

Voices from the classroom- a nuanced analysis of student experiences with Interdisciplinary Design Studies under NEP 2020

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Abstract: *The implementation of the National Education Policy (NEP) 2020 has marked a transformative shift in Indian higher education, emphasizing interdisciplinary studies, particularly in undergraduate design education. This research paper investigates the lived experiences of students engaged in interdisciplinary courses under NEP 2020. The study, conducted at the School of Design within a multidisciplinary private university in Jaipur, Rajasthan, India, explores students' experiences with interdisciplinary courses under NEP 2020. Using a mixed-methods approach, the research combines quantitative data from an online survey and qualitative insights from open-ended questions. The survey included multiple-choice and Likert-scale items to assess students' perspectives, challenges, and achievements.*

The study uncovers how interdisciplinary design studies affect student engagement, learning outcomes, and overall academic satisfaction. By providing a nuanced analysis of student experiences, the research contributes to the discourse on NEP 2020's effectiveness in promoting interdisciplinary education. The findings offer valuable recommendations for educators, policymakers, and institutions, aiming to bridge the gap between policy implementation and student reality in the evolving landscape of Indian design education.

Keywords: *National Education Policy (NEP) 2020, Interdisciplinary studies, Design education, Undergraduate students, Student experiences.*

1. INTRODUCTION:

The National Education Policy (NEP) 2020 represents a transformative framework for India's educational landscape, emphasizing a multidisciplinary approach to learning aimed at fostering holistic development and real-world applicability. This research paper presents findings from a study conducted at the School of Design of a multidisciplinary private university in Jaipur, Rajasthan. It explored student experiences with Interdisciplinary Design Studies programs under NEP 2020, revealing insights into their perceptions, challenges, and outcomes.

Interdisciplinary Design Studies encourage the blending of disciplines to address complex problems, reflecting a move towards more versatile and adaptable educational models. However, the practical implications of this shift on student experiences were not thoroughly examined prior to this study. Through qualitative and quantitative analyses, the research uncovers how students navigate the integration of multiple disciplines, the impact on their learning processes, and the overall effectiveness of these programs in achieving the policy's objectives. By highlighting student voices, the study offers valuable insights into the effectiveness of NEP 2020's interdisciplinary approach and provides recommendations for enhancing the design and implementation of IDS programs.

2. LITERATURE REVIEW:

The integration of interdisciplinary design studies within the framework of the National Education Policy (NEP) 2020 represents a transformative step for higher education in India. This literature review aims to explore student perspectives on interdisciplinary design education, leveraging insights from various studies to present a comprehensive understanding of its impact and potential benefits.

2.1 Interdisciplinary Design Education: Interdisciplinary education, particularly in design, has been lauded for its ability to foster holistic and integrated learning experiences. Carnegie Mellon Design School emphasizes that interdisciplinary courses not only benefit aspiring designers but also those from other fields who seek to harness the power and methods of design (Carnegie Mellon Design, 2020). This approach equips students with essential



skills for effective collaboration with design teams and enhances their appreciation for the value of design in diverse professional contexts. Meyer and Norman (2020) argue that 21st-century design education must adapt to changing technological and social landscapes, promoting creativity and critical thinking (Meyer & Norman, 2020).

