativity, when students are exposed to the Synectics model of teaching. This suggests that creative teaching strategies can play a vital role in fostering both linguistic and cognitive skills.
2. Teachers should encourage independent and critical thinking by providing students with rich experiences, diverse activities, and enrichment programs that stimulate creativity and problem-solving abilities.
3. To ensure that India's future generation is globally competent, the teaching of English should be strengthened by incorporating a variety of engaging activities focused on reading, writing, listening, and speaking skills. Innovative approaches, such as Synectics, can make language learning more meaningful, practical, and creativity-oriented.
4. Educational planners and curriculum developers should integrate creative instructional strategies like the Synectics model into regular classroom teaching, so that learners not only achieve academic proficiency but also develop higher-order thinking skills and a creative mindset.
5. Schools should focus on holistic language development, where emphasis is not just on rote learning but also on fostering imaginative expression, vocabulary enrichment, and effective communication skills, preparing students to tackle real-world challenges.

CONCLUSION

The present study demonstrates that the Synectics

model of teaching is highly effective in fostering language creativity among secondary school students in English. Exposure to this model significantly enhanced students' abilities in story construction, poetic diction, and vocabulary, along with the dimensions of fluency, flexibility, originality, and elaboration. The experimental group, taught through the Synectics approach, consistently outperformed the control group, indicating that creative, analogy-based, and metaphorical teaching strategies can substantially improve both linguistic competence and divergent thinking skills.

These findings suggest that integrating Synectics-based instructional strategies into English classrooms can move teaching beyond rote learning, enabling students to think critically, creatively, and independently. By fostering a stimulating and imaginative learning environment, teachers can enhance not only students' academic performance but also their overall creative potential. In conclusion, the Synectics model provides a practical and research-validated approach to nurturing creativity in language learning, offering valuable implications for teachers, curriculum designers, and educational policymakers aiming to cultivate innovative, confident, and proficient English learners in secondary education.

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AWARENESS OF CYBER CRIMES : A QUANTITATIVE STUDY

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ABSTRACT

The rapid digitalization of society has revolutionized communication, commerce, and governance but has simultaneously created new opportunities for cybercrime. This quantitative study investigates the prevalence, patterns, and societal impacts of cybercrime using survey data collected from 25 respondents across various demographic groups. Statistical analysis reveals that 68% of participants experienced at least one form of cybercrime, with phishing and identity theft being most common. Findings highlight the urgent need for cybersecurity education, stronger policy frameworks, and public awareness initiatives to mitigate the growing threat of cybercrime.

Keywords : Cyber Crime, Digital Society, Quantitative Study, Cyber Security, Online Safety, Data Analysis

INTRODUCTION

The emergence of the internet and information technologies has transformed modern society into a highly interconnected digital ecosystem. While this digital transformation enhances productivity and convenience, it also exposes individuals, organizations, and governments to cyber threats. Cybercrime has evolved from simple computer misuse to sophisticated attacks involving data breaches, ransomware, and financial fraud. As a result, cybercrime has become one of the most pressing challenges facing society in the 21st century. The present study seeks to quantify the extent and nature of cybercrime's impact on society.

REVIEW OF LITERATURE

Previous research identifies cybercrime as a multifaceted phenomenon encompassing financial fraud, hacking, cyberbullying, and identity theft (Wall, 2017). Studies by Brenner (2018) suggest that the rise of digital dependence correlates with increased cyber risks. Similarly, Holt and Bossler (2021) emphasize that users with low cybersecurity awareness are more likely to fall victim to online scams. The social consequences of cybercrime extend beyond economic loss. Yar and Steinmetz (2019) note that victims often experience psychological distress, reduced trust in digital services, and social isolation. Cybercrime also erodes public confidence in institutions, especially when governmental or corporate data breaches occur. Recent quantitative studies reveal a surge in global cyber incidents, with developing nations experiencing rapid growth due to limited cybersecurity infrastructure. Empirical data demonstrate that public education, strong encryption policies, and law enforcement collaboration are key determinants in mitigating cyber threats. However, gaps remain in understanding how

societal factors interact with individual cyber behavior—a gap this study aims to address.

MEANING OF CYBERCRIME

Cybercrime refers to illegal activities conducted through computers, networks, or digital devices. It involves crimes where the computer is either the target (e.g., hacking, virus attacks) or a tool used to commit offenses (e.g., online fraud, identity theft). Cybercrime differs from traditional crime due to its virtual nature, global reach, and anonymity, making detection and prosecution challenging. In a broader sense, cybercrime encompasses both cyber-dependent crimes (those that can only occur through digital technology) and cyber-enabled crimes (traditional crimes amplified by the internet). Examples include phishing, cyberstalking, ransomware attacks, and financial scams. These crimes threaten not only individuals but also the social and economic stability of nations.

STUDY AREA

The present study was conducted in Gadag City, located in the northern part of Karnataka, India. Gadag is known for its growing urban population, educational institutions, and increasing digital connectivity, making it a suitable area for studying cybercrime awareness. With the rapid adoption of smartphones, internet banking, and social media platforms, residents of Gadag are becoming more engaged in the digital ecosystem, which also exposes them to potential cyber threats. The city represents a balanced mix of students, professionals, and small business owners, offering a diverse sample for analyzing variations in cybercrime awareness. Studying Gadag provides valuable insights into how smaller urban centers in India are adapting to digital transformation while facing emerging cybersecurity challenges.

METHODOLOGY

The present study adopted a quantitative research design to assess the level of awareness about cybercrimes among residents of Gadag City. A structured questionnaire was developed and administered to a sample of 25 respondents, selected using a random sampling technique to ensure representation across different age groups, genders, and occupations. The questionnaire included close-ended questions focusing on knowledge of various types of cybercrimes, sources of awareness, and personal experiences with cyber incidents. The collected data were analyzed using percentage analysis and simple statistical tools such as mean to interpret the relationship between awareness and exposure to cyber risks. This methodological approach provided an objective and measurable understanding of how people in Gadag perceive and respond to the growing threat of cybercrime.

AWARENESS ABOUT CYBER CRIMES AMONG RESPONDENTS

To assess the general level of awareness about various forms of cybercrime, a structured questionnaire was administered to a sample of 25 respondents drawn from different age and educational backgrounds. Each participant was asked whether they were aware of specific types of cybercrimes commonly encountered in the digital environment. The responses were then quantified to determine the proportion of individuals familiar with each

type of cyber offense. The following table 1 presents the distribution of awareness across ten major categories of cybercrimes, illustrating which areas are most and least understood by the participants.

ANALYSIS

The data presented in Table 1 reveal that the overall awareness of cybercrimes among respondents is moderate, with an average awareness rate of 62%. A majority of participants demonstrated familiarity with phishing and email scams (80%), online shopping fraud (76%), and financial fraud (72%), suggesting that individuals are more conscious of crimes that have direct personal or financial consequences.

