**NSOU-OPEN JOURNAL** **ISSN: 2581-5415**
**Vol.8 No.1 (January 2025)**
**A multidisciplinary Online Peer Reviewed Journal of Netaji Subhas Open University, INDIA**

# Building Intellectual Foundations: Fostering Intellectual Property Creations from Schools to Universities

Nilanjan Bala
Research Fellow, Grade-II, SCERT, SED, GoWB
Email- nilanjanbala@scertwb.org

**Abstract**

*This article discusses the critical need for integrating Intellectual Property (IP) education throughout educational institutions. The World Intellectual Property Organization defines IP as creations of the mind—such as inventions, literary and artistic works, designs, and symbols—that are used in commerce and can be legally protected. This study traces the historical growth of intellectual property, emphasizing its role in promoting creativity, innovation, and economic progress globally.*

*The paper uses the Hexa Contour framework (concept of the author adapted from WIPO) to provide a comprehensive curriculum that integrates IP education from primary school to university. The research employs survey methods using Google Forms to assess current IP awareness across educational institutions, revealing significant gaps and highlighting the need for targeted educational changes. The findings underscore a disparity between perceived knowledge of IP and its actual integration into curricula, stressing the critical need for educational strategies that inspire and cultivate creativity and innovation.*

*Finally, the article advocates for a systematic approach to building intellectual foundations by integrating IP education across disciplines. It emphasizes the importance of collaboration among educators, governments, and industry stakeholders to create an environment where students are encouraged to innovate and create, with the understanding that knowledge of legal rights will naturally follow as their intellectual creations mature.*

***Key Words:*** Creativity, Curriculum Integration, Innovation, Intellectual Property (IP), Intellectual Property Rights (IPR) Education.

## Introduction

The term "intellectual property" (IP) encompasses all works of literature, art, inventions, designs, and symbols that are used in trade. The "World Intellectual Property Organization" (WIPO) defines IP as ***"creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names, and images used in commerce."*** (https://www.wipo.int/about-ip/en/).

In addition to defending the rights of creators, respecting and valuing intellectual property is also crucial for creating an atmosphere that encourages innovation and creativity.

This paper centres on the objective of incorporating intellectual property education into the curriculum at every educational level, ranging from elementary school to university, in order to stimulate the generation of new intellectual property.

The centre of interest of this paper is how educational institutions can foster creativity and innovation with the Indian belief system of inclusivity and access.

**IPR's Brief History in Time:-**

1. Early forms of IP protection date back to Ancient Greece and Rome, with more formalized frameworks like the **Venetian Patent Statute (1474)** and **English Statute of Monopolies (1624)** paving the way for global IP development.
2. India adapted its IP laws later, influenced by international conventions like the **Paris Convention (1883)** and **Berne Convention (1886)**, leading to laws such as the **Patents Act (1970)** and **Copyright Act (1957)**.

3. The **Trade Marks Act (1999)** and **Geographical Indications (GI) Act (1999)** highlighted India's commitment to protecting its cultural resources, reflecting global accords like the **Lisbon Agreement (1958)** and **Madrid Protocol (1989)**.
4. India's **Patents Act introduced Section 3(d)** to prevent the "ever greening" of patents, ensuring essential drugs remain affordable, reflecting a balance between innovation and public welfare.
5. The **Biological Diversity Act (2002)** and **Traditional Knowledge Digital Library (2001)** showcase India's focus on safeguarding indigenous knowledge, aligning with international treaties on genetic resources.
6. India's IP laws are grounded in inclusivity and accessibility, prioritizing **shared benefits, societal welfare, and equitable growth** over exclusive rights enforcement.
7. By emphasizing **innovation and access balance** in education, students can view intellectual property as a tool for **collaboration and responsible creativity**, ensuring IP laws benefit both creators and the public interest.
8. India's approach contrasts with stricter IP regimes, focusing on **transparency, inclusivity, and equitable distribution of innovation benefits**. Incorporating these values into education will inspire responsible innovation.

**Twining with SDG & Background**

In this historical backdrop, it will be unthinkable to deny the perspective of SDG to consider the aspects of IPR.

Sustainable development, as defined by the 1987 Brundtland Report and advanced through the 1992 Earth Summit, guides global policy to meet current needs without compromising future generations. This framework underpins international agreements like Agenda 21 and the Rio Declaration, fostering efforts such as the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).

The Sustainable Development Goals (SDGs), comprising 17 interconnected objectives, leverage Intellectual Property (IP) rights to drive innovation and technology transfer. Patents support infrastructure (SDG 9), copyrights promote education (SDG 4), design rights enhance resource efficiency (SDG 12), and trademarks aid in sustainable consumer choices.

Considering India's prominence in the realm of innovation, ranking **first** among Central and Southern Asian countries and **leading** the lower-middle-income group in the Global Innovation Index 2023 (WIPO, 2023), underscores the significance of IPR in driving national and regional development agendas.

To further this trajectory of development, t**his paper proposes "Building Intellectual Foundations: Fostering Intellectual Property Creations from Schools to Universities."**

**Aims and objectives**

The paper proposes to build an ecosystem of intellectual foundations for creations of intellectual properties across primary, secondary, higher secondary, college, and university levels of education, based on the following ***Hexa Contour (Italics mine)***.

These contours will serve not as definitive signposts, but as thematic frameworks for developing activities and learning strategies to strengthen intellectual foundations related to IPR with a focus on nurturing creativity and innovation at every educational level and there might be other themes which are not purview of this paper -

1. **Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions:** The aim is to secure intellectual property (IP) protection for traditional knowledge (TK) and traditional cultural expressions (TCEs) as intangible assets. These assets cover a diverse array of elements such as traditional medicine, environmental insights, art, symbols, and music.
2. **Economics :-** The aim is to create and boost the creative ability of the local community to recognize, absorb, and learn and implement to improve their lives which is known as "***as frugal, jugaad or bottom-of-the-pyramid innovations, as they are produced taking account of local needs and purchasing power."***

***(https://www.wipo.int/about-ip/en/ip_innovation_economics/innovating-towards-development/)***

3. **Gender Equality :-** The aim is , as per the WIPO Policy on Gender Equality , 2024-2027, which promotes an inclusive and diverse organizational culture with equal representation at all levels while enhancing institutional gender mainstreaming to integrate gender aspects into all areas of life and work.
4. **Climate Change :-** The aim is to raise awareness that tackling climate change relies on fostering economic growth that collaborates with the environment rather than opposing it. Innovative green technology solutions can assist by enabling greater efficiency with fewer resources, including alternative energy production, energy conservation, and more sustainable forms of transportation, agriculture, and forestry.
5. **Sports :-**The expression "***Bangalir Priyo Khela Football***" (Football is the Favourite Sport of Bengalis) honours the profound passion for football that exists in West Bengal . Arabinda Mukherjee's 1971 film "Dhanyee Meye" is widely linked to this statement marked with the iconic presence of famous Actors Uttam Kumar & Jaya Bhaduri Bachhan. The film emphasizes Bengali football fans' fervour and enthusiasm, which reflects the region's unique cultural and athletic character. The aim is to promote innovations in Sports , like home-grown low cost shoes or less costly prostheses and other human engineering.
6. **Tourism :-** Despite the tourism sector's setback during the COVID-19 pandemic, WIPO Director General Daren Tang and UNWTO Secretary General Zurab Pololikashvili predicted in a joint Foreword that it will recover and help rejuvenate hard-hit economies and societies due to its ability to adapt and provide creative solutions to new challenges. The aim is to promote the concept of reimagining the cultural heritage—which includes things like regional arts and crafts, indigenous music and performances, and cuisine produced locally—as important resources for growing the tourism industries and generating new sources of income.