- 2.2 The Role of NEP 2020:** The National Education Policy 2020 aims to overhaul India's educational system by emphasizing multidisciplinary and holistic education. This policy supports the integration of design education across various fields, promoting critical thinking and creativity among students (Ministry of Education, 2020). The NEP 2020 envisions a flexible and multidisciplinary curriculum, crucial for preparing students for an interconnected and dynamic world.
- 2.3 Benefits of Interdisciplinary Approaches:** Research highlights numerous benefits of interdisciplinary education. Pritchard (2019) notes that interdisciplinary studies nurture essential mindsets and skill sets in students, preparing them for complex problem-solving and innovation in their future careers (Pritchard, 2019). According to Newell (2001), a theoretical framework for interdisciplinary studies helps in understanding the integrative processes and their impact on student learning (Newell, 2001). The holistic approach of interdisciplinary education is further reinforced by Bandura's theory of self-efficacy, which posits that confidence in one's abilities enhances performance and motivation (Bandura, 1977). Vygotsky's theory of the Zone of Proximal Development underscores the collaborative aspect of learning, suggesting that students benefit from interactions with peers and mentors who provide guidance and support within their developmental reach (Vygotsky, 1978).
- 2.4 Challenges and Considerations:** Despite the evident benefits, interdisciplinary education also faces challenges. Klaassen (2018) identifies issues such as the complexity of coordinating curricula across disciplines and the need for faculty development to effectively teach interdisciplinary courses (Klaassen, 2018). Additionally, Ali (2022) emphasizes the importance of assessment frameworks that accurately measure students' interdisciplinary learning outcomes (Ali, 2022).
- 2.5 Student Perspectives and Experiences:** The adoption of interdisciplinary design studies under NEP 2020 has garnered diverse student responses. A mixed-method research design, incorporating quantitative and qualitative analyses from a Google Forms survey, provides a comprehensive view of student experiences. The survey includes multiple-choice questions, Likert-scale items, and open-ended questions to capture the nuanced perspectives of students.
- 2.6 Impact on Learning Outcomes:** Studies suggest that interdisciplinary education positively impacts learning outcomes. Boix Mansilla and Duraisingh (2007) propose an empirically grounded framework for assessing students' interdisciplinary work, highlighting improved critical thinking and problem-solving skills (Boix Mansilla & Duraisingh, 2007). Wang (2024) explores the use of design thinking for interdisciplinary curriculum design, demonstrating its effectiveness in enhancing student engagement and creativity (Wang, 2024).
- 2.7 The Future of Interdisciplinary Design Education in India:** The future of interdisciplinary design education in India looks promising, with ongoing reforms and initiatives aimed at enhancing its effectiveness. The British Council's report on the future of design education in India outlines strategies for integrating design thinking into the curriculum, emphasizing the need for industry-academia collaboration (British Council, 2016). Jacob (2015) discusses interdisciplinary trends in higher education, advocating for policies that support innovation and cross-disciplinary learning (Jacob, 2015). Additionally, the work of Chettiparamb (2007) and Singh (2015) highlighted the need for a supportive policy framework and a shift towards new humanities in Indian universities to facilitate effective interdisciplinary education (Chettiparamb, 2007; Singh, 2015).

3. OBJECTIVES OF THE STUDY:

The primary objectives of this study were to:

- 3.1 investigate the firsthand experiences of undergraduate students enrolled in interdisciplinary design courses within the NEP 2020 framework.
- 3.2 pinpoint the challenges encountered by students in interdisciplinary learning environments, particularly within design education.
- 3.3 examine how interdisciplinary design studies influence student engagement and learning outcomes.
- 3.4 assess the effectiveness of NEP 2020 in promoting interdisciplinary education within Indian higher education, with a focus on design education.
- 3.5 Offer valuable insights for educators, policymakers, and institutions by amplifying student voices and perspectives, aiding in the enhancement and optimization of interdisciplinary programs in line with NEP 2020 goals.



4. RESEARCH METHODOLOGY:

This research investigates the effects of the National Education Policy (NEP) 2020 on undergraduate students enrolled in interdisciplinary design programs using a mixed-methods approach. Consequently, the study integrates both quantitative and qualitative methods to offer an in-depth analysis of student experiences.

4.1 Participant Selection: The School of Design houses four major departments offering distinct four-year undergraduate programs: Bachelor of Visual Arts (Graphic Design), Bachelor of Design (Fashion Design), Bachelor of Design (Jewellery Design), and Bachelor of Design (Interior Design). For this research study, a Purposive sampling method was employed, specifically targeting first-year undergraduate students who chose minors in departments other than their major program of study. This technique ensured the inclusion of students actively participating in interdisciplinary design studies under NEP 2020. We collected varied experiences and viewpoints from students across different design majors within the School of Design, thereby enhancing the study with a broad range of insights into the effects of interdisciplinary education initiatives.