In contrast, awareness levels were notably lower for ransomware (44%), data theft (48%), and social media impersonation (52%), indicating that more complex or less visible forms of cybercrime are not as well understood by the general public. This uneven awareness pattern highlights the need for targeted educational campaigns and digital literacy programs to inform users about evolving cyber threats. Overall, the analysis suggests that while people recognize common online risks, a considerable knowledge gap remains in understanding technical or emerging cybercrimes—an area that warrants attention from policymakers, educators, and cybersecurity professionals.

INTERPRETATION

Out of a total possible 250 awareness responses (25 respondents × 10 items), 155 positive responses (62%) indicate that the general level of awareness about cybercrimes is moderate. The highest awareness is observed for phishing (80%) and online shopping fraud (76%), while ransomware (44%) and data theft (48%) show the lowest awareness levels. This suggests that while people are alert to common online scams, there is still limited understanding of more technical or emerging cyber threats.

CONCLUSION

The findings of this quantitative study demonstrate that while general awareness about cybercrimes exists among respondents, significant gaps remain in understanding the more sophisticated and emerging forms of digital threats. With an average awareness level of 62%, it is evident that most individuals recognize common cyber risks such as phishing and online fraud, yet remain less informed about ransomware, data breaches, and identity theft. This moderate level of awareness underscores the urgent need for continuous public education, cybersecurity training, and awareness campaigns to strengthen digital

Table 1:

Awareness about Cyber Crimes among Respondents (N = 25)

S. No.	Cyber Crime Awareness Item	No. of Respondents Aware	Percentage (%)
1	Phishing and Email Scams	20	80
2	Identity Theft	15	60
3	Cyberbullying and Online Harassment	14	56
4	Online Banking / Financial Fraud	18	72
5	Password Hacking / Account Breach	16	64
6	Malware and Virus Attacks	17	68
7	Social Media Impersonation	13	52
8	Data Privacy and Information Theft	12	48
9	Online Shopping Fraud	19	76
10	Ransomware and System Hijacking	11	44
-	Total (Awareness Count)	155	Average : 62%

resilience in society. Governments, educational institutions, and organizations must collaborate to promote responsible online behavior and ensure that citizens are equipped with the knowledge to protect themselves in an increasingly digital world. Strengthening cyber literacy is not only a preventive measure but also a critical step toward creating a safer and more secure digital society.

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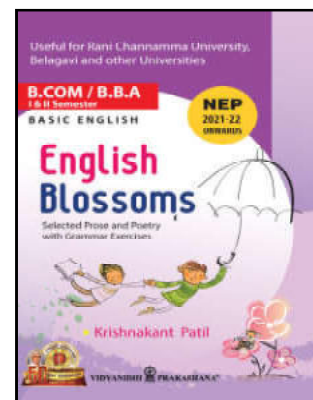

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A STUDY ON ACHIEVEMENT IN PHYSICS AND SCIENTIFIC ATTITUDE AMONG 8TH STANDARD STUDENTS OF MANDYA TALUK

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INTRODUCTION

Physics, as a fundamental branch of science, plays a crucial role in developing logical thinking, problem-solving abilities, and scientific temper among school students. At the upper primary level, the study of Physics helps learners understand basic natural phenomena, nurtures curiosity, and lays the foundation for future scientific learning. Achievement in Physics is therefore an important indicator of students' conceptual understanding, academic progress, and readiness for advanced science education. Alongside academic achievement, the development of a positive scientific attitude characterized by open-mindedness, critical inquiry, objectivity, and willingness to experiment is essential for fostering meaningful engagement with scientific concepts.

In the context of Mandya Taluk, educational outcomes in science have been influenced by variations in teaching practices, learning environments, and students' exposure to experiential learning. Understanding the relationship between students' achievement in Physics and their scientific attitude is vital for designing effective instructional strategies and improving science education at the middle-school level. The present study aims to investigate these aspects among 8th standard students of Mandya Taluk, examine their current levels of Physics achievement, and explore the extent to which scientific attitude contributes to their academic performance. The findings of this study are expected to provide useful insights for teachers, curriculum planners, and educational researchers.

PRESENT STATUS OF THE STUDY

Recent educational reports and classroom observations indicate that many 8th standard students in Mandya Taluk face challenges in understanding basic Physics concepts due to limited hands-on activities, traditional teaching methods, and insufficient exposure to inquiry-based learning. While schools are emphasizing science education, disparities in learning resources and

teaching competencies affect students' academic performance. Studies conducted in similar contexts highlight a growing need to examine the link between scientific attitude and achievement in Physics, as attitudes strongly influence interest, motivation, and learning outcomes. However, research specifically focusing on this relationship in Mandya Taluk remains limited, creating a gap this study aims to address.

NEED FOR THE STUDY

There is an increasing demand to strengthen science education at the middle-school level, as this stage forms the foundation for higher scientific learning. In Mandya Taluk, variations in students' achievement in Physics suggest gaps in conceptual understanding, learning experiences, and attitudes toward science. Developing a strong scientific attitude is essential for nurturing curiosity, critical thinking, and problem-solving skills. However, limited research exists on how scientific attitude influences Physics achievement among 8th standard students in this region. Therefore, this study is needed to identify existing learning trends, understand the relationship between attitude and achievement, and provide insights for improving science teaching practices.

CONCEPT OF ACHIEVEMENT

Academic achievement refers to the extent to which students have mastered the prescribed curriculum and developed the required knowledge, skills, and competencies in various subjects. It is usually measured through examinations, tests, assignments, and classroom performance. At this stage, achievement reflects not only cognitive abilities but also students' study habits, motivation, attitudes, and learning environments. Secondary school academic achievement is crucial because it influences students' future educational choices, career pathways, and overall academic growth. It also serves as an indicator of the effectiveness of teaching practices, school resources, and instructional strategies.

TEACHING OF SCIENCE AND SCIENTIFIC ATTITUDE

Teaching of science at the secondary school level aims to develop students' understanding of fundamental scientific concepts, principles, and processes through observation, experimentation, and inquiry-based learning. It emphasizes learning by doing, promoting critical thinking, problem-solving, and application of knowledge to real-life situations. Alongside content learning, science teaching plays a vital role in fostering a scientific attitude characterized by curiosity, open-mindedness, objectivity, rational thinking, and a willingness to verify facts. Developing this attitude helps students question assumptions, evaluate evidence, and adopt a logical approach to learning. Effective science teaching thus prepares learners for higher studies and informed decision-making in daily life.

OBJECTIVES OF THE STUDY

1. To study the scientific attitude of students of Standard 8th of Mandya Taluk.
2. To study the achievement in Physics of students of Standard 8th of Mandya Taluk.
3. To study whether there is any significant relationship between scientific attitude and achievement in Physics of students of Standard 8th of Mandya Taluk.
4. To study whether there is any significant relationship between scientific attitude and achievement in Physics among Kannada medium students of Standard 8th of Mandya Taluk.
5. To study whether there is any significant relationship between scientific attitude and achievement in Physics among English medium students of Standard 8th of Mandya Taluk.

DISTRIBUTION OF MEANS OF SCORES OF ACHIEVEMENT IN PHYSICS OF STUDENTS OF STANDARD 8TH OF MANDYA TALUK

Very High : In the Present study achievement in Physics has been considered to be very high, if the means of scores of student fall between 12-14.5.

