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A Case Study on the Effectiveness of Site Visit-Based Learning in Civil Engineering Polytechnic Education

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Abstract: ***This study explores the impact of practical site visits on the academic and professional development of Civil Engineering students in a polytechnic setting. Based on observations and student feedback over three academic years, including visits to Shahpurkandi Hydro Power Project (Pathankot), a multi-storey construction site behind Haveli, Phagwara (managed by AGI Infra Ltd.), and various highway construction sites in and around Ludhiana and Phagwara (including GT Road upgrades near Jalandhar Bypass), the paper concludes that on-site exposure greatly enhances conceptual clarity, technical vocabulary, and industry readiness.***

I. INTRODUCTION

Engineering education, especially in core fields like Civil Engineering, is incomplete without field exposure. Site visits complement theoretical learning by allowing students to observe real-world construction processes. Over the past three years, our department has organized multiple visits to key infrastructure projects to strengthen this link.

II. OBJECTIVES

1) To bridge the gap between classroom knowledge and field experience.
2) To expose students to real construction environments and terminology.
3) To improve student confidence and communication through interaction with site engineers.

III. METHODOLOGY

A structured plan was followed over three academic years (2022–2024). Students were taken to different sites:
1) Shahpurkandi Dam Hydro Power Project (Pathankot) – March 2024
2) AGI Infra Ltd. multi-storey site behind Haveli, Phagwara – 2023
3) Road widening project on GT Road, near Jalandhar Bypass and Phillaur, Ludhiana – 2022
During these visits, students interacted with site engineers, recorded observations, and submitted post-visit feedback using Google Forms.

IV. OBSERVATIONS AND RESULTS

The feedback revealed that over 90% of students found site visits extremely helpful in understanding concepts like pile foundations, concrete curing, earth retaining structures, and reinforcement techniques. Many reported that it was easier to relate theory with visuals post-visit.
A few notable student quotes:
• "Seeing real scaffolding helped me understand IS 2750 drawings better."
• "I never understood slump test until we watched it on-site."
• "Hydropower layout was much clearer after our Pathankot trip."

V. CONCLUSION

Site visits serve as a critical educational tool in Civil Engineering, especially at the diploma level. Real-time exposure not only increases student confidence but also helps in visualizing and contextualizing classroom learning. We recommend that every polytechnic curriculum must mandate at least three field visits per year.

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VI. SUGGESTIONS

- Introduce credit-based assessment for site visits.
- Include engineer-led sessions on-site.
- Encourage short on-site quizzes or report writing after every visit.

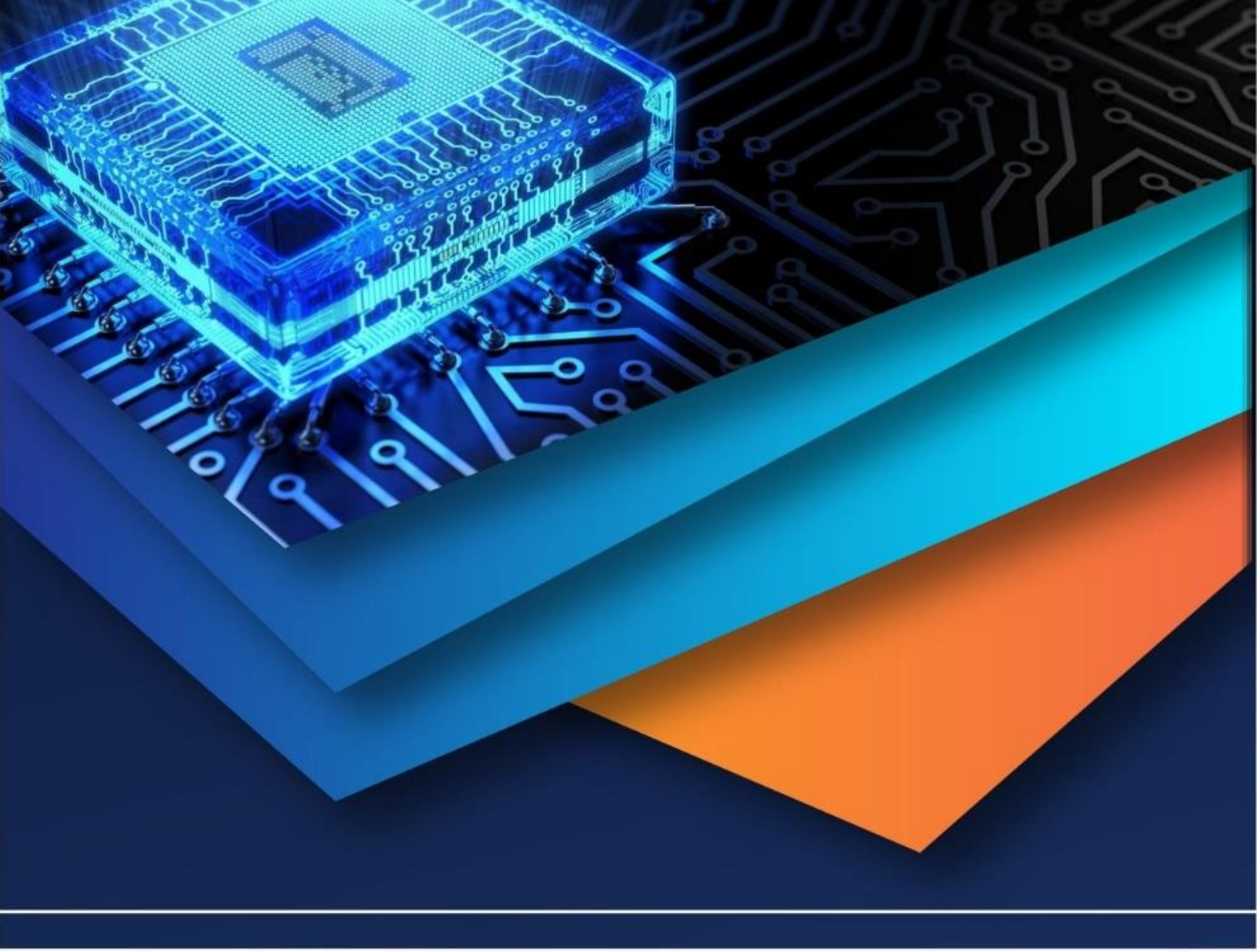
VII. AUTHOR DECLARATION

I, Rahul Verma, declare that this research paper is my original work and has not been published or submitted elsewhere. All the references and data presented have been duly acknowledged.

VIII. ACKNOWLEDGEMENT

I would like to thank the staff and management of Ramgarhia Polytechnic College, Phagwara for facilitating these site visits and encouraging applied learning. Special thanks to AGI Infra Ltd. and Shahpurkandi Project staff for hosting our students.

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