**Materials & methods :-**

The aforementioned Hexa Contours will function as the foundation for creating a range of instructional activities and approaches meant to incorporate IPR education at several educational levels—from primary and secondary schools to higher secondary phases, as well as colleges and universities. This method emphasizes the connections between these educational phases by having separate conversations for each level, but on the basis of the six themes, fondly called , Hexa Contours.

Before designing activities and strategies, understanding the current state of Intellectual Property Rights (IPR) awareness is essential. Therefore, survey research methodology was adopted. A questionnaire was developed to assess the present level of IPR awareness in educational institutions, identify gaps in IPR education, and formulate a curriculum integrating IPR education into existing frameworks.

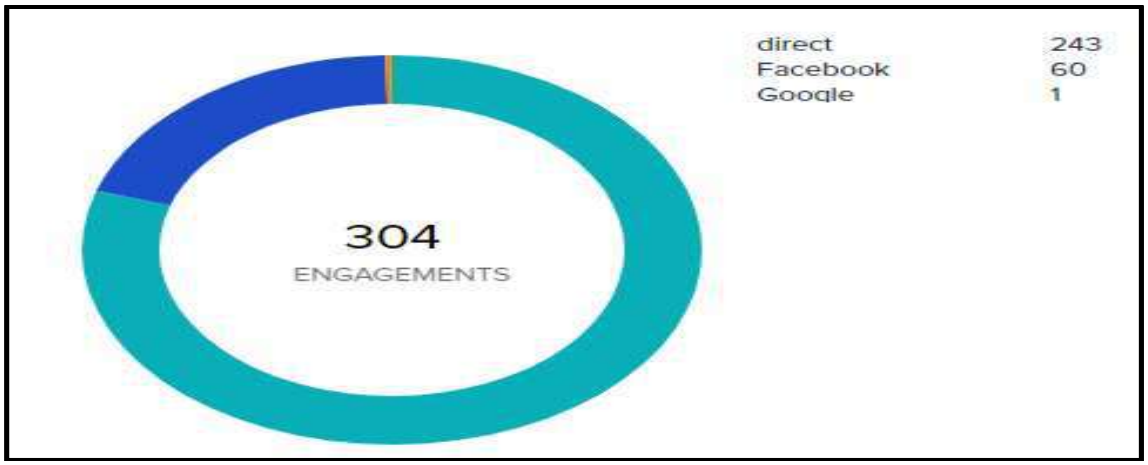
The questionnaire was implemented using Google Forms, titled **"Assessing IPR Awareness and Education in Educational Institutions,"** comprising seven sections:

1. **Respondent Information:** Gather basic information about respondents and their institutions, comprising 5 questions.
2. **Current State of IPR Awareness:** Assess the current level of IPR awareness within the institution, comprised of 3 questions,
3. **Identifying Gaps in IPR Education:** Identify areas where IPR education is insufficient and consist of 2 questions.
4. **Developing an IPR Curriculum:** Seek suggestions for developing a comprehensive IPR curriculum and comprising 2 questions.
5. **Evaluating Impact:** Explore perceptions on the potential impact of IPR education on students, comprising 2 questions.
6. **Suggestions or Advice:** Solicit ideas on integrating IPR concepts into various subjects such as history, science, art, math, business studies, and technology education. This consists of 1 open ended question.

The Google Form link was shortened using the Bitly platform and shared via the researcher's Facebook page on June 24, 2024, at 6:39 p.m. and through various WhatsApp groups , like Google Educator Mentors Group, India, of which the researcher is a member as of his license as a "Google Certified Educator, Level-2". The survey was closed at 11.49 p.m. on June 26, 2024. The survey form reached 304 people.

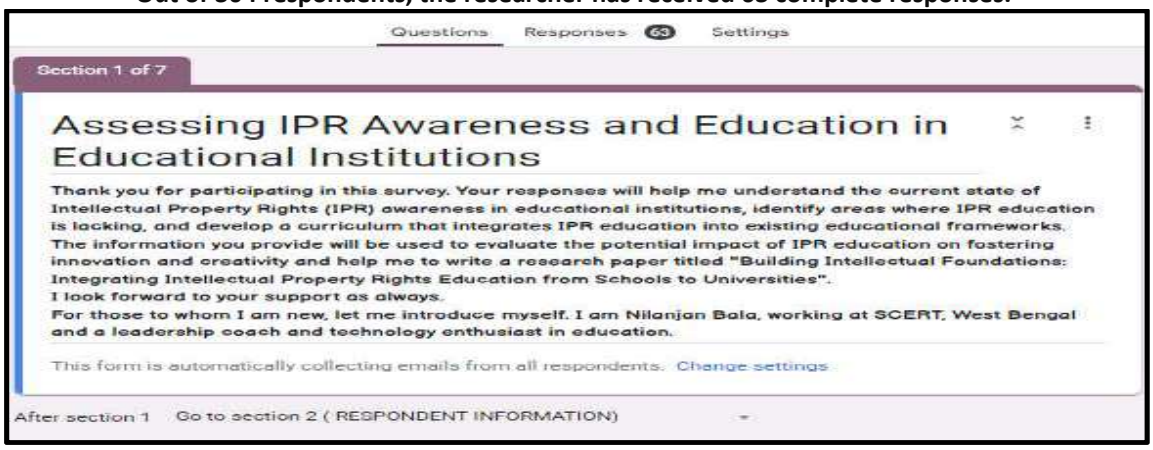
It was initially intended to confine the scope of the survey to the 24 districts of West Bengal, but once the link was uploaded on the web, there were requests to include "Outside West Bengal" and responses came from ***IIPS, Mumbai, Rosary Schools , Rajkot, DayalBagh University, DIET, Kangra, Army Public School, Delhi, Sanskriti School , Pune , Maharsatra*** to name a few. The analytics of the link show that the survey's geographical reach is as follows and the survey went Global :-


***Source :- https://app.bitly.com/Bl9b7boL4Cn/links/bit.ly/3VVuOFm/details***




***Source :- https://app.bitly.com/Bl9b7boL4Cn/links/bit.ly/3VVuOFm/details***

**Out of 304 respondents, the researcher has received 63 complete responses.**




**Source : https://docs.google.com/forms/d/1dhEAdLyKRX19dpGLPQvRKW_hSkYlYTeEytawPbOZrxM/edit**

**Results and discussion**

The researcher has used Google Spreadsheets to analyse the build on the next section. **The results of the analysis is discussed in the following manner, section wise -**

| SL.NO. | SECTION | TABLE NO. (S) | VISUALIZATION NO.(S) |
|---|---|---|---|
| 1 | Respondent Information | **1,2,3** | **1,2,3** |
| 2 | Current State of IPR Awareness | **4,5,6** | **4,5,6** |
| 3 | Identifying Gaps in IPR Education | **7,8** | **7,8** |
| 4 | Developing an IPR Curriculum | **9,10** | **9,10** |
| 5 | Evaluating Impact | **11,12** | **11,12** |
| 6 | Suggestions or Advice | Organized in Tabular Format | |