The breakdown of student numbers by department major and minor is represented in the table below:

Sr. no.	Program Name	Department Major	Department Minor				Total no. of Students
			Graphic Design	Fashion Design	Jewellery Design	Interior Design	
1.	Bachelor of Visual Arts	Graphic Design	0	14	6	30	50
2.	Bachelor of Design	Fashion Design	7	0	15	0	22
3.	Bachelor of Design	Jewellery Design	5	2	0	0	7
4.	Bachelor of Design	Interior Design	39	2	0	0	41
No. of students in interdisciplinary studies =			51	18	21	30	120

Table: 4.1.1. Number of first year students registered for interdisciplinary design courses in the school of Design (Academic Year: 2023-24), at the university.

4.2 Quantitative method: Data were gathered using an online survey conducted through Google Forms, which was distributed to all 120 students. Out of these, 78 students chose to participate voluntarily, resulting in a participation rate of 65%. The survey comprised multiple-choice and Likert-scale questions designed to evaluate students' perceptions and satisfaction with their courses. Quantitative analysis was performed using pie charts and bar graphs to visually represent the distribution of responses.

4.3 Qualitative method: Complementary qualitative data were gathered through open-ended questions within the survey. These questions allowed students to provide detailed accounts of their experiences and challenges with the interdisciplinary curriculum. The responses were thematically analysed to identify common themes and deeper insights into the students' perspectives.

4.4 Integration and Analysis: By combining the quantitative findings from pie charts with the qualitative insights from open-ended responses, the study offers a comprehensive view of how NEP 2020 affects students' learning experiences. This methodological approach ensures a nuanced understanding of both overarching trends and individual experiences, contributing valuable insights into the effectiveness of interdisciplinary design education under the new policy. Ethical considerations were strictly observed, including informed consent and data confidentiality.

5. QUANTITATIVE FINDINGS:

The quantitative analysis of responses from 78 participants (respondents) to Multiple-choice questions and Likert-scale items in the survey questionnaire were analysed in detail and depicted as follows-

5.1 Demographic profile: The survey's demographic profile shows 82% of respondents were female and 18% male, highlighting a predominance of female students. Most respondents (77%) were from Rajasthan, with 23% from outside the state. Representation from the four departments ranged from 58% to 73%, indicating near-equal participation from each department (Table: 5.1.1).

The data is graphically depicted in Figure: 5.1.1, Figure: 5.1.2, and Figure: 5.1.3.



Department Major	Number of respondents (A)	Actual Number of First year Students registered in Interdisciplinary design studies (B)	Percentage of respondent (A/B*100)
Graphic Design	29	50	58%
Fashion Design	16	22	73%
Jewellery Design	5	7	71%
Interior Design	28	41	68%
Total:	78	120	65%

Table: 5.1.1 Demographic representation of department majors.

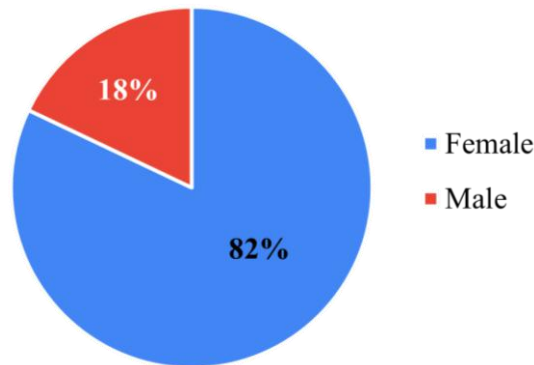


Figure: 5.1.1 Percentage of respondents by gender.