High : In the present study achievement in Physics has been considered to be high if the means of scores of student fall between 9-12.

Moderate : In the Present study achievement in Physics has been considered moderate if the means of scores of students fall between 5-9.

Low : In the present study achievement in Physics has been considered low if the means of scores of students fall between 3-5.

Very low : In the present study achievement in Physics has been considered very low if the means of scores of student fall between 0-3.

HYPOTHESES OF THE STUDY

- H1 :** There is a significant relationship between the Mean's scores of scientific attitude and achievement in Physics of students of Standard 8th of Mandya Taluk.
- H2 :** There is a significant relationship between the Mean's scores of scientific attitude and achievement in Physics among Kannada medium students of Standard 8th of Mandya Taluk.
- H3 :** There is a significant relationship between the Mean's scores of scientific attitude and achievement in Physics among English medium students of Standard 8th of Mandya Taluk.

METHODOLOGY OF THE STUDY

The present study is a descriptive survey study, where a survey was undertaken to study scientific attitude and academic achievement of the students of Standard 8th of Mandya Taluk. The investigator collected data from the students of Standard 8th of Mandya Taluk.

VARIABLES IN THE STUDY

1. Scientific Attitude
2. Achievement in Physics

SAMPLE OF THE STUDY

The investigator employed stratified random sampling technique for the selection of sample from the population. The Sample of the study consisted of 300 (three hundred) students of different high scores of Mandya Taluk.

TOOLS USED IN THE STUDY

For the purpose of the measuring the variables selected for the study, the following tools were used by the investigator.

1. Science Attitude scale standardized by Mrs. Avinash Grewal. The present study was validated by the investigator in a Kannada version.
2. To study the Achievement in Physics of the students, marks of the 1st - Tri Semester Physics was taken as the measure of the Achievement of the students.

STATISTICAL TECHNIQUES USED

1. **Descriptive Statistics :** Descriptive statistics namely Mean, Median and Standard Deviation were used.
2. **Inferential Statistics :** Spearman's Product moment co-efficient correlation "r" was employed.

ANALYSIS AND INTERPRETATION OF THE DATA

Analysis and Interpretation of objective One : The first objective was to study the extent of scientific attitude of students of Standard 8th of Mandya Taluk. In order to collect data related to the different variables. The standardized test on "Scientific Attitude Scale" was administered by the investigator to the selected sample of the students of Standard 8th of Mandya Taluk.

The data was collected by administering test on scientific Attitude by the investigator. The objective was analyzed using descriptive statistics namely Mean, Median, Standard Deviation and Skewness.

The scores obtained are classified in Frequency Distribution table, which is given in the below table.

Table-1: Frequency Distribution of the scores made by the students of Standard 8th of the test on scientific attitude.

Class Interval	Mid Point	Frequency	Smoothed Frequency
65-69	67	4	5
60-64	62	11	21.6
55-59	57	50	42
50-54	52	65	69
45-49	47	92	70
40-44	42	52	54.6
35-39	37	20	25.6
30-34	32	5	25.6
25-29	27	1	0.3
		N=300	

Mean, Standard Deviation and Skewness were calculated for the distribution of the scores of the test on scientific attitude. The result is given in the below table.

Table-2 : Number (N), Mean(M), Median (Mdn), Standard Deviation (SD) and Skewness (Sk) of the distribution of scores on scientific attitude.

Variable	M	Max.Score	M	Mdn	SD	Sk
Test on Scientific Attitude	48.72	65	48.72	48.41	6.99	0.133

INTERPRETATION

From the above, it is observed that the Mean value 48.72 and Median value 48.41 are close to each other. The Skewness was only 0.133. This degree of positive, Skewness shows that the distribution of scores more or less closely approaches to the normal distribution. Therefore it can be concluded that scientific attitude scores of pupils of Standard 8th of Mandya Taluk closely approaches the normal distribution.

ANALYSIS AND INTERPRETATION OF OBJECTIVE TWO

The second objective was to study the achievement in Physics of the students of Standard 8th of Mandya Taluk. In order to collect data related to the different variables, marks of 1st Tri Semester was taken by the investigator, to the selected sample of the students of Standard 8th of Mandya Taluk. The objective was analyzed using Descriptive statistics namely Mean and Standard deviation.

Table-3: Mean(M) and Standard Deviation (SD) of scores on the achievement in Physics.

Variable	N	Max.Score	M	SD
Achievement in Physics	300	14.5	7.34	3.58

INTERPRETATION

From the above table, it is observed that, the Mean's scores of Achievement in physics of the students was formed to be 7.34. Therefore it can be concluded that, the Achievement in Physics of the student was moderate based on the norms fixed by the investigator.

ANALYSIS AND INTERPRETATION OF OBJECTIVE THREE

The third objective was to study whether there is any significant relationship between scientific attitude and achievement in Physics of students of Standard 8th of Mandya Taluk.

HYPOTHESIS ONE

H1 : There is a significant relationship between the Mean's scores of scientific attitude and achievement in Physics of students of Standard 8th of Mandya Taluk.

In order to test hypothesis was translated null form as

H0 : There is no significant relationship between the Mean's scores of scientific attitude and achievement in Physics of students of Standard 8th of Mandya Taluk.

Table - 4 : Showing the correlation Co-efficient between the Mean's scores of Scientific Attitude and Achievement in Physics of students of Standard 8th of Mandya Taluk.

Variable	N	'r' value	Result
Scientific Attitude	300	14.5	There is a Significant difference at 0.01 level
Achievement in Physics	300		

INTERPRETATION

From the above table, it is observed that 'r' value 0.9 is significant at 0.01 level. This shows that there is a positive

relationship between the scores of Scientific Attitude and Achievement in Physics of the students of Standard 8th and Achievement in Physics of the students of Standard 8th of Mandya Taluk. Hence the null hypothesis is rejected.

The value of 'r' is 0.9 which indicates a high positive relationship between the two variables. As the degree of Scientific Attitude increases the degree of Achievement in physics also increases. As the degree of scientific Attitude decreases the degree of Achievement in Physics also decreases.

The analysis of objective three shows that, there is a significant relationship even the Mean's scores of Scientific Attitude and Achievement in Physics of the students of Standard 8th of Mandya Taluk. Therefore it can be concluded the variables Scientific Attitude and Achievement in Physics are positively related

ANALYSIS AND INTERPRETATION OF OBJECTIVE FOUR

The fourth objective was to study whether there is any significant relationship between scientific attitude and achievement in Physics among Kannada medium students of Standard 8th of Mandya Taluk.

HYPOTHESIS TWO

H2 : There is a significant relationship between the Mean's scores of scientific attitude and achievement in Physics among Kannada medium students of Standard 8th of Mandya Taluk.

In order to test this hypothesis, it was translated into null forms,

H0 : There is no significant relationship between the Mean's scores of scientific attitude and achievement in Physics among Kannada medium students of Standard 8th of Mandya Taluk.

Table-5

Showing the Correlation Co-efficient between the Mean's scores of Scientific Attitude and Achievement in Physics among Kannada medium students of Standard 8th of Mandya Taluk.