**First Section: - Respondent Information**

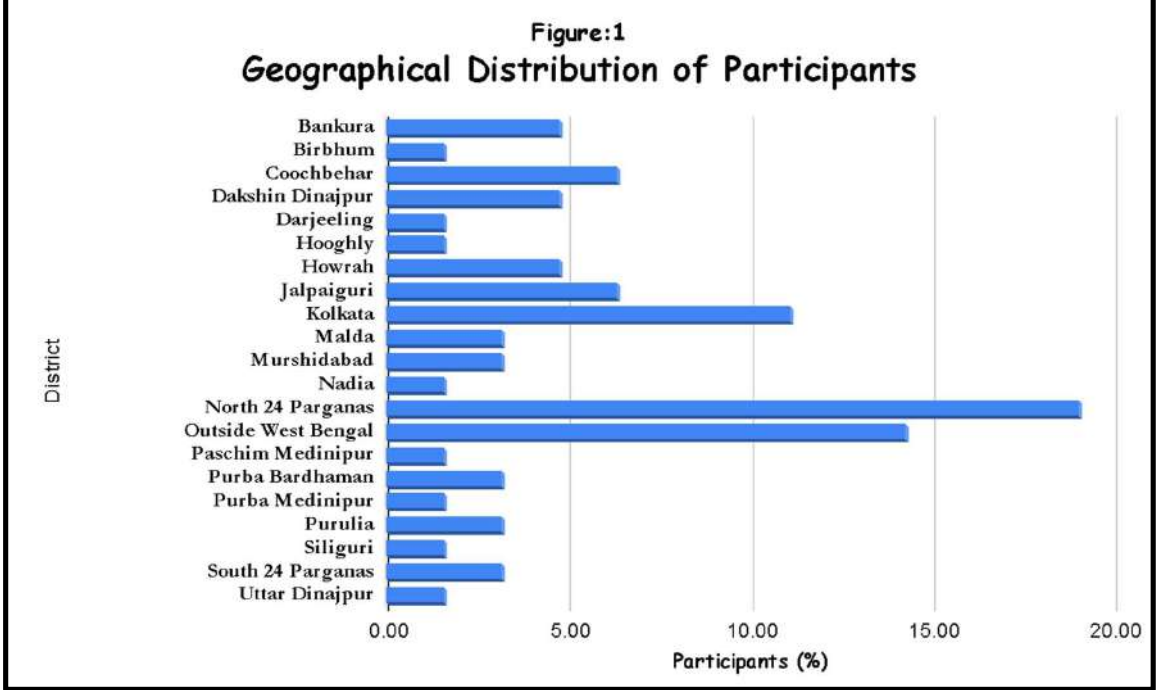
This section provides insights across three key components: Geographical distribution of Participants (Table & Figure:1) , Profile of the Participant ( Table & Figure : 2), and Level of Students Taught (Table & Figure : 3).

**Table:1**

**Geographical Distribution of Participants**

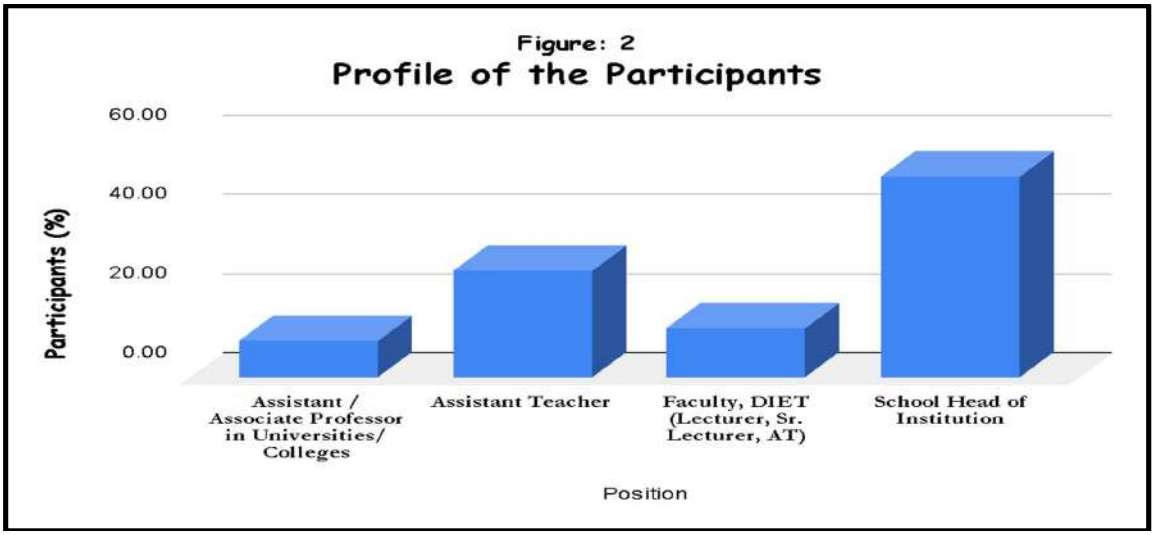
| Districts/ Regions | Participants (%) |
|---|---|
| Bankura | 4.76 |
| Birbhum | 1.59 |
| Coochbehar | 6.35 |
| Dakshin Dinajpur | 4.76 |
| Darjeeling | 1.59 |
| Hooghly | 1.59 |
| Howrah | 4.76 |
| Jalpaiguri | 6.35 |
| Kolkata | 11.11 |
| Malda | 3.17 |
| Murshidabad | 3.17 |
| Nadia | 1.59 |
| North 24 Parganas | 19.05 |
| Outside West Bengal | 14.29 |
| Paschim Medinipur | 1.59 |
| Purba Bardhaman | 3.17 |
| Purba Medinipur | 1.59 |
| Purulia | 3.17 |
| Siliguri | 1.59 |
| South 24 Parganas | 3.17 |
| Uttar Dinajpur | 1.59 |