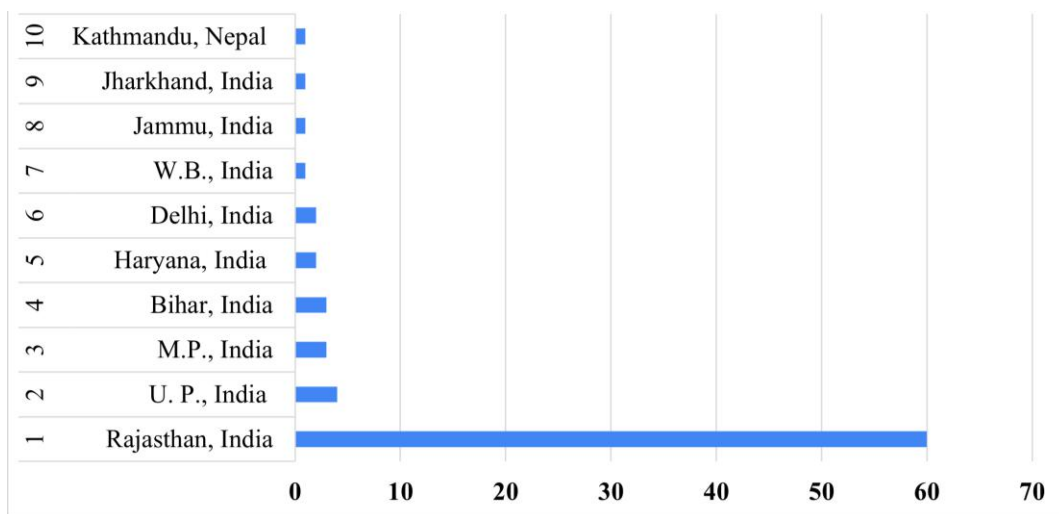


Figure: 5.1.2 Number of respondents by State/Country of home location.

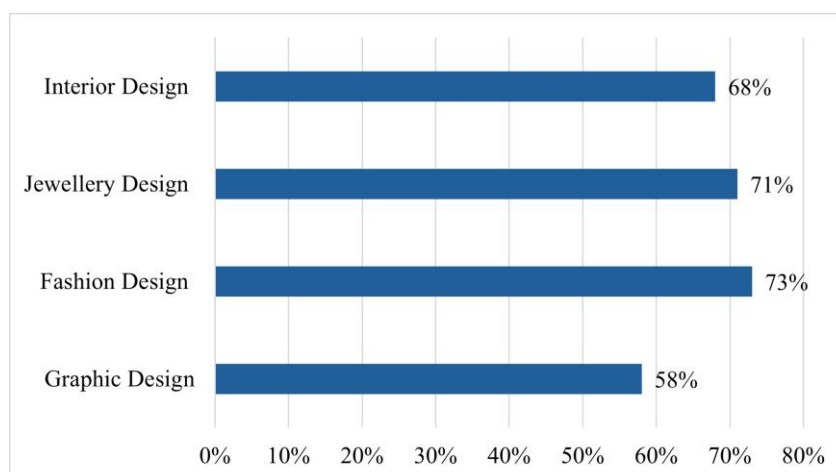


Figure: 5.1.3 Percentage representation of students by department major (number of respondents versus actual number of students registered in Interdisciplinary Design Studies within each respective department).



5.2 Student experiences:

The students were asked to answer various questions that explored the full range of factors related to their perspectives, experiences, and challenges with interdisciplinary design studies. The analysis showed high engagement in interdisciplinary coursework, significantly enhancing critical thinking and problem solving skills. Career prospects and curiosity were the primary motivations for choosing interdisciplinary studies. Time management was identified as a major challenge. The quantitative analysis of specific questions and their responses are illustrated in the following charts.

Q1. What motivated you to choose interdisciplinary studies within your Academic discipline or program?



Figure: 5.2.1 Student’s motivation for selecting interdisciplinary design course(s).

Q2. How would you rate your level of engagement in interdisciplinary coursework?

