Comparative Analysis of Student Performance in Offline vs. Online Internships: Impacts on Skill Development, Professional Growth, and Academic Outcomes

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Abstract- **Initial findings indicate that while offline internships offer more opportunities for hands-on experience and direct mentorship, online internships provide greater flexibility and accessibility, allowing students to balance academic and professional commitments more effectively. Quantitative analysis reveals no significant difference in overall task completion rates between the two groups. However, qualitative feedback suggests variations in skill acqui- sition and professional networking opportunities, with offline interns reporting higher satisfaction in these areas.**

This research investigates the comparative impact of offline and online internships on student perfor- mance, with a focus on skill development, profes- sional growth, and academic outcomes. The study employs a mixed-methods approach, combining quantitative data from student performance metrics and qualitative insights from surveys and interviews. A cohort of 600 postgraduate students, from two batches of a postgraduate professional program, who participated in offline and online internships, was analysed over a period of six months. Key performance indicators, including task completion rates, supervisor evaluations, and self-reported skill acquisition, were assessed.
The study concludes that both offline and online internships have unique advantages and limitations. Offline internships tend to foster practical skills and direct professional relationships, while online internships excel in providing accessibility and flexibility. Recommendations are provided for educational institutions and employers to enhance the structure and support of both internship modalitiesto maximize student outcomes. Future research should explore long-term career impacts and sector-specific performance differences to further elucidate the efficacy of each internship format.

Keywords—**Internships,Online, Offline, Professional Courses, Skills development**

JEET Category—**Choose one: Research, Practice, or Op-Ed. (Please note, Op-Eds are by invite only. Refer to the Paper Submission and Review Guidelines for more details.)**

I. INTRODUCTION

In the educational landscape, acquiring criticaland logical thinking skills and problem-solving abilities is imperative for students pursuing professional courses[2], which help bridge the gap between the change of life stage from a student to a professional. When students enter the professional environment, they must adapt and implement what they have learned in this new world of work, which they often find challenging. By integrating internships into the academic curriculum, students can be better skilled in implementing theoretical knowledge at their workplace [1]. The academic internships act as a bridge between

theory and practice [3] and help in improving various skills like logical thinking and decision- making, which, in a way, empower students to dissect, analyze, and resolve complex issues [4]. The development of such skills enhances students' professional growth and experience. Hence, internship programs are a tool for making students experience practical work[5]. In today's competitive business landscape, companies need graduates with the required practical knowledge and skills that are deployable from day one [6]; internships act as a way to develop such graduates. Internship programs enable students to be trained and help companies save training and supervision costs [7]. Internships also help the students gain practical experience, enhance their resumes

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[8], and build professional relationships [9]. In today's digital world, educational institutions are also not untouched, and online internships have become a new thing especially post COVID 19 where they were forcibly thrown into online mode. However, the educational institutes could struggle and do well despite challenges of internet connectivity and infrastructure [10]. A plethora of Research has been conducted on student development in professional education, internships, and employability, but whether online internships are at par with offline internships in developing students on all the aspects mentioned above has not been researched much. The Research on the effectiveness of online versus offline internships highlights several key findings. While online internships are viewed positively in terms of flexibility, skill development, and employability enhancement [9,11], they are perceived to lack the immersive environment and face challenges related to communication and organizational integration[11]. On the other hand, offline internships are more effective in enhancing theoretical knowledge and environmental perception, while online intern- ships are beneficial for cultivating analytical skills [26]. Pandey& Pabalkar
[27] in their study found that the evaluations in offline internships are wider as compared to online internships. The shift towards teleworking due to the COVID-19pandemic has accelerated the adoption of online internships, revealing a gap in communication between interns and supervisors in virtual settings [12]. Despite the benefits of virtual intern- ships in terms of flexibility and cost-effectiveness,

challenges such as establishing and maintaining work relationships persist [12.13] This Research highlights the need for further exploration and development of strategies to bridge the gap between online and offline internship effectiveness. The present study aims to fill this gap by analyzing the outcomes of online and offline internships in terms of student skills development, professional growth, and academic outcomes.

Academic literature comparing online and offline internships is scarce online AND offline AND internships from the student development lens. A search of online AND offline AND internships on SCOPUS revealed only 26 documents which were in the medical field generally and not directly assessing the aspects the authors intended to study.A same keyword search on Web of Science revealed 13 documents with only one document a little closer to the current study, reflecting a huge gap in literature. The following Table no. 1 presents the findings and the methods used for the articles screened and shortlisted from a scientific search on Web of Science, SCOPUS, and EBSCO databases. These studies highlighted the pros and cons of online or virtual internships versus offline internships. The analysis of these studies reconfirms the gap in studies focusing on student development. All these studies' findings are process-oriented.