Figure:1

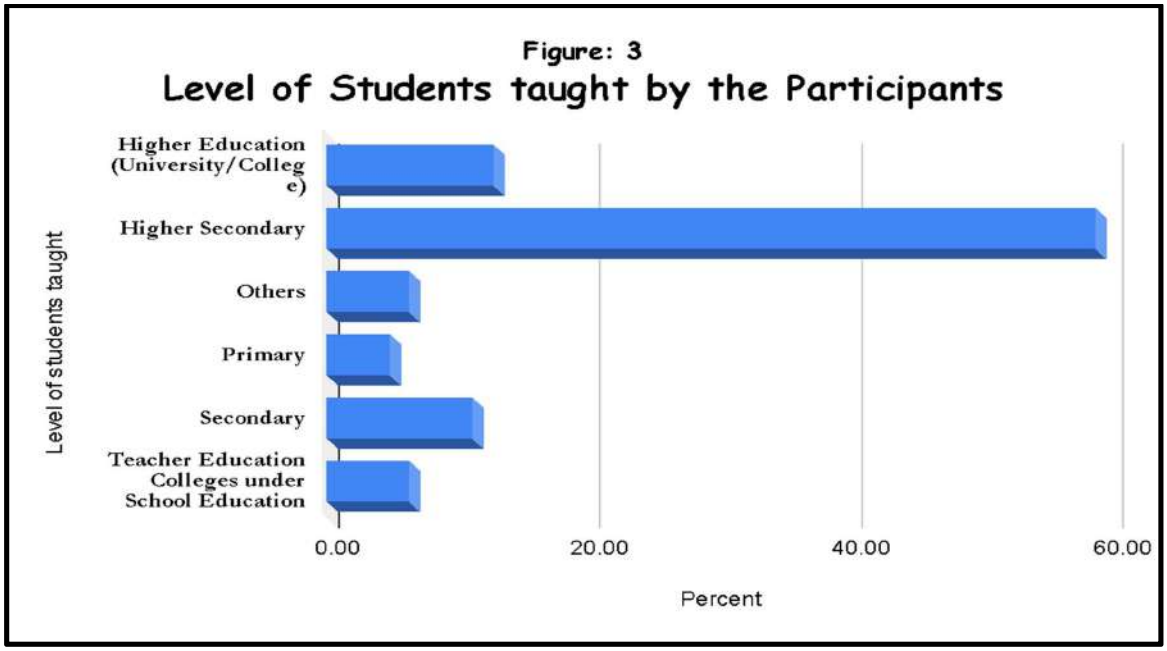



| Table: 2 | |
|---|---|
| **Profile of the Participants** | |
| **Designation** | **Participants (%)** |
| Assistant / Associate Professor in Universities/ Colleges | 9.52 |
| Assistant Teacher | 26.98 |
| Faculty, DIET (Lecturer, Sr. Lecturer, AT) | 12.70 |
| School Head of Institution | 50.79 |

Figure: 2



| Table: 3 | |
|---|---|
| **Level of Students taught by the Participants** | |
| **Level** | **Percent** |
| Higher Education (University/College) | 12.70 |
| Higher Secondary | 58.73 |
| Others | 6.35 |
| Primary | 4.76 |
| Secondary | 11.11 |
| D.El.Ed Institutions (DIETs) | 6.35 |




**Insight from the Section**

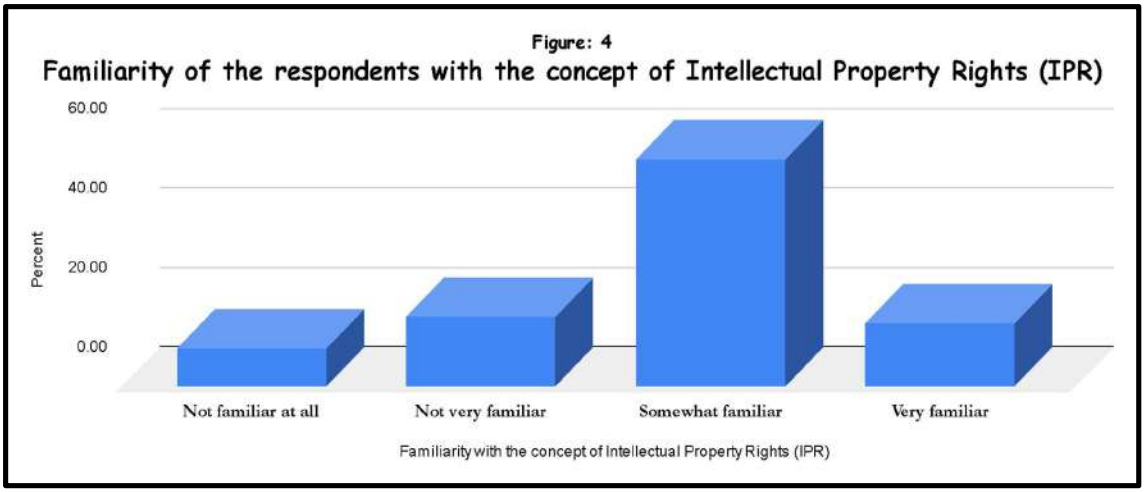
1. **North 24 Parganas leads in participation (19.05%)**, followed by **Kolkata (11.11%)**.
2. **Moderate participation in Jalpaiguri and Coochbehar (6.35%)**, with lower engagement from Birbhum, Hooghly, and Siliguri (1.59%).
3. **14.29% of respondents from outside West Bengal**, showing broader relevance beyond state borders.
4. **School heads make up 50.79% of respondents**, followed by **assistant teachers (26.98%)** and **DIET faculty (12.70%)**.
5. **Higher education representation from assistant/associate professors (9.52%)** adds insights from universities and colleges.
6. **Focus on higher secondary education (58.73%)**, with **secondary education (11.11%)** and **higher education (12.70%)** also covered.
7. **Primary and D.El.Ed institutions have 4.76% representation**, indicating scope for expanding IPR awareness in these sectors.

**Second Section: - Current State of IPR Awareness**

This section provides insights across three key components: Familiarity of the respondents with the concept of Intellectual Property Rights (Table & Figure no. 4), Inclusion of IPR education in the Institutions (Table & Figure no. 5) and Respondents' opinion on the level in which IPR education may be included (Table & Figure no. 6).

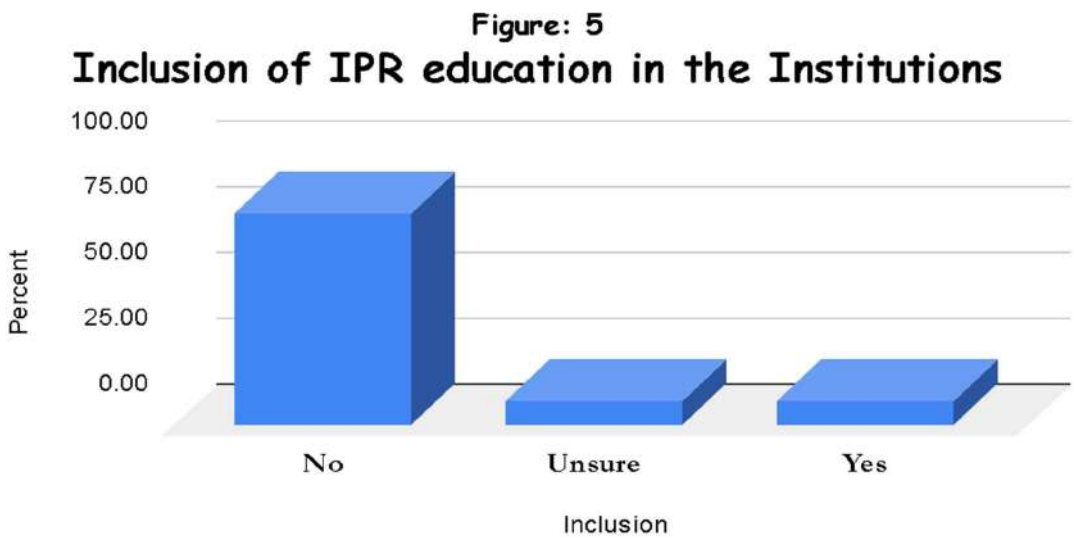
| **Table: 4** | |
|---|---|
| **Familiarity of the respondents with the concept of Intellectual Property Rights (IPR)** | |
| Familiarity with the concept of Intellectual Property Rights (IPR) | Percent |
| Not familiar at all | 9.53 |
| Not very familiar | 17.46 |
| Somewhat familiar | 57.14 |
| Very familiar | 15.87 |