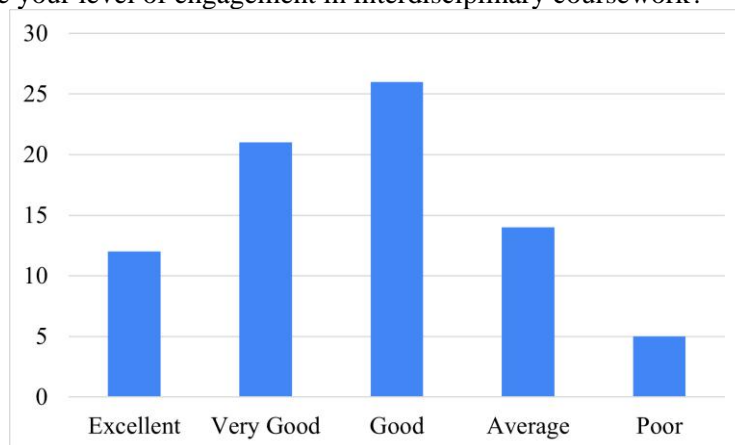


Figure: 5.2.2 Likert-scale rating for level of engagement in interdisciplinary design studies.

Q3. In your opinion, how has interdisciplinary coursework impacted your critical thinking skills and problem-solving abilities?

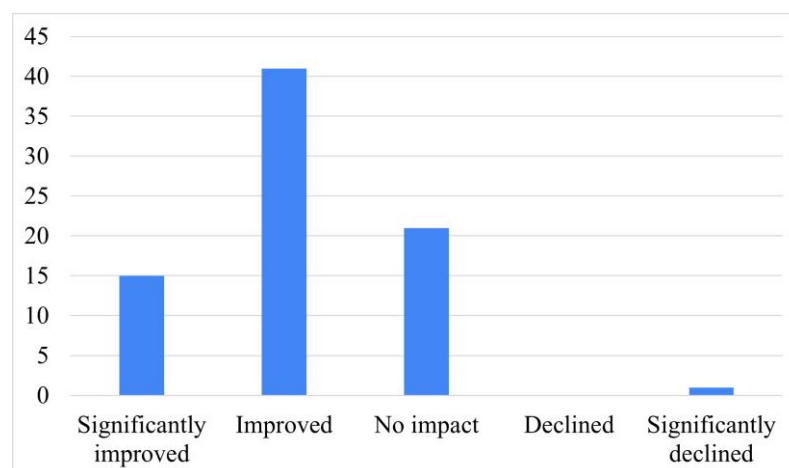


Figure: 5.2.3 Likert-scale rating for impact of interdisciplinary coursework on critical thinking skills and problem-solving abilities of students.

Q4. How satisfied are you with the effectiveness of current interdisciplinary course content in promoting holistic learning?

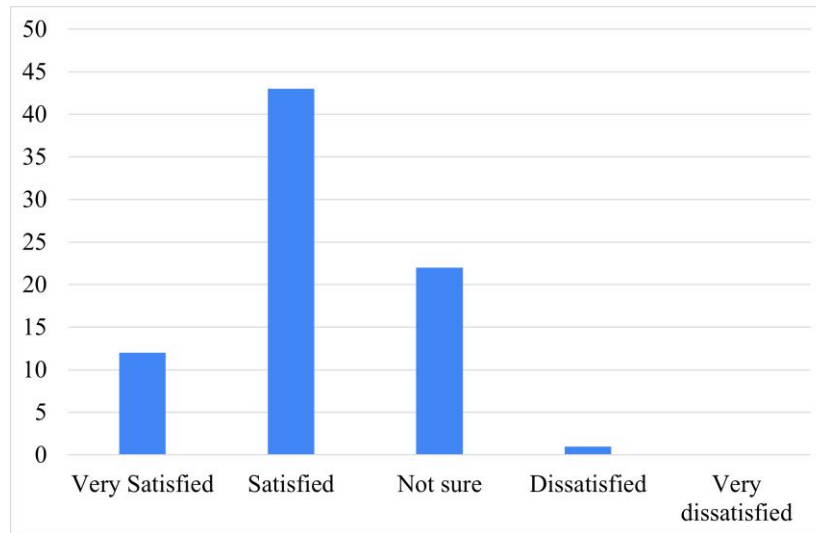


Figure: 5.2.4 Likert-scale rating for satisfaction level of current interdisciplinary courses content in promoting holistic learning

Q5. "Learning is influenced by social interactions with others, particularly more knowledgeable peers (classmates) or adults". Do you agree with the given statement with respect to your interdisciplinary coursework or projects?