Medium of Instructions	Variables	Gender	N	'r' value	Significant Level
Kannada	Scientific Attitude	Boys	75	0.9	Scientific at 0.01 level
	Achievement in Physics	Girls	75		
	Total		150		

INTERPRETATION

From the above table, it is observed that 'r' value 0.9 is significant at 0.01 level. In the light of this results it would be interrelated that, there is a high positive relationship between the scores of Scientific Attitude and Achievement

in Physics among Kannada medium students of Standard 8th of Mandya Taluk.

Therefore the null hypothesis was rejected, and the alternative hypothesis titled, there is a significant relationship between the Mean's scores of Scientific Attitude and Achievement in Physics among students of Standard 8th of Mandya Taluk was accepted.

In the light of the above analysis it can be concluded that, there is a high positive correlation between Scientific Attitude and Achievement in Physics among Kannada medium students of Standard 8th of Mandya taluk.

ANALYSIS AND INTERPRETATION OF OBJECTIVE FIVE

The fifth objective was to study whether there is any significant relationship between scientific attitude and achievement in Physics among English medium students of Standard 8th of Mandya Taluk.

HYPOTHESIS THREE

H3 : There is a significant relationship between the Mean's scores of scientific attitude and achievement in Physics among English medium students of Standard 8th of Mandya Taluk.

In order to test this hypothesis, it was translated into null form as.

H0 : There is no significant relationship between the Mean's scores of scientific attitude and achievement in Physics among English medium students of Standard 8th of Mandya Taluk.

Table - 6

Showing the Correlation Co-efficient between the Mean's scores of Scientific Attitude and Achievement in Physics among English Medium students of Standard 8th of Mandya Taluk.

Medium of Instructions	Variables	Gender	N	'r' value	Significant Level
English	Scientific Attitude	Boys	75	0.91	Scientific at 0.01 level
	Achievement in Physics	Girls	75		
	Total		150		

INTERPRETATION

From the above table, it is observed that 'r' value 0.91 is significant at 0.01 level. In the light of this result it would be interpreted that, there is a high positive and significant relationship between the Mean's scores of Scientific Attitude and Achievement in Physics among English Medium students of Standard 8th of Mandya Taluk.

Therefore, the null hypothesis was rejected and the alternative hypothesis there is a significant relationship between the Mean's scores of Scientific Attitude and

Achievement in Physics among English Medium students of Standard 8th of Mandya Taluk.

In the light of the above analysis it can be concluded that there is a high positive correlation between Scientific Attitude and Achievement in Physics among English Medium students of 8th standard of Mandya Taluk.

DISCUSSIONS OF THE RESULTS

The Caption is developed to a quantities discussion of the result related to the objectives of the study. The intention of the investigator was to study the relationship between Scientific Attitude and Achievement in Physics.

The first objective was to study the Scientific Attitude of the students of Standard 8th of Mandya Taluk. From the analysis and Interpretation of data obtained, it was found that scientific Attitude of the students of Standard 8th is found to be moderate since the Mean was 48.72 (max score-65).

The second objective was to study the Achievement in Physics of the students of Standard 8th of Mandya Taluk. From the analysis of interpretation of the data obtained it was found that Achievement in Physics of the students of Standard 8th is found to be Moderate. Since the Mean's was 7.34 (max score-14.5). In the present study, the students did not score well in the 1st Tri Semester Examination it may be because of these lack of instructional method, lack of concentration, lack of motivation on the parts of students, physical ill health etc.

The Third objective was the study the relationship between Scientific Attitude and Achievement in Physics of the students of Standard 8th of Mandya Taluk. A test was administered by the investigator. The scores of the 1st Tri Semester Examination marks of Physics was collected and analyzed. The result reveals that, there is a high positive relationship between the scientific attitude and achievement in Physics.

The findings of the rest of the objectives validate the fact, that has been proved under objective three. The interpretation of the objective three holds good for the findings for the rest of the objectives.

MAJOR FINDINGS OF THE STUDY

1. The Scientific Attitude of the students of Standard 8th of Mandya taluk found to be 'Moderate'.
2. The achievement in Physics of the students of Standard 8th of Mandya taluk found to be 'Moderate'.
3. There is a high positive relationship between scientific attitude and achievement in Physics of the students of Standard 8th of Mandya Taluk.

4. There is a high positive relationship between the scientific attitude and achievement in Physics among Kannada medium students of Standard 8th of Mandya taluk.
5. There is a high positive relationship between the scientific attitude and achievement in Physics among English medium students of Standard 8th of Mandya taluk.

EDUCATIONAL IMPLICATIONS OF THE STUDY

- The result of the research is helpful for a teacher to know the attitude of students towards science and compare with achievement and modify the methods of teaching for better attitude towards science subject.
- Helps the educationist to plan the curriculum in such a way that it attracts the minds of students, towards science subjects.
- Gives further scope for the researches in the field of science education and to design more standardised tools for the research.
- The positive correlation between the two variables will make the teachers aware that while teaching. Science they need to develop Scientific Attitude also.
- It also helps them to conduct the components of Scientific Attitude need to be more strengthened in order to promote achievement in Science.

SUGGESTIONS FOR FURTHER RESEARCH

- Studies can be undertaken to find the scientific attitude of Higher Secondary Schools.
- The study can be extended to the students at different levels such Primary, Secondary and Higher education.
- The same study can be replicated by taking a large sample.
- A comparative study on the relationship between scientific attitude of teachers and students can be carried out.
- Special efforts should be made through research, to develop scientific attitude among the students through specially designed curriculum / instructional material.
- A study on the different ways of measuring scientific attitude shall be undertaken.
- A study on the causes for low scientific attitude shall be undertaken.
- Research on input strategies to increase the extent of scientific attitude will help in this regard.

LIMITATIONS OF THE STUDY

1. Sample selected for the study will be limited to a particular standard i.e. 8th Standard.
2. The study related only to Mandya Taluk.
3. The achievement of scores only in Physics has been considered for the studies.

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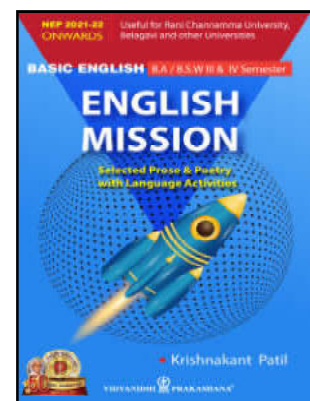

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EFFICACY OF SYNECTICS TEACHING MODELS IN FOSTERING DESCRIPTIVE STYLE IN THE ENGLISH LANGUAGE AMONG SECONDARY SCHOOL STUDENTS

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ABSTRACT

Creativity is one of the most valued abilities in all societies, playing a crucial role in fostering critical and divergent thinking among learners. The Synectics model of teaching is an innovative instructional approach that has significant potential for enhancing students' creativity. It engages learners in various metaphorical activities, which serve as powerful tools to stimulate imaginative thinking and problem-solving. Synectics provides students with opportunities to think beyond conventional boundaries and express their ideas more creatively. Developed by Gordon and his associates, this sophisticated technique has been effectively employed to generate solutions to complex and challenging problems. The present study aimed to examine the efficacy of the Synectics teaching model in fostering descriptive style in the English language among secondary school students. An experimental design was employed, comprising an experimental group and a control group. The findings revealed that the performance of students in the experimental group on the test of descriptive style was significantly higher than that of the control group. These results highlight the efficacy of the Synectics teaching model as a powerful instructional strategy for promoting creativity and improving descriptive writing skills in English among secondary school students.