Figure: 4



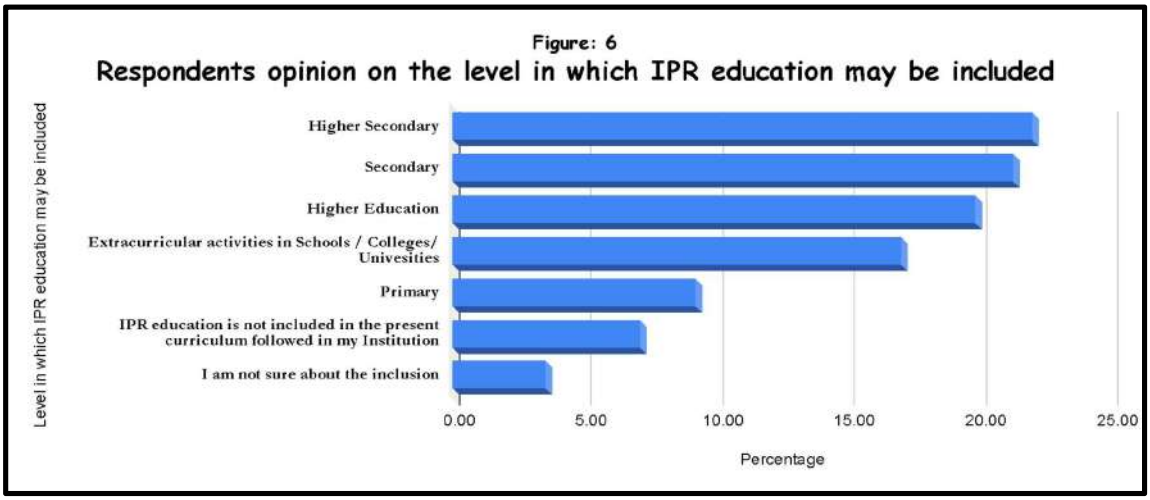

| **Table: 5** | |
|---|---|
| **Inclusion of IPR education in the Institutions** | |
| Inclusion | Percent |
| **No** | 80.96 |
| **Unsure** | 9.52 |
| **Yes** | 9.52 |

Figure: 5




| Table: 6 | |
|---|---|
| **Respondents opinion on the level in which IPR education may be included** | |
| Higher Secondary | 21.99 |
| Secondary | 21.28 |
| Higher Education | 19.86 |
| Extracurricular activities in Schools / Colleges/ Univesities | 17.02 |
| Primary | 9.22 |
| IPR education is not included in the present curriculum followed in my Institution | 7.09 |
| I am not sure about the inclusion | 3.54 |

Figure: 6




**Insight from the Section**

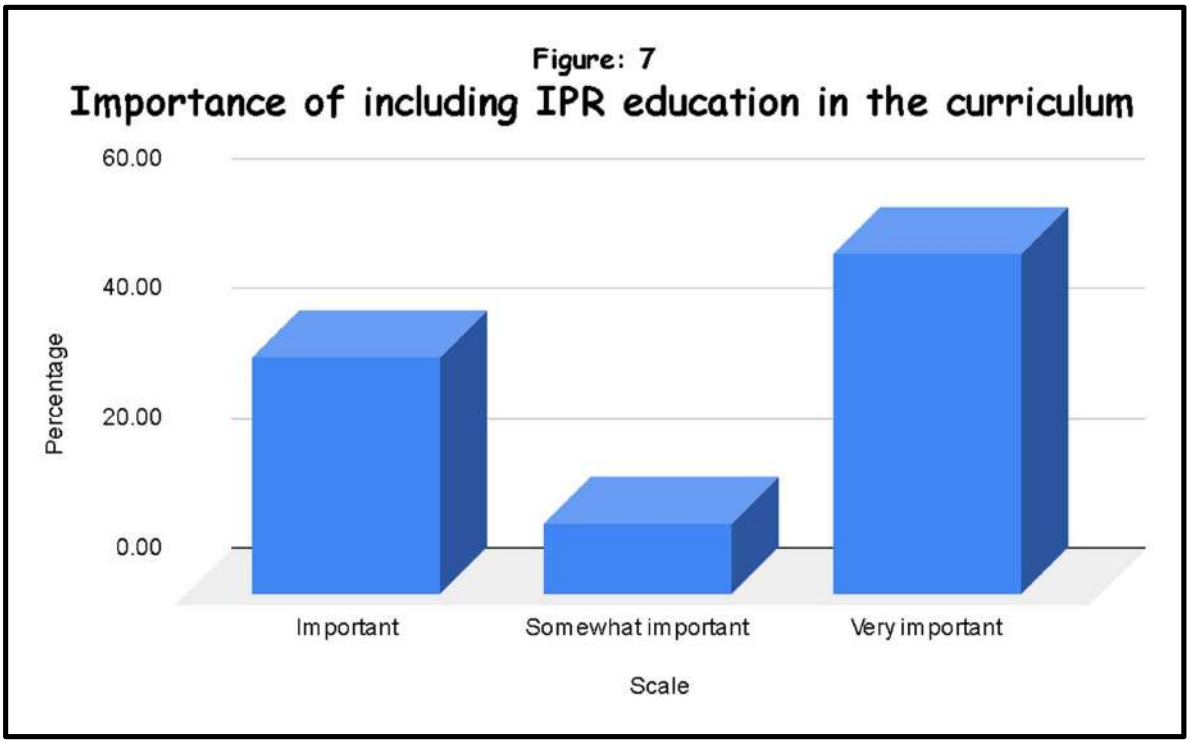
1. **57.14% of respondents are somewhat familiar with IPR**, indicating a moderate awareness level.

2. **27.99% of respondents lack IPR familiarity**, emphasizing the need for further education.
3. **80.96% report IPR education is not included** in their institutions, highlighting a major gap.
4. **9.52% are unsure about IPR inclusion**, reflecting uncertainty in institutional policies.
5. **Preferred integration levels** include **Higher Secondary (21.99%)**, **Secondary (21.28%)**, and **Higher Education (19.86%)**.
6. **7.09% say IPR is not in their institution's curriculum**, with **3.54% uncertain**.
7. **Extracurricular activities (17.02%)** are suggested as alternative ways to incorporate IPR education.