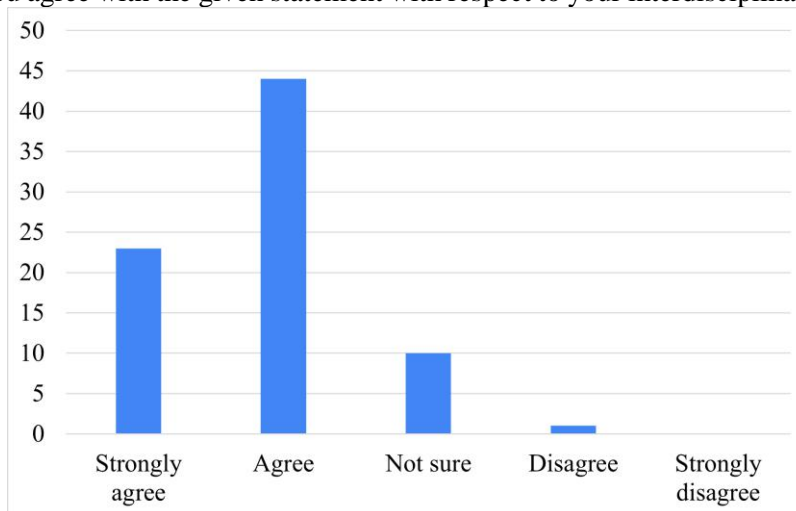


Figure: 5.2.5 Likert-scale rating for learning experiences in interdisciplinary coursework/ projects.

Q6. What difficulties did you face throughout the Interdisciplinary courses?

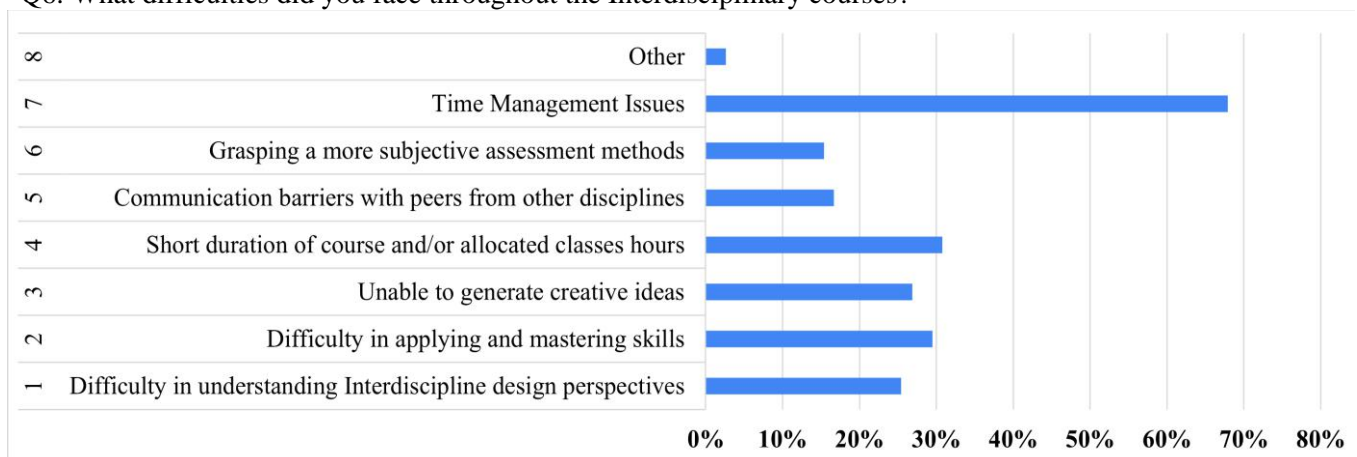


Figure: 5.2.6 Challenges faced by students in interdisciplinary coursework.
 (Students could select more than one option from the provided choices)

Q7. How do you envision the role of interdisciplinary education in your future academic or professional pursuits?