Hence, the need for a research study focusing on the outcomes in terms of student development takes priority.

1. INTERNSHIPS AND PROJECT-BASED LEARNINGS

Summer internship programs are an integral part of a professional school curriculum. Professional programs like engineering, architecture, etc., aim to promote the employability of young learners. The curriculum is designed to equip students with theoretical knowledge of business and economics. They are also provided exposure to multi discipline courses to have a broad range. The internship duration provides an opportunity to practice theoretical concepts and get first-time exposure to the managerial job. These project-based learning experiences enable students to be engaged with corporations and, with due diligence, make a research-based decision.

Covid 19 pandemic disrupted academics and businesses. It also hits on the competencies students usually develop in a personal internship. The new normal shifted work to online and virtual modes, allowing students to resume internships online or in hybrid mode. Corporates and academia are welcoming the change with full arms. It prepares the future workforce for the future norms of working. More than the work, the mode of work was relevant in engaging students to pursue internship experience. The internship is critical in learning practical ways

of functioning in a corporate, interacting with people, knowing the work culture, following the systematic ways to approach problem-solving, and gearing them to be employable.

The study compares students' learning experiences with online and offline internships. Projects have become an integral part of internships in higher educa- tional institutes; specifically, professional education graduates are expected to work on an industry problem to provide a technical solution and document the same in terms of a project, offering experiential learning opportunities that help bridge the gap between theory and practice. Internships form a structured component of the curriculum to provide a temporary hands- on corporate experience to students in a related field of study. They provide an opportunity for the students to apply the classroom knowledge in a real-world setting. Research shows that internships are pivotal in enhancing technical and soft skills, significantly improving students' communication and teamwork abilities, and also helping their network development [20]. Students who work on projects during their internships are more likely to receive pre-placement offers or employment opportunities [17,22,15] as project- based learning allows students to take ownership of their learning, leading to increased engagement in internships [16]. however, project- based learning has its own lacunae, like the requirement of significant time and effort [19],

complexity in the performance assessment of students [14], and a sudden increase of autonomy which students are not used to handle [23]. Despite these challenges, project-based internships are proven experiential learning methods in education.

II. METHODS

The present study intended to compare the impact of online and offline internships on Skill Development, Professional Growth, and Academic Outcomes using a survey tool consisting of closed and open- ended questions. The researchers employed a mix of quantitative and qualitative analytical tools to assess the effectiveness of the online internship vis à vis offline internships.

III. RESEARCH DESIGN

This study has adopted a cross-sectional survey design to collect data from students pursuing professional education in their final year internships. The survey questionnaire included questions on skill development, employability, career preparedness, the practice of theory learned, and the quality of experiences. The data was collected consecutively for three years from two batches, who pursued internship offline, and one batch during COVID-19, who pursued internship offline. The qualitative and quantitative studies were simultaneous being embedded in the same questionnaire with two different sections.

IV. POPULATION AND SAMPLE

The target population for this study consisted of postgraduate students pursuing professional courses who have completed their internships using project-based learning. The sample was drawn in a way that ensured the findings' diversity and generalizability. The stratified sampling method was used to select participants, and a total sample size of 900 was taken into account. The sample size was calculated using power analysis to ensure the statistical power needed to identify significant effects. The strata were districts in western Maharashtra and then from each strata quota sampling was used to get the sample size of 900. The sample selected were students who had learnt through both offline and online modes during there two /fouryears of education.

V. DATA COLLECTION

A structured questionnaire was developed to measure the critical variables like the demographic profile, internship experience in terms of duration, type (with/without stipend), tasks performed, and perceived quality of the project. Self-assessment and academic assessments of technical and soft skills before and after internship, career readiness self-assessments and employability in terms of Pre-placement offers received post internships. The questionnaire was pilot-tested with a small group of students to ensure the items' clarity, reliability, and validity. The feedback received from the pilot test was used to refine the questionnaire. The final questionnaire was distributed using Google Forms to the selected sample respondents. An email invitation to complete the survey with the required guidelines and follow-up reminders was shared to increase the response rate. The qualitative data was a part of the same survey collected using open ended questions covering the aspects not reflected in the quantitative data collection.