**Third Section: - Identifying Gaps in IPR Education**

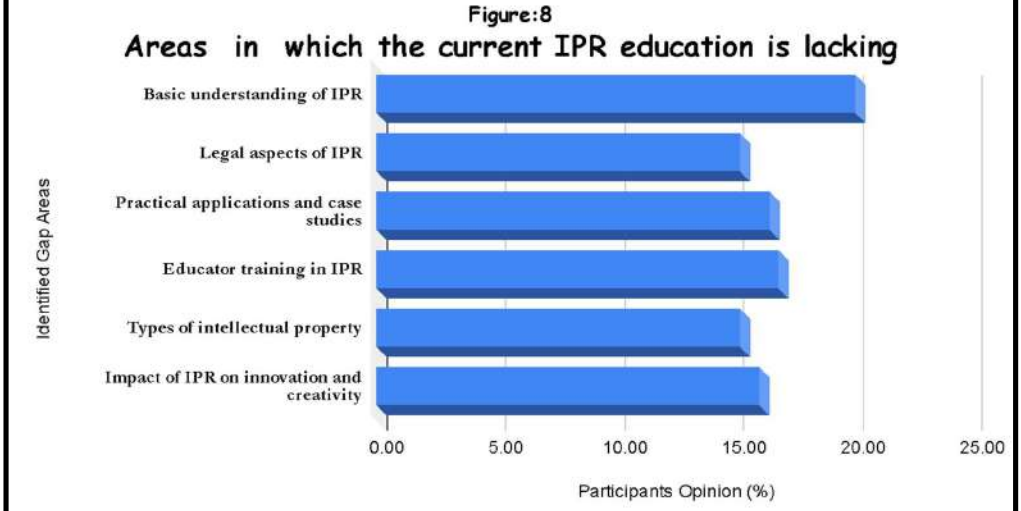
This section provides insights across two key components: Importance of including IPR education in the curriculum (Table & Figure no. 7) and Areas in which the current IPR education is lacking (Table & Figure no.8).

| **Table: 7** | |
|---|---|
| **Importance of including IPR education in the curriculum** | |
| Scale | Percentage |
| Important | 36.51 |
| Somewhat important | 11.11 |
| Very important | 52.38 |



| Table: 8 | |
|---|---|
| **Areas in which the current IPR education is lacking** | |
| Identified Gap Areas | Participants Opinion (%) |
| Basic understanding of IPR | 20.08 |
| Legal aspects of IPR | 15.26 |
| Practical applications and case studies | 16.47 |
| Educator training in IPR | 16.87 |
| Types of intellectual property | 15.26 |
| Impact of IPR on innovation and creativity | 16.06 |

Figure:8




**Insight from the Section:-**

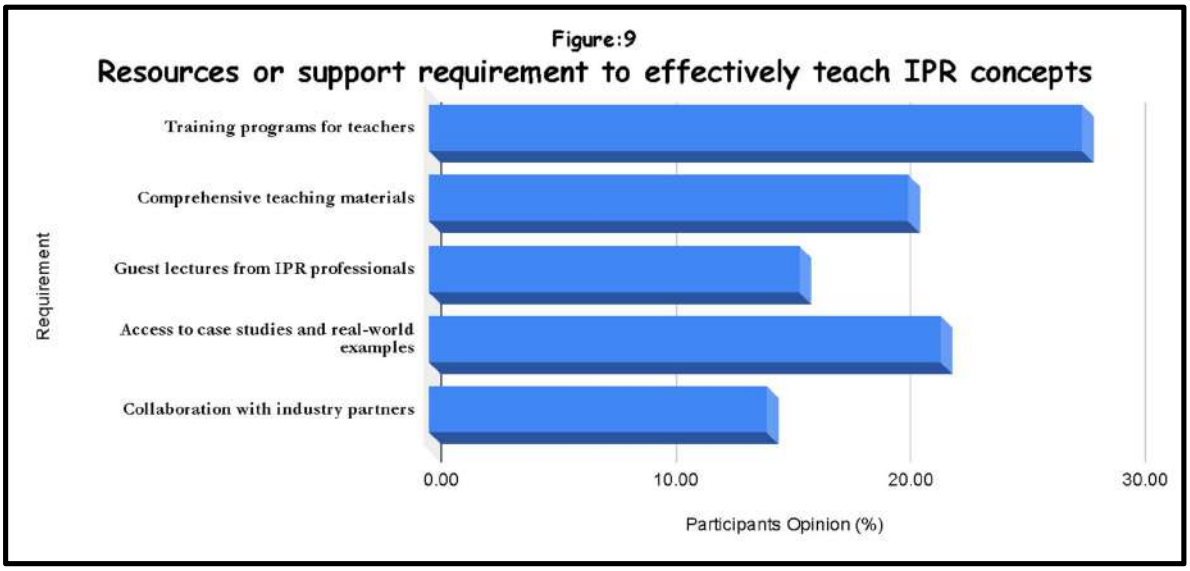
1. 88.89% of respondents support integrating IPR education, with 52.38% rating it as very important and 36.51% as important.
2. 20.08% emphasize the need for stronger foundational IPR knowledge.
3. 15.26% highlight gaps in understanding legal aspects of IPR.
4. 16.47% note a lack of practical applications and real-world case studies in IPR education.
5. 16.87% identify insufficient teacher training for teaching IPR concepts.
6. 15.26% suggest the need for more detailed education on different types of intellectual property.
7. 16.06% point to inadequate understanding of IPR's impact on innovation and creativity.

**Fourth Section: - Developing an IPR Curriculum**

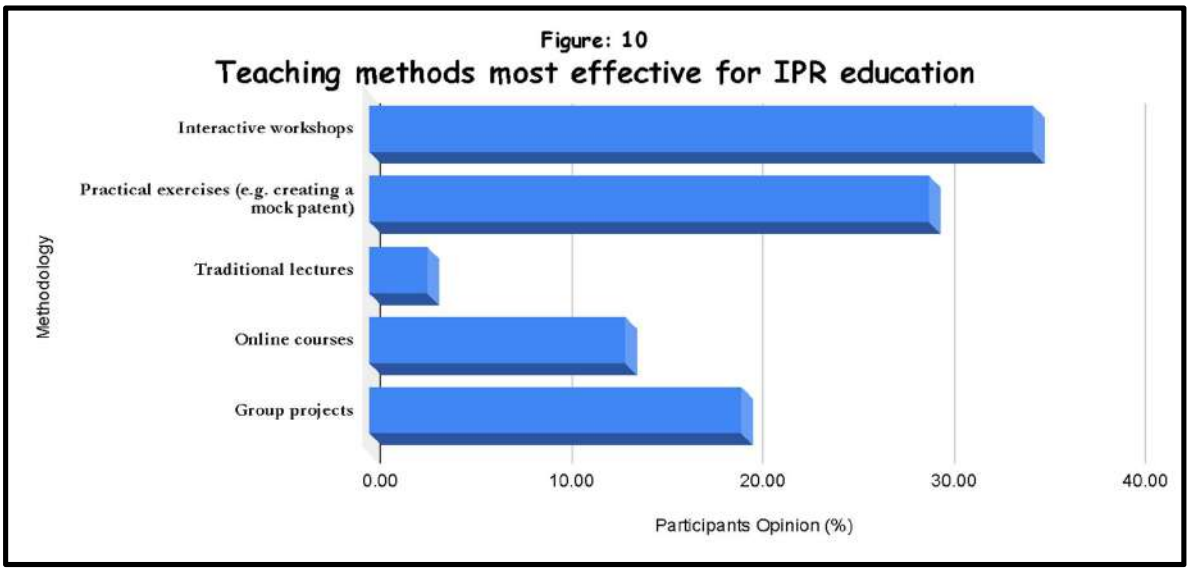
This section provides insights across two key components: Resources or support requirements to effectively teach IPR concepts (Table & Figure no. 9) and Teaching methods most effective for IPR education (Table & Figure no. 10).