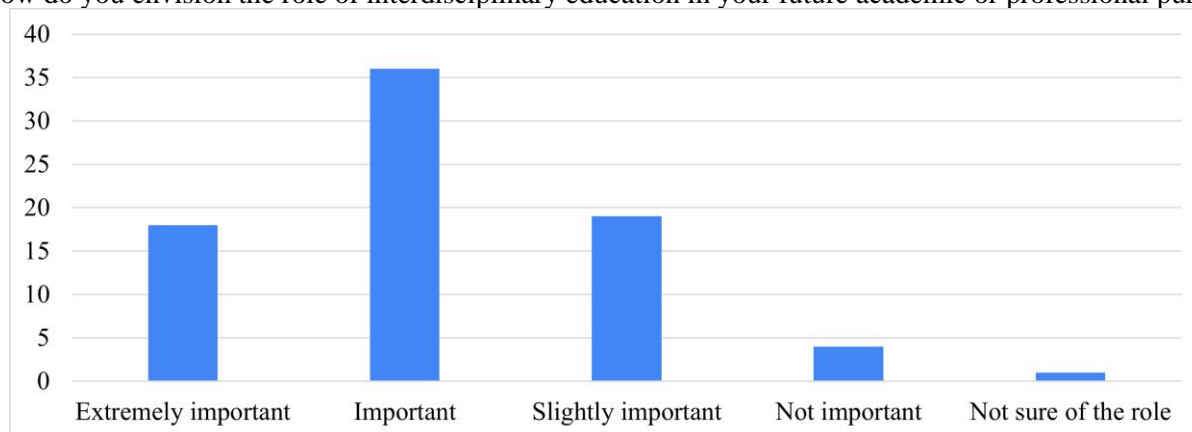


Figure: 5.2.7 Likert-scale rating for the role of interdisciplinary education in future academic or professional pursuits.

6. QUALITATIVE FINDINGS:

The qualitative data analysis of responses from 78 participants to open-ended questions of the online survey, was analysed thematically to explore student experiences with Interdisciplinary Design Studies under India's National Education Policy (NEP) 2020. By clustering similar responses and extracting common patterns, this analysis identified key themes, demonstrating how qualitative findings reflect the nuanced experiences and perceptions of the students. The following three major themes were identified from the qualitative data-

6.1 Benefits of Interdisciplinary Studies: Students highlighted several advantages of interdisciplinary approaches-

- 6.1.1 Enhanced Creativity and Skill development:** Many students felt that integrating different disciplines fostered creativity. "It serves as a way for us to express our unique styles and creativity in our projects," said one participant. Several respondents noted that the variety of subjects helped broaden their skill sets. Another noted, "These courses provide me a positive expression to develop my skills better."
- 6.1.2 Holistic learning:** Students appreciated the holistic education provided by interdisciplinary studies. "It has helped me become more versatile and adaptive," remarked one participant. Another commented- "It helped in other subject's assignments."
- 6.1.3 Critical thinking:** The exposure to multiple disciplines was credited with enhancing critical thinking. "It helped in seeing things from different perspectives," one student noted. Another observed, "I have learnt a different form of design through my interdisciplinary course."
- 6.1.4 Collaborative learning:** Some students valued the collaborative nature of interdisciplinary studies. "Working with peers from different disciplines has enriched my learning experience," a participant stated. Another mentioned, "In a mixed class of art and science, our team designed an eco-friendly sculpture that changes color with air quality, merging creativity with environmental awareness."
- 6.1.5 Teaching Methods and Approaches:** Teaching methods and approaches also elicited overall positive responses. Interactive and hands-on teaching methods were praised. "I like how our teacher teaches us; her way of teaching is very interactive and effective," one student said. Another added, "Practical examples help a lot to understand the concept." Yet another student responded by saying, "Doing more practical work made me understand it smoothly as we students do the work ourselves."
- 6.1.6 Feedback and support:** Students valued constructive feedback and support. "one-on-one discussions with the teacher helped me improve my mistakes," one student commented. Another added, "Supportive faculty makes a big difference."