Keywords : Synectics Teaching Model, Descriptive Style, English Language, Creativity,

CONCEPT OF SYNECTICS AND CREATIVITY

Invention and creativity are essential for the progress of society and for making life more meaningful. Therefore, there is a growing need to orient students toward creative thinking. Work on creativity, particularly on nurturing and promoting creative thinking in classroom settings, is still at a nascent stage in India. Consequently, much remains to be explored and accomplished in this emerging field. Creativity is defined as the ability to bring something new into existence. It is distinguished by its novelty, originality, and inventiveness. Guilford (1956), in his famous Structure of Intellect (S.I.) model, described creativity as divergent thinking-not a unitary trait but a collection of different abilities and characteristics. Similarly, Passi (1972) viewed creativity as a multidimensional attribute that is differentially distributed among individuals. It includes key factors such as problem sensitivity, fluency, flexibility, originality, acquisitiveness, and persistence.

The school environment plays a decisive role in unfolding the creative talents of learners. Schools provide a platform where ample opportunities should be created to promote creative thinking as well as achievement in different fields of life. However, most schools today focus primarily on preparing students to score high in examinations through rote learning and memorization.

To enhance the creativity of school children, it is essential to adopt appropriate methods of teaching that provide students with opportunities to think critically and divergently. Such methods enable the development of both understanding and creative thinking abilities. The Synectics model of teaching is one such approach with significant potential for enhancing students' creativity. It engages learners in various metaphorical activities, which are key to stimulating creative thinking. Through Synectics, students are encouraged to think critically and divergently, moving beyond the limitations of traditional, convergent teaching methods. Thus, existing methods that overemphasize convergent thinking should be judiciously supplemented by methods that foster divergent thinking.

LANGUAGE CREATIVITY

Language creativity primarily involves four dimensions: fluency, flexibility, originality, and elaboration.

- Fluency refers to the rapid flow of ideas and the tendency to change directions and modify information.
- Flexibility is the ability to break away from existing patterns of thought and shift toward new patterns, allowing ideas to move in fresh directions.
- Originality indicates the uncommon or rare; it reflects the newness and uniqueness of ideas.

- Elaboration refers to the ability to expand on a theme or creative insight, combining ideas and extending thoughts to produce richer expressions.

FACTORS OF LANGUAGE CREATIVITY

Language creativity can be measured through five key factors: Story Construction, Dialogue Writing, Poetic Diction, Descriptive Style, and Vocabulary Test.

For the present study, the investigator has focused specifically on Descriptive Style.

" **Descriptive Style** : This subset is based on Guilford's (1952) controlled association. It involves describing a given topic based on imagination, observation, emotional experience, and comparison. Sometimes, situations are described with reference to analogous situations, allowing students to express their ideas in original and vivid ways.

The Synectics model of teaching in language classrooms helps students foster creativity by encouraging free thinking and imaginative expression. It enhances both their language achievement and language creativity by creating a space for open-ended responses and divergent thinking. Language creativity inherently allows for freedom of responses, both qualitatively and quantitatively, making it suitable for measuring different dimensions of divergent thinking. In the Indian context, teaching English is often described as "the world's largest democratic enterprise of its kind" (N. Krishnaswamy and T. Shriraman, 1994). One of the greatest challenges in this context is the diversity of learners, who come from a wide spectrum of socio-economic, linguistic, and cultural backgrounds, and display varying levels of competence in English.

SYNECTICS AS A CREATIVE PROCESS

Synectics is a creative problem-solving process designed to increase the probability of successful solutions. It aims to improve group creativity by replacing negative elements of human group dynamics with positive, collaborative tools that help teams focus their abilities on the challenges at hand. By using analogies and metaphors, Synectics stimulates non-routine, original thinking, making it a powerful instructional tool for developing creativity in educational settings.

REVIEW OF RELATED LITERATURE

Many studies have been conducted across the world to explore different methods for developing creativity through the Synectics model of teaching. Rahman & Khan (2023) conducted a recent study in Bangladesh and found that students taught through the Synectics method

performed better in vocabulary acquisition, metaphoric writing, and creative expression. The model also helped reduce students' anxiety toward English learning by making abstract concepts more relatable through analogies. Fitri et al. (2022) demonstrated that using digital tools to create and narrate stories helped EFL students improve their vocabulary, coherence, and imaginative expression in writing. Mishra & Panda (2021), in a comparative study involving rural and urban students, found that the use of creative dramatics, storytelling, and visual metaphors in English classrooms significantly improved creativity scores. This effect was particularly strong among rural students who had limited exposure to traditional enrichment programs. Naik & Mishra (2021) examined secondary schools in Odisha and explored the impact of Synectics on divergent thinking and creative expression. Their findings confirmed that the method enabled students to think beyond conventional ideas and express themselves more freely in both speech and writing. Reddy (2021) emphasized that rural students can develop creative competence in English if they are exposed to metaphor-based models like Synectics in a supportive classroom environment. Al-Mahrooqi & Denman (2020) focused on Omani secondary school students and found that structured creative writing tasks involving metaphor, sensory detail, and personification helped improve both language proficiency and creativity. Their study highlighted that creativity can be systematically developed through well-designed curricula. Mayer et al. (2020) suggested that emotionally intelligent learners tend to demonstrate better creative output in writing and speaking tasks due to their resilience and openness to novel ideas. Murthy & Ramesh (2020) conducted a quasi-experimental study in Karnataka and concluded that Synectics helped rural students enhance fluency, elaboration, and emotional expression in English composition. Walia & Wadhwa (2020) highlighted the impact of project-based learning and integrated creativity workshops on students' ability to generate original ideas in English composition and poetry writing. The authors concluded that exposure to creative methods is directly proportional to enhanced language creativity. William & Gordon et al. (1960) It uses analogy, metaphor, and deliberate disruption of habitual thinking to stimulate non-routine idea generation and to overcome mental blocks in groups and individuals. Gordon's formulation emphasizes structured exercises that encourage participants to make unusual associations, thereby increasing the probability of original solutions. Guilford (1956) described divergent thinking as a set of abilities—fluency, flexibility, originality, and elaboration—that together underpin creative

performance. These dimensions are widely used as the operational elements of creativity assessments in educational research. Overall, the above studies indicate that the Synectics model is an effective approach for enhancing language creativity. Its success has led to the development of more classroom activities that encourage students to produce new ideas, original combinations, and creative expressions in language learning contexts.