| Table: 9 | |
|---|---|
| **Resources or support requirement to effectively teach IPR concepts** | |
| Requirement | Participants Opinion (%) |
| Training programs for teachers | 27.78 |
| Comprehensive teaching materials | 20.37 |
| Guest lectures from IPR professionals | 15.74 |
| Access to case studies and real-world examples | 21.76 |
| Collaboration with industry partners | 14.35 |

Figure:9




| Table: 10 | |
|---|---|
| **Teaching methods most effective for IPR education** | |
| Methodology | Participants Opinion (%) |
| Interactive workshops | 34.76 |
| Practical exercises (e.g. creating a mock patent) | 29.27 |
| Traditional lectures | 3.05 |
| Online courses | 13.41 |
| Group projects | 19.51 |




**Insight from the Section:-**

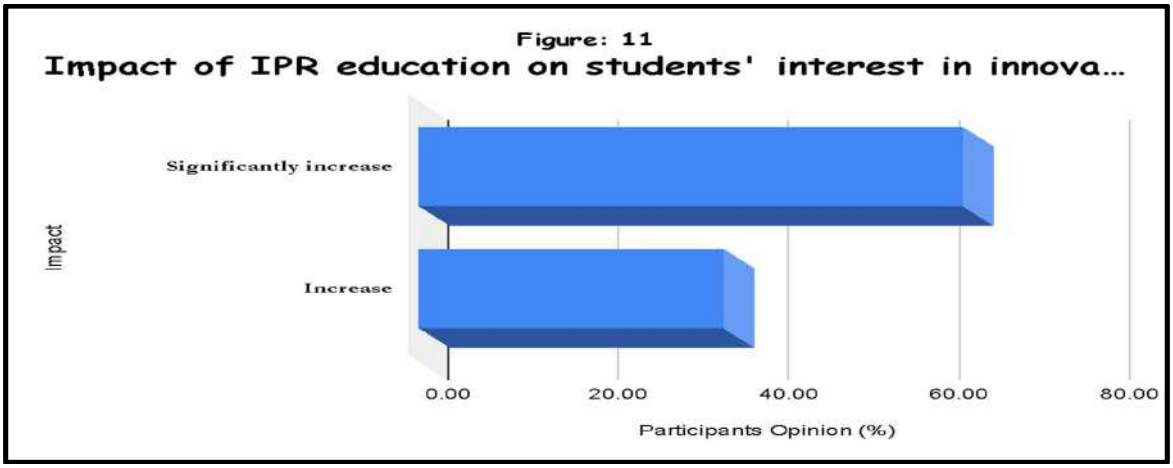
1. 27.78% of respondents consider teacher training programs essential for effectively teaching IPR concepts.
2. 20.37% emphasize the need for comprehensive teaching materials, while 21.76% highlight access to case studies and real-world examples.
3. 15.74% suggest guest lecturers from IPR professionals, and 14.35% value collaboration with industry partners.
4. Interactive workshops are favored by 34.76% as the most effective teaching method, followed by practical exercises (29.27%), such as creating a mock patent.
5. Traditional lectures are preferred by only 3.05%, while online courses (13.41%) and group projects (19.51%) are also seen as effective.

**Fifth Section :- Evaluating Impact**

This section provides insights across two key components: Impact of IPR education on students' interest in innovation and creativity ( Table & Figure: 11)

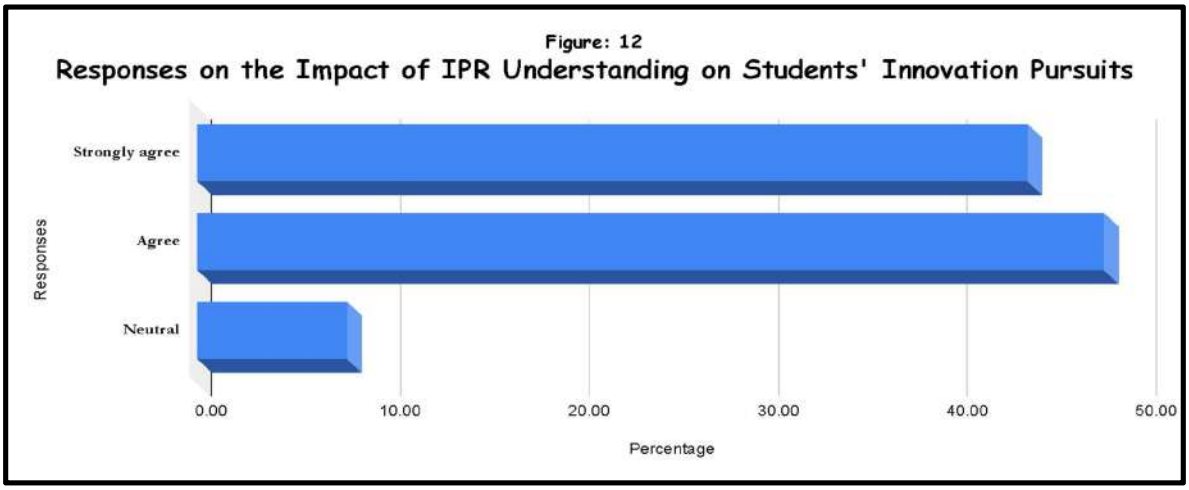
| **Table: 11** | |
|---|---|
| **Impact of IPR education on students' interest in innovation and creativity** | |
| Impact | Participants Opinion (%) |
| Significantly increase | 64.00 |
| Increase | 36.00 |

Figure: 11




| Table: 12 | |
|---|---|
| **Responses on the Impact of IPR Understanding on Students' Innovation Pursuits** | |
| **Responses** | **Percentage** |
| Strongly agree | 44.00 |
| Agree | 48.00 |
| Neutral | 8.00 |

Figure: 12




**Insight from the Section :-**

1. 64% of participants believe IPR education significantly increases students' interest in innovation and creativity, with another 36% agreeing it increases interest.
2. 92% of respondents agree or strongly agree that understanding IPR positively impacts students' innovation pursuits, reinforcing IPR education as a catalyst for innovation.
3. Only 8% are neutral about the impact of IPR on innovation, with no negative feedback recorded, highlighting strong overall support for IPR education's positive role.