TABLE I
SUMMARY OF FORMATTING STYLES

Authors	ARTICLE TITLE	Findings	Methods Used
Mathew Nicho, Tarannum Parkar, S. Girija	"Evaluating Onsite and Online Internship Mode Using Consumptive Metrics"	The research paper evaluates onsite and online internship modes using consumptive metrics. Online internships show reduced effectiveness in a training environment, knowledge gained, and career advancement compared to onsite internships.	Qualitative Research with inductive data analysis Content analysis of internship reports for evaluation
Xumei Zhang, Ruyuan Liu, Wei Yan, Yan Wang, Zhigang Jiang, Zhaohui Feng	"Effect Analysis of Online and Offline Cognitive Internships Based on the Background of Engineering Education Accreditation"	Offline internships enhance theoretical knowledge and environmental perception more than online internships. Online internships help cultivate analytical skills and aid in understanding knowledge and career planning.	GAD Model CIPP Model
Tai Metzger	"How to improve remote internships : an intern's perspective"	Remote internships offer flexibility and accessibility but lack in-person networking and mentorship. Utilize technology, set clear deadlines, establish communication modes, promote networking, allow observation, and seek feedback for improvement.	
Tauno Tepsa, Maisa Mielikäinen, J. Angelva	"Perceptions and experiences of online internship"	Online internships offer location-independent opportunities, enhancing cooperation between universities and industry. Challenges include project management. Offline internships are traditional but lack global reach and flexibility The study indicates that traditional internships are perceived to be significantly more effective than online internships for Medical Technology students regarding various learning aspects.	Qualitative Research
Charlene Mae O. Yu, Denise Rhea J. Carton, Elaiza Claire V. Cruz, Zeena Millen H. Fagut, Leigh Ann C. Tanpo, Maria Samantha Kathleen N. Tio, Euvy Kate M. Yap, Ruby G. Meim	"A Quantitative Study on the Perceived Learning Effectiveness between the Online and Traditional Internship of Medical Technology Students"		Survey questionnaires through Google Forms were distributed to the respondents. Quantitative analysis using the Mann-Whitney U-test was conducted.
Amy Irwin, Joy Perkins, Leah Luise Hillari, Darja Wischerath	"Is the future of internships online? An examination of stakeholder attitudes towards online internships."	Online internships are perceived positively for enhancing employability, offering flexibility, and skill development. However, concerns include communication, isolation, and	Mixed-methods online study Quantitative responses to internship vignettes and open-ended

VI. DATA ANALYSIS

The quantitative data was analysed using SPSS, while the qualitative data was analyzed manually and also using NVIVO, a qualitative dtata analysis software. There was no missing data as care was taken to get the questionnaire filled completely through constsnt reminders and personal visits.

Ethical considerations
The researchers adhered to the ethical guidelines for Research involving human subjects and took informed consent from all respondents to ensure that they were aware of the purpose of the study, their right to withdraw at any time and trust the confidentiality of
  their responses.

Model Involved in Study- "CIPP-Based Evaluation Model"

The "CIPP or context, input, process and product" Model is a well-known approach for evaluating the student's perception of a desired program. As an evaluation model, CIPP focuses on evaluation with program decision-making, which helps in achieving the objective of the present Research, where the researchers compare the online and offline modes of internships to assess the outcomes and make a decision henceforth for designing future internships.

VII. FINDINGS AND DISCUSSION

According to the CIPP Model, the researchers' introduced the objectives, expectations, project requirements, and quality of the internship during all three stages, before the start of the internship, during and at the time of final evaluation. The four indices of evaluation and the survey items are outlined in the following Table no. 2:

Reliability Analysis

Cronbach's alpha was calculated using SPSS and is depicted in the following table to check the scale's reliability after pilot testing. A value of Cronbach's alpha greater than 0.7 indicates that the item is highly reliable (Taber, 2018). The obtained value of Cronbach's alpha for each item and a total Cronbach alpha indicates and confirms the high reliability of the questionnaire items developed (Table no. 3)

The questionnaire additionally had some open- ended questions, which, on analysis, revealed that the online and offline internships were equally good in terms of learning and career development perspectives.

To quote *" I found that the online internship was not very different from offline one in context of learning aspect as it enitirely depends upon you as learner and not the mode."*

However, in offline internships, networking opportunities and developing interpersonal relationships to influence employability prospects were higher than in online internships.

One of the student had mentioned "*During my online learning exercises I used to feel secluded as the interactions were the mentors and not with other learners, but during the onsite internship, I could interact with peers and customers too.*"

However, the pre-placement offers received by students (27% in offline internships and 23.5% in online internships) revealed significantly less difference in employability as an outcome. At the end of the professional course all 100% students were placed, which indicates that the academic outcomes were reasonable enough to enable them to fetch a suitable placement.

The findings regarding students' perception of online Vs. Offline internships based on the CIPP-based evaluation reveals that students perceive offline internships better as compared to online internships for three input criteria i.e., The online and offline internships achieved the desired objectives, The design of internship program (Online/Offline/Hybrid) is good and should be continued and, the internship (online/offline/hybrid) was exciting and motivated me to learn as the significance level obtained for these criteria during t-test is > 0.05. These findings align with the previous studies [25]. The students agreed of achieving similar outcomes for all other items of CIPP evaluation as the t-value significance in all other item scales is < 0.05.