RATIONALE OF THE STUDY

1. One of the major problems in the teaching of Indian languages is that the emphasis is placed on providing information through language rather than on developing actual language ability. There is a pressing need to foster language creativity among students to enhance their expressive and critical thinking skills.
2. In India, greater prominence has traditionally been given to vernacular languages and their development. As a result, the development of English language creativity has been somewhat neglected. Therefore, it is essential to focus on nurturing creativity in the English language, particularly with reference to descriptive style, to help learners develop richer linguistic and expressive abilities.
3. In short, creative language ability, especially in relation to descriptive style in the English language, is highly desirable for effective language learning. However, this aspect has not been adequately emphasized in English language teaching among Indian students, highlighting the need for focused pedagogical interventions such as the Synectics Teaching Model.

LIMITATIONS OF THE STUDY

The present study has the following limitations :

1. The study was confined to English medium 9th standard high school students located in Cuddalore only.
2. The study involved the conventional method of teaching for the purpose of observation, control, comparison, and assessment of the development of creativity in English.
3. For the experiment, only one factor of language creativity, i.e., Descriptive Style, was taken into consideration.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows :

1. To find out the significant difference between pre-test and post-test of English Language creativity test on Descriptive Style and its dimensions (fluency, flexibility, originality, and elaboration) of students of experimental group.
2. To find out the significant difference between pre-test and post-test of English Language creativity test on Descriptive Style and its dimensions (fluency, flexibility, originality, and elaboration) of Control Group.

HYPOTHESES

In pursuance of the above-stated objectives, the following hypotheses were formulated:

1. There is no significance difference between pre and post-test performance of descriptive style and its dimensions i.e. fluency, flexibility, originality and elaboration of students in experiment group.
2. There is no significance difference between pre-test and post-test performance of descriptive style and its dimensions i.e. fluency, flexibility, originality and elaboration of students in control group.

DESIGN OF THE STUDY

In the present study, the experimental method was used to collect data. A pre-test and post-test matched group experimental design was adopted. The study was conducted on a sample of 200 students, selected through purposive sampling. Raven's Progressive Matrices was used for testing and matching the intelligence levels of students. Both the experimental and control groups were selected on the basis of their intelligence test scores to ensure equivalence between the groups. The experimental group was taught using the Synectics model of teaching, while the control group received instruction through the traditional method. The efficacy of the Synectics model in enhancing language creativity was determined by administering a creativity test to both groups of students. The creativity test used for assessing language creativity in English was constructed and standardized by the investigator following established test development procedures.

TOOLS OF THE STUDY

- a) **Treatment Tools :** The Synectics model-based lesson plans in the English language were used to impart instruction to the students.
- b) **Measuring Tools:** Raven's Progressive Matrices (RPM) and The English Language Creativity Test,

prepared and standardized by the investigator were used.

STATISTICAL TECHNIQUES USED

The Mean, Standard Deviation, and 't' test were used to analyze the data collected from the groups.

Table 1: Results of Paired t-test Between Pre and Post-test Performance of Descriptive Style and Its Dimensions i.e. Fluency, Flexibility, Originality and Elaboration of Students in Experiment Group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Descriptive Style	Pre-test	10.55	1.07	-8.33	1.58	-39.1879	<0.05	S
	Post-test	18.87	1.61					
Fluency	Pre-test	3.04	0.82	-1.80	0.65	-20.5439	<0.05	s
	Post-test	4.84	0.86					
Flexibility	Pre-test	2.16	0.86	-2.13	1.04	-15.2083	<0.05	s
	Post-test	4.29	0.88					
Originality	Pre-test	2.38	0.71	-2.29	1.20	-14.1961	<0.05	s
	Post-test	4.67	0.96					
Elaboration	Pre-test	2.96	0.92	-2.11	0.31	-49.7143	<0.05	s
	Post-test	5.07	1.03					

From the results of the above table, the following observations can be made :

1. A significant difference was found between the pre-test and post-test performance in overall descriptive style creativity among students in Experiment Group I ($t = -39.1879$, $p < 0.05$). Hence, the null hypothesis is rejected, indicating that post-test performance was significantly higher than pre-test performance.
2. In the fluency dimension, post-test scores were significantly higher than pre-test scores ($t = -20.5439$, $p < 0.05$).

DATA ANALYSIS AND INTERPRETATIONS

To determine the effect of the Synectics Model of Teaching, the paired 't' test was applied, as shown in the following table.

3. In the flexibility dimension, a significant improvement was observed from pre-test to post-test ($t = -15.2083$, $p < 0.05$).
4. In the originality dimension, students showed significantly higher scores in the post-test compared to the pre-test ($t = -14.1961$, $p < 0.05$).
5. In the elaboration dimension, post-test scores were significantly higher than pre-test scores ($t = -49.7143$, $p < 0.05$).

From the results of the above table, the following observations were made :

Table 2 : Results of Paired t-test Between Pre and Post-test Performance of Descriptive Style and Its Dimensions i.e. Fluency, Flexibility, Originality and Elaboration of Students in Control Group.

Variable	Score	Mean	Std. Dv.	Mean Diff.	SD. Diff.	t. Value	P. Value	Signi.
Descriptive Style	Pre-test	10.29	1.93	-6.64	2.76	-17.8456	<0.05	S
	Post-test	16.93	3.04					
Fluency	Pre-test	2.95	0.73	-1.49	0.69	-16.0132	<0.05	S
	Post-test	4.44	0.86					
Flexibility	Pre-test	2.24	0.86	-1.65	1.25	-9.8128	<0.05	S
	Post-test	3.89	1.01					
Originality	Pre-test	2.24	0.84	-1.93	1.15	-12.4032	<0.05	S
	Post-test	4.16	1.20					
Elaboration	Pre-test	2.87	0.92	-1.56	0.98	-11.8712	<0.05	S
	Post-test	4.44	1.17					

1. A significant difference was found between the pre-test and post-test performance in overall descriptive style creativity among students in Control Group I (t

$= -17.8456$, $p < 0.05$). Hence, the null hypothesis is rejected, indicating that post-test performance was significantly higher than pre-test performance.

2. In the fluency dimension, post-test scores were significantly higher than pre-test scores ($t = -16.0132, p < 0.05$).
3. In the flexibility dimension, a significant improvement was observed from pre-test to post-test ($t = -9.8128, p < 0.05$).
4. In the originality dimension, post-test scores were significantly higher than pre-test scores ($t = -12.4032, p < 0.05$).
5. In the elaboration dimension, students demonstrated significantly higher scores in the post-test compared to the pre-test ($t = -11.8712, p < 0.05$).

FINDINGS

The main findings of the study are as follows:

1. The post-test performance in creativity (descriptive style) of students is higher compared to their pre-test performance in the experimental group.
2. The post-test performance in fluency (descriptive style) of students is higher compared to their pre-test performance in the experimental group.
3. The post-test performance in flexibility (descriptive style) of students is higher compared to their pre-test performance in the experimental group.
4. The post-test performance in originality (descriptive style) of students is higher compared to their pre-test performance in the experimental group.
5. The post-test performance in elaboration (descriptive style) of students is higher compared to their pre-test performance in the experimental group.
6. The post-test performance in creativity (descriptive style) of students is higher compared to their pre-test performance in the control group.
7. The post-test performance in fluency (descriptive style) of students is higher compared to their pre-test performance in the control group.
8. The post-test performance in flexibility (descriptive style) of students is higher compared to their pre-test performance in the control group.
9. The post-test performance in originality (descriptive style) of students is higher compared to their pre-test performance in the control group.
10. The post-test performance in elaboration (descriptive style) of students is higher compared to their pre-test performance in the control group.