**Sixth Section: - Suggestions & Recommendations**

This section dealt with open ended opinions of 63 participants on Integrating Intellectual Property Rights (IPR) Education into Curricula from Schools to Universities. Their opinions have been delineated under **– A. Subjects & Integration Approaches, B. Pedagogical C. Approaches and Challenges & Solutions.**

**A. Subjects & Integration Approaches**

| Subject | Integration Approach | Example Activities |
|---|---|---|
| **Science & Technology** | Teach patent basics through hands-on experiments | Discussing Alfred Nobel's patent for dynamite and its impact. |
| **Language Arts** | Discuss copyright when analyzing literature and creating original works | Encouraging students to protect their own writings through copyright registration. |
| **Social Studies** | Explore historical and global perspectives of copyright and patents | Analyzing historical patent cases and their societal impacts. |
| **Mathematics & Economics** | Introduce trademarks and trade secrets in business and economic contexts | Examining the financial rewards and protections provided by trademarks. |
| **Arts** | Address copyright in visual arts, respecting others' creative rights | Creating projects with an understanding of copyright implications and licensing options. |
| **Computer Science** | Discuss software copyrights and open-source licensing models | Analyzing licensing options for student-created software. |
| **Business & Entrepreneurship** | Discuss IP management and protection strategies for startups | Drafting non-disclosure agreements (NDAs) and IP strategies in business plans. |
| **Marketing & Brand Management** | Explore trademark importance and brand protection strategies | Developing brand protection strategies for hypothetical products. |
| **Creative Writing & Literature** | Analyze public domain and copyright status of literary works | Creating original content while respecting copyright laws. |
| **Fine Arts & Visual Design** | Discuss derivative works and licensing agreements in the art industry | Projects where students create artworks considering copyright implications. |

**B. Pedagogical Approaches**

1. **Practical Projects:** Invention fairs, mock trials, and patent application simulations to deepen understanding.
2. **Contextual Examples:** Real-world cases such as how Alfred Nobel's patent for dynamite funded the Nobel Prizes.
3. **Interactive Classes:** Discussions and debates on self-innovation, creativity protection, and economic policies related to IPR.
4. **Teacher Training:** Training teachers through interactive and practical classes to effectively teach IPR concepts.
5. **Interdisciplinary Approach:** Integrating IPR into existing subjects to reduce the burden on students while ensuring relevance and engagement.

**C. Challenges & Solutions**

1. **Challenge:** Organizing thoughts into a structured plan for creating an integrated IPR course.
    a. **Solution:** Tailor curriculum to different disciplines while ensuring an interdisciplinary approach. Assess understanding through quizzes, debates, and practical assignments.
2. **Challenge:** Lack of practical application in subjects like economics and business studies.
    a. **Solution:** Introduce practical examples and real-life applications to make learning more engaging.

**Limitations of the Study**

1. **Social Desirability Bias:** Participants may provide socially acceptable answers, potentially leading to an overestimation of the positive impact of IPR education.
2. **Limited Knowledge Domain:** Participants with limited IPR understanding may give uninformed opinions, indicating the need for **more education and awareness about IPR**.
3. **Absence of Negative Feedback:** The lack of critical responses suggests a possible bias or lack of diverse perspectives among participants.
4. **Need for Qualitative Insights:** While the survey provides quantitative data, **qualitative insights are missing** to explain the strong positive perceptions of IPR education.
5. **Broader Impact Assessment: Longitudinal studies are needed** to assess the actual impact of IPR education, such as increases in innovative projects or patents filed.

**Conclusion**

After gaining insights from the survey, the researcher now proposes a set of activities for **teacher training** to build an ecosystem of education. Designing teacher training activities based on the ***Hexa Contour framework (italics mine)*** aims to equip educators with the knowledge and tools necessary to integrate Intellectual Property Rights (IPR) education into their teaching. Here are some suggested activities tailored for teachers at different educational levels. Teachers may contextualize these activities to fit their specific needs:

| Theme | Activity | Objective | For | Description |
|---|---|---|---|---|
| Genetic Resources, Traditional Knowledge, and Traditional Cultural Expressions | Integrating Traditional Knowledge in Classroom Projects | Teachers learn to integrate traditional knowledge and cultural expressions. | Primary, Secondary, Higher Secondary, College, University | Workshop on significance, project design, hands-on activities like presentations on local knowledge and arts. |
| Economics | Exploring Frugal Innovation | Introduce frugal innovation and economic impact. | Secondary, Higher Secondary, College | Guest lecture, innovation challenge, curriculum integration for brainstorming and prototyping frugal innovations. |
| Gender Equality | Gender Equality in Innovation | Promote gender equality in innovation and intellectual property. | Primary, Secondary, Higher Secondary, College, University | Workshop on WIPO policy, role-playing to address biases, project planning for inclusive classroom practices. |
| | Promoting Inclusive Innovation Projects | Encourage inclusive innovation projects. | Higher Secondary, College, University | Brainstorming sessions, mentorship programs, assessment planning with gender sensitivity in assessment criteria. |
| Climate Change | Climate Change Curriculum Integration | Integrate climate change into existing curricula. | Secondary, Higher Secondary, Colleges | Curriculum workshop, resource development, evaluation methods focusing on green technology's impact on student learning and awareness. |
| Sports | Cultural Significance of Sports | Understand the cultural impact of sports. | Primary, Secondary | Film screenings, discussions on sports' cultural identity, creative projects exploring sports' history and impact. |
| Tourism | Tourism Innovation Projects | Encourage innovative solutions in the tourism sector. | Secondary, Higher Secondary, College | Innovation workshops, collaboration with government tourism offices, project exhibitions with local government representation. |

**Acknowledgement**

In this small but excruciating voyage across the vast ocean of knowledge domains of IPR, I am profoundly grateful to the people who guided me with expertise and dedication.

**Shri Abhijit Mukherjee**, Head of Institution, Bonhooghly High School, akin to a seasoned captain of a sturdy ship, steered me through the complexities of Google Spreadsheets and data visualizations. His guidance was the compass that kept our course true amidst the turbulent seas of information.

**Shri Sudip Mitra**, Lecturer, DIET, Uttar Dinajpur, & **Smt. Susmita Ghosh, Assistant Teacher, Beltala Girls School,** like a steady wind in our sails, meticulously reviewed the manuscript, ensuring our journey was marked by clarity and depth. Their insights were like the favorable winds that propelled me forward.

**Dr. Papiya Upadhyay**, my mentor and beacon, illuminated my path, shaped my understanding, and equipped me to navigate the ever-changing currents of educational theory and practice. Each of these individuals played a crucial role in my journey, anchoring me during storms and guiding me towards new intellectual horizons.

**Bibliography**

- Burk, D. L., & Lemley, M. A. (2009). *The patent crisis and how the courts can solve it*. University of Chicago Press.
- Dutfield, G., & Suthersanen, U. (2008). *Global intellectual property law*. Edward Elgar Publishing.
- Goldstein, P. (2003). *Copyright's highway: From Gutenberg to the celestial jukebox* (Rev. ed.). Stanford University Press.
- Op den Kamp, C., & Hunter, D. (Eds.). (2019). *A history of intellectual property in 50 objects*. Cambridge University Press.
- Sherman, B., & Bently, L. (1999). *The making of modern intellectual property law: The British experience, 1760-1911*. Cambridge University Press.
- Vaidhyanathan, S. (2017). *Intellectual property: A very short introduction*. Oxford University Press.
- World Intellectual Property Organization. (2020). *What is intellectual property?* World Intellectual Property Organization. WIPO Publication No. 450E/20. ISBN 978-92-805-3176-3.
- World Intellectual Property Organization. (2023). *Global Innovation Index 2023: Innovation in the face of uncertainty* (16th ed.). In S. Dutta, B. Lanvin, L. Rivera León, & S. Wunsch-Vincent (Eds.). https://doi.org/10.34667/tind.48220
- World Intellectual Property Organization. (2023). *Intellectual property offices and sustainable innovation: Implementing the SDGs in national intellectual property systems*. World Intellectual Property Organization. DOI: 10.34667/tind.47937.