6.2 Challenges in Interdisciplinary Learning: Despite the benefits, students also faced few challenges-

- 6.2.1 Integration issues:** Some students found it difficult to integrate concepts from various disciplines. "Sometimes it is hard to see how different subjects relate to each other," a participant noted. Another added, "Connecting concepts from different fields can be confusing."
- 6.2.2 Time Management:** Balancing multiple subjects posed time management challenges. "It involves additional syllabus, leading to challenge in time management," a participant said. Another echoed,



“Throughout the course, I've struggled to keep up with the assignments. There's not a single day when we don't receive new assignments or have free time.”

6.2.3 Assessment Methods: Students raised concerns about assessment methods. A participant noted, “The existing evaluation methods do not accurately capture our interdisciplinary learning.” Another student added, “Exams are not well-suited to evaluate our interdisciplinary knowledge.”

6.3 Suggestions for Curriculum Improvement: Students offered various suggestions for enhancing the curriculum-

6.3.1 More Practical Classes: There was a call for more practical and hands-on classes. “More practical classes would help us understand how to apply interdisciplinary concepts in real-life scenarios,” suggested one participant. Another said, “It should be more practical than theory.”

6.3.2 More Workshops and Seminars: Some students suggested interdisciplinary seminars. “It can be more interesting with more workshops,” noted one participant. Another said, “Interdisciplinary seminars can provide valuable insights.”

6.3.3 Mentorship Programs: Mentorship programs were recommended. “Mentorship from experienced professionals would guide us better,” remarked one student. Another added, “Having mentors from different disciplines would be very helpful.”

7. SUMMARY OF FINDINGS AND CONCLUSION:

The study on student experiences with Interdisciplinary Design Studies under NEP 2020 reveals a comprehensive understanding of the benefits and challenges of this educational approach.

Quantitative findings indicate a strong female majority among respondents and a significant preference for Graphic and Interior Design majors. Career prospects and curiosity are the primary motivations for pursuing interdisciplinary studies. Engagement levels are generally positive, with a notable impact on critical thinking and problem-solving skills. High satisfaction with course content and beneficial social interactions are evident, though time management remains a significant challenge. Most students see interdisciplinary education as crucial for their future academic and professional success.

Qualitative analysis complements these findings, presenting a balanced view of the advantages and challenges. Students appreciate the creative freedom and skill-building aspects of interdisciplinary studies but face major difficulties in time management. They call for more practical, workshop-oriented, and effective assessment methods. In conclusion, it can be said that the interdisciplinary approach has enriched their learning, fostered holistic development and broadened their design perspective. Addressing the identified challenges and implementing the following recommendations could further enhance the effectiveness of interdisciplinary education, aligning it more closely with the goals of NEP 2020.

8. RECOMMENDATIONS:

Based on the findings, the following recommendations are proposed to enhance the effectiveness of interdisciplinary design studies-

8.1 Implement Practical Assessment Methods: Introduce project-based assessments and real-world case studies to accurately measure interdisciplinary knowledge and skills.

8.2 Enhance Resource Allocation: Provide specialized labs, workshops, and mentorship programs to support interdisciplinary learning.

8.3 Promote Faculty Collaboration: Encourage collaboration among faculty from different disciplines to bridge integration gaps.

8.4 Improve Time Management Support: Address time management challenges through better course scheduling and providing time management workshops and tools.

8.5 Increase Flexibility in Coursework: Offer more flexible course options and electives to allow students to tailor their learning experiences.

Aligning these recommendations with NEP 2020's vision for a holistic and flexible education system will enhance the effectiveness of interdisciplinary design studies. By fostering creativity, critical thinking, and practical skills, these improvements will help create an educational environment that meets the evolving needs of students and prepares them for the challenges of the contemporary professional landscape, in line with the goals of NEP 2020.

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