From the above data analysis and interpretation, the overall generalized findings of the present study are as

follows:

- The post-test performance in creativity (descriptive style) of students is higher compared to their pre-test performance in both the experimental group and the control group.
- The post-test performance in fluency (descriptive style) of students is higher compared to their pre-test performance in both the experimental and control groups.
- The post-test performance in flexibility (descriptive style) of students is higher compared to their pre-test performance in both the experimental and control groups.
- The post-test performance in originality (descriptive style) of students is higher compared to their pre-test performance in both the experimental and control groups.
- The post-test performance in elaboration (descriptive style) of students is higher compared to their pre-test performance in both the experimental and control groups.

EDUCATIONAL IMPLICATIONS

The present study has the following implications:

1. The findings of the study indicate that language creativity, particularly with reference to descriptive style in the English language, is significantly enhanced when students are exposed to the Synectics model of teaching. Along with descriptive language skills, students' general creativity is also positively developed.
2. Teachers should play a facilitative role in promoting independent and critical thinking among students. This can be achieved by providing rich learning experiences, organizing enrichment programmes, and encouraging activities that stimulate divergent thinking and imagination.
3. For India to strengthen its position in the global arena, it is essential to develop English language competence among students. This can be achieved by introducing a variety of classroom activities that emphasize reading, writing, and speaking in English, thereby fostering both linguistic proficiency and creative expression.
4. The Synectics model of teaching can be effectively integrated into the English curriculum to make language learning more engaging, student-centered, and creativity-oriented. It encourages students to

think metaphorically and divergently, moving beyond rote learning.

5. Teacher education programmes should include training in innovative teaching models such as Synectics, enabling future teachers to adopt modern pedagogical strategies for developing language creativity and critical thinking skills.
6. Educational planners and curriculum designers should consider incorporating structured creative activities into the English language syllabus, particularly at the secondary school level, to nurture descriptive writing skills and creative language use systematically.

CONCLUSION

The present study on the efficacy of Synectics teaching models in fostering descriptive style in the English language among secondary school students demonstrates that the use of Synectics as a teaching strategy significantly enhances language creativity. The findings reveal that students exposed to the Synectics model exhibited higher performance in all dimensions of descriptive writing—fluency, flexibility, originality, and elaboration—compared to their performance before the intervention and in the control group. The study confirms that the Synectics model encourages critical and divergent thinking, enabling students to move beyond rote learning and mechanical application of language rules. It provides opportunities for imaginative and metaphorical thinking, which in turn fosters greater linguistic expression and creativity in English.

Furthermore, the study highlights the importance of integrating creative teaching methodologies in secondary school classrooms to promote not only descriptive writing skills but also overall cognitive and creative development. Teachers, curriculum planners, and educational institutions can benefit from adopting the Synectics approach to enhance student-centered learning, making language instruction more engaging, effective, and creativity-oriented. In summary, the Synectics teaching model proves to be a valuable pedagogical tool for developing descriptive style in English and promoting holistic creativity among secondary school students. Its adoption can contribute to nurturing innovative, independent, and critical thinkers capable of expressing themselves effectively in the English language.

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SOCIO-ECONOMIC AND WORK CONDITIONS OF SAFAI KARMACHARIS

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ABSTRACT

Sanitation workers, known as Safai Karmacharis, play a crucial role in maintaining public hygiene, environmental health, and urban development in India. This study explores their socio economic condition, focusing on Gadag City, Karnataka. Using a sample of 20 Safai Karmacharis, data were collected through structured interviews and analyzed quantitatively. Findings indicate that despite their essential service, Safai Karmacharis face challenges such as low income, lack of recognition, and inadequate safety measures. The study concludes that improving working conditions, providing social security, and recognizing their role can significantly enhance national productivity and health outcomes.

Keywords : *Safai Karmachari, Sanitation Workers, National Development, Public Health, Gadag City, Waste Management, Urban Sanitation, Social Welfare*

INTRODUCTION

Cleanliness and sanitation are essential for the overall development of a nation. Safai Karmacharis form the backbone of the sanitation system, ensuring a healthy environment through waste collection, disposal, and maintenance of cleanliness in public spaces. Their work directly influences environmental sustainability, public health, and community welfare. Despite their invaluable service, these workers often remain underpaid, socially marginalized, and exposed to occupational hazards. This study examines the multifaceted role of Safai Karmacharis in national development, emphasizing how their contributions underpin health, hygiene, and sustainable urban living, while also exploring the socio-economic challenges they face.

REVIEW OF LITERATURE

According to Sharma (2018), sanitation workers are the foundation of a clean and healthy society, yet they remain among the most underprivileged groups in India. The Swachh Bharat Mission (SBM) launched in 2014 significantly enhanced awareness about cleanliness, but the living and working conditions of Safai Karmacharis have not improved proportionally (Kumar & Patel, 2020). Studies by Singh and Thomas (2019) reveal that Safai Karmacharis contribute not only to waste disposal but also to disease prevention, which directly affects national productivity. However, lack of protective gear and irregular employment are major barriers to their efficiency and well-being. Recent research (Desai, 2022) highlights that proper recognition, training, and inclusion of sanitation workers in decision-making can boost their morale and performance. The literature collectively emphasizes that strengthening this

workforce is critical to sustainable urban development and national growth.

MEANING OF SAFAI KARMACHARI

Safai Karmachari refers to individuals employed in sanitation services-responsible for cleaning streets, managing waste, and maintaining hygiene in public areas. They ensure the smooth functioning of civic life by preventing the spread of diseases and promoting environmental cleanliness.

Beyond physical labor, Safai Karmacharis contribute to the moral and social fabric of a nation, symbolizing dignity of labor and social responsibility. Their role is directly linked to the success of initiatives like Swachh Bharat Abhiyan and the Sustainable Development Goals (SDG 6: Clean Water and Sanitation).

METHODOLOGY

This study follows a descriptive quantitative research design. Data were collected from 20 Safai Karmacharis working under the Gadag City Municipal Council. A structured questionnaire was used to collect information regarding their working conditions, income level, safety awareness, and perception of their role in national development. Data were analyzed using percentage analysis and tabulation methods. The approach aimed to objectively assess the contribution and challenges of Safai Karmacharis in maintaining public sanitation and development.

STUDY AREA

Gadag City, located in northern Karnataka, serves as the study area due to its growing urbanization and

expanding municipal infrastructure. The city has an active workforce of sanitation workers under the Gadag Betageri Municipal Council who are responsible for solid waste collection and street cleaning. The population's increasing dependence on sanitation services makes Gadag an ideal area to study the importance and conditions of Safai Karmacharis. The findings from this city provide a micro-level understanding of sanitation work in smaller urban centers of India.