VIII. CONCLUSION AND RECOMMENDATIONS

The comparative analysis of student perceptions of online versus offline internships reveals nuanced insights into their effectiveness in learning and career development. While both formats were regarded as equally beneficial for learning and career growth, offline internships provided superior networking opportunities and fostered interpersonal relation-ships, which are crucial for enhancing employability prospects. Despite these differences, the relatively close percentages of pre-placement offers indicate that both formats are similarly effective regarding employability outcomes. The successful placement of all students by the end of their professional courses further underscores the adequacy of the academic outcomes facilitated by both types of internships. IN THE CONTEXT OF THE CIPP (CONTEXT, INPUT, PRO- CESS, PRODUCT) EVALUATION MODEL, STUDENTS PREFERRED OFFLINE

internships over online ones to achieve desired

objectives, design the internship program, and maintain interest and motivation to learn. These perceptions were statistically significant, aligning with findings from previous studies (Zafar et al., 2020). However, for other evaluation criteria, students reported comparable outcomes for both formats, indicating that the core learning objectives were met irrespective of the delivery mode.

IX. RECOMMENDATIONS

a. *Hybrid Internship Programs:* Institutions should consider developing hybrid internship models that combine the strengths of both online andoffline formats. This approach can maximize learning opportunities, flexibility, and accessibility while also providing valuable networking and interpersonal skill-building experiences.

   a. *Enhanced Networking Opportunities:* Institutions and employers should create more structured networking opportunities for online internships. Vir- tual networking events, mentorship programs, and collaborative projects can help bridge the gap in interpersonal relationship-building observed in offline internships.

   b. *Continuous Program Evaluation:* Regular assessment and feedback mechanisms should be implemented to evaluate the effectiveness of both online and offline internships. Using frameworks like the CIPP model can ensure that the programs meet their objectives and adapt to the evolving needs of students and industries.

   c. *Support and Resources:* Providing adequate support and resources for both online and offline internships is essential. This includes ensuring access to necessary digital tools for online internships and offering career services and professional development workshops to enhance employability.

   d. **Focus on Employability Skills**: Internship programs should explicitly focus on developing key employability skills, such as communication, teamwork, and problem-solving, which are critical in both online and offline environments. Tailored training sessions and reflective practices can help students recognize and articulate these skills to potential employers. By implementing these recommendations, educational institutions can enhance the effectiveness of their internship programs, ensuring that students receive a comprehensive and enriching experience that prepares them for successful careers. Further Research should continue to explore the long-term impacts of these experiences on career trajectories and professional development, providing deeper insights into the optimal design and delivery of internship programs.

TABLE II
SUMMARY OF FORMATTING STYLES

EVALUATION INDEX	Item
Context	The online and offline internships achieved the desired objectives. The outcomes of the internships are aligned with the recruiters expectations. The environment of the internship companies was conducive for the desired practical exposure.
Input	The companies visiting the campus for internship recruitment were professional and should be invited for a revisit. The internship program design (Online/Offline/Hybrid) is good and should be continued. The duration of the internship was reasonable to achieve the outcomes The internship was adequately planned and guided
Process	The weekly trackers were a good way to plan the internships The various phases of internship were well organized The internship(online/offline/hybrid) was exciting and motivated me to learn.
Product	The internship(online/offline/hybrid) enhanced my understanding of theoretical concepts. The internship(online/offline/hybrid) helped me plan my career.

Table III
The Cronbach Alpha of reliability analysis and t-test results

I. Survey Item	Cronbach's Alpha	Input Wise Average	Overall	Sig.
The online and offline internships achieved the desired objectives	0.759			0.258
The outcomes of the internships are aligned with the recruiter's expectations	0.785	0.772		0.006
The environment of the internship companies was conducive for the desired practical exposure	0.914			0.02
The companies visiting the campus for internship recruitment were professional and should be invited for a revisit.	0.783	0.856		0.0312
The internship program design (Online/Offline/Hybrid) is good and should be continued.	0.871			0.127
The duration of the internship was reasonable to achieve the outcomes	0.716		0.798	0.009
The internship was adequately planned and guided	0.802	0.748		0.043
The weekly trackers were a good way to plan the internships	0.711			0.026
The various phases of internship were well organized	0.765			0.001
The internship (online/offline/hybrid) was interesting and motivated me to learn	0.912			0.149
The internship (online/offline/hybrid) enhanced my understanding of theoretical concepts	0.84	0.819		0.007
The internship (online/offline/hybrid) helped me plan my career	0.705			0.061

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