Table 1:

Socio-Economic and Work Conditions of Safai Karmacharis

S. No.	Aspect	Category/ Indicator	No. of Respondents Aware	Percentage (%)
1	Gender	Male (12) / Female (8)	12/8	60 / 40
2	Education Level	Below 10th Standard	14	70
3	Monthly Income	Below Rs. 10,000	15	75
4	Use of Safety Equipment	Regular	6	30
5	Job Satisfaction	Satisfied	9	45

ANALYSIS

The table indicates that most Safai Karmacharis in Gadag City belong to economically weaker sections, with 75% earning below ₹10,000 per month and 70% having education below 10th standard. Only 30% use safety equipment regularly, showing inadequate safety practices. Despite these challenges, 45% reported job satisfaction, reflecting their commitment to public service. The data suggest that socio-economic limitations hinder their well-being, though they continue to contribute significantly to public hygiene and development.

INTERPRETATION

The analysis reveals that Safai Karmacharis play a fundamental yet undervalued role in sustaining urban cleanliness and national health. Their limited income and education reduce upward mobility, but their work ethic and community service remain strong. The lack of safety equipment and irregular recognition point toward the need for policy intervention. Investing in their welfare and skill development can enhance both their quality of life and the nation's development index.

CONCLUSION

Safai Karmacharis are indispensable to India's national development, ensuring cleanliness, hygiene, and

environmental sustainability. The study in Gadag City demonstrates that while these workers contribute significantly to public health and civic life, they face persistent socio-economic and occupational challenges. Recognizing their contribution, ensuring fair wages, providing protective gear, and extending social security benefits are essential steps toward inclusive development. Strengthening this workforce is not only a moral imperative but also a strategic necessity for achieving sustainable and equitable national growth.

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MAULANA ABUL KALAM AZAD (1888-1958)

✍ Smt. Geeta Konnur, Assistant Teacher, Karanataka Public School, Karatagi.

MaulanaAbulKalam Azad (1888-1958) stands as one of modern India's most distinguished scholars, freedom fighters, and educationists. His multidimensional personality combined deep religious learning with progressive modern thought. Known as the architect of India's national education system, Azad played a pivotal role in shaping policies that laid the foundation for a democratic, inclusive, and culturally enriched India.

EARLY CHILDHOOD AND FAMILY BACKGROUND

Azad was born on 11 November 1888 in Mecca, into a family renowned for religious scholarship. His father, MaulanaKhairuddin, was a respected Islamic scholar, and his mother belonged to an educated and cultured Bengali family. The young Azad grew up in an atmosphere steeped in learning, discipline, and spirituality.

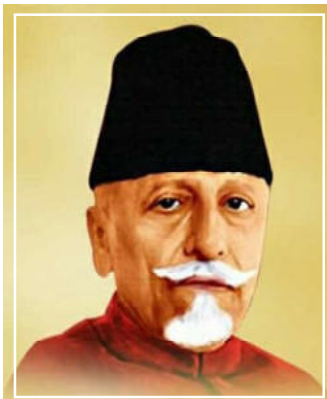
At the age of four, his family moved to Kolkata, where he received rigorous home-based education in Arabic, Persian, philosophy, mathematics, and Islamic studies. Despite following traditional learning, Azad was intellectually curious. He mastered several languages, including Urdu, Hindi, Arabic, Persian, and English. His early reading included world literature, political treatises, and reformist writings, which helped broaden his worldview beyond traditional boundaries.

LIFE JOURNEY AND PUBLIC CAREER

By his teenage years, Azad had emerged as a prolific writer and thinker. He began publishing journals such as "Lissan-ul-Sidq" and later "Al-Hilal" and "Al-Balagh," which played crucial roles in awakening political consciousness and advocating national unity. British authorities banned his publications due to their revolutionary ideas.

Azad became a prominent figure in the Indian freedom movement, working closely with Mahatma Gandhi and other national leaders. At just 35 years

of age, he became the youngest President of the Indian National Congress (1923). His emphasis on Hindu-Muslim unity and secular nationalism marked his political ideology.



After India's independence in 1947, Azad became the first Education Minister of independent India, a role in which he made historic contributions that shaped the future of Indian education.

EDUCATIONAL THOUGHTS OF MAULANAABULKALAM AZAD

Education, according to Azad, was the most powerful instrument for national development and social transformation. His educational thoughts reflect a harmonious blend of traditional values, scientific temper, humanism, and democratic ideals.

1. Education as a Fundamental Right : Azad firmly believed that every child, irrespective of caste, class, or religion, must have access to education. He declared:

"No country can ever truly progress unless its citizens are educated."

He advocated for free and compulsory education for all children up to the age of 14, which later became part of the Directive Principles of the Indian Constitution and eventually shaped the Right to Education Act (2009).

2. Promotion of National Unity through Education : Azad held that education must cultivate a sense of national identity based on cultural diversity and secularism. He believed that schools should nurture respect for all religions, foster unity, and prepare students for responsible citizenship.

3. Importance of Scientific and Technical Education : Azad strongly promoted scientific learning and research. He insisted that modern India could advance only by embracing science and technology. Under his guidance, institutions such as the Indian

Institute of Technology (IIT) system were conceptualized and established.

4. Education for Social and Economic Development : Azad believed that education should eliminate social inequalities and empower marginalized communities. He advocated vocational training, adult literacy, and women's education as essential components of national development.

5. Cultural and Literary Enrichment : As a scholar of languages and arts, Azad emphasized the importance of preserving India's cultural heritage. He promoted fine arts, music, literature, and indigenous knowledge systems through education.

MAJOR EDUCATIONAL CONTRIBUTIONS OF MAULANA ABULKALAM AZAD

During his tenure as the first Minister of Education (1947-1958), Azad implemented several landmark initiatives:

1. Establishment of National Education Bodies

- University Grants Commission (UGC) (1953)
- All India Council for Technical Education (AICTE)
- Indian Council for Cultural Relations (ICCR) (1950)

These bodies strengthened higher education, ensured standards, and encouraged international academic exchange.

2. Founding and Expansion of IITs : As one of his greatest legacies, Azad envisioned India as a center of scientific excellence. The establishment of the IITs reflected his commitment to world-class technical education.

3. Strengthening School Education : He prioritized:

- free and compulsory primary education,
- teacher education and training programs,
- universalization of schooling, and
- reforms in curriculum and textbooks.

4. Promotion of Arts and Culture : Azad was instrumental in establishing national institutions such as:

- SangeetNatakAkademi,
- Lalit Kala Akademi,
- SahityaAkademi, and
- National Library of India.

These institutions preserved and promoted India's diverse cultural heritage.

5. Advocacy for Adult Literacy : Azad believed adult education was key to building an informed and capable citizenry. He initiated mass literacy programs and encouraged community involvement in education.

CONCLUSION

MaulanaAbulKalam Azad was not only a freedom fighter but a visionary educational architect of India. His thoughts on universal education, scientific advancement, cultural enrichment, and national unity continue to shape policies even today. Constitutionally recognized as a pioneer of modern Indian education, Azad's ideas remain relevant as India moves toward inclusive and technology-driven learning. His legacy inspires generations to view education not just as a means to livelihood, but as a pathway to nation-building and human progress.

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