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A Study on Programming Skills and Employability among it Students

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Abstract: *Programming knowledge is an important part of preparation for many roles in the Information Technology (IT) sector. However, students' confidence, opportunities to practise, project exposure and preparation for recruitment may differ. This study examines programming-related experiences and perceived employability among IT students, with attention to coding confidence, practical learning, placement preparation and barriers to skill development. Primary data were collected from 100 respondents through a structured Google Forms questionnaire. Responses were summarized using counts and percentages. The results show a gap between recognizing the value of programming and feeling prepared to demonstrate skills during recruitment. The largest group rated its programming ability as average (36%), while 56% reported very low confidence in technical interviews. Lack of time was the most frequently selected programming-learning challenge (36%), and 45% identified programming training as the support most needed for IT placements. The results suggest that regular practice, project-based learning, structured training and mock interviews may help students strengthen their preparation. The findings represent respondents' self-reported views and should not be interpreted as a direct measure of actual employment outcomes.*

Keywords: Programming Skills, Employability, IT Students, Placement Preparation, Technical Interviews, Project Experience, Survey Research

I. INTRODUCTION

IT employers recruit for a range of roles that may require programming, logical reasoning, debugging, problem-solving and the ability to apply technical knowledge to practical tasks. Classroom learning gives students a foundation, but independent practice and project experience are also important ways to develop and demonstrate those abilities. Students may therefore have different levels of confidence even when they have studied similar subjects. This paper focuses on how IT students assess their programming skills and employment readiness. It considers coding practice, project experience, internships, technical-interview confidence and the difficulties students report while learning programming. The aim is not to claim that programming alone determines employability, but to understand how respondents view its contribution alongside practical experience and placement preparation.

II. OBJECTIVE OF THE STUDY

- To study students' self-reported programming skills and confidence.
- To understand students' programming practice habits and project experience.
- To examine students' perceived preparation for IT placements and technical interviews.
- To identify the major programming challenges faced by students.
- To identify the skills and support students consider important for improving employability.

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III. LITERATURE REVIEWS

1. Employability Skills among Information Technology Professionals (Misra & Khurana, 2017) Misra and Khurana highlighted the importance of technical, personal, social, and professional skills for employability in the IT sector. Their study emphasized the need to bridge the gap between educational knowledge and industry requirements.
2. Research on the Relationship between College Students' Employability and IT Skills Training (2022)
This study examined the relationship between IT skills training and employability. It highlighted the importance of technical knowledge, practical abilities, teamwork, and software development skills for improving students' employment opportunities.
3. A Systematic Literature Review of Soft Skills in Information Technology Education (Mohammed & Ozdamli, 2024)
Mohammed and Ozdamli emphasized the importance of communication, collaboration, and problem-solving skills for IT graduates. Their study recommended combining technical education with soft-skill development to improve employability.

III. RESEARCH METHODOLOGY

Scope of the Study

The study focuses on programming skills and employability among IT students. It examines programming abilities, practice frequency, project experience, technical interview confidence, and IT placement preparation. The study is based on 100 responses collected through a Google Forms questionnaire.

Limitations of the Study

The study is limited to the responses of 100 participants, which may not represent all IT students. The findings are based on self-reported information. Since geographical locations and institutional affiliations were not collected, the results cannot be compared across specific regions or institutions.

IV. DATA INTERPRETATION

The following graphs are based on the 100 responses in the supplied spreadsheet. Each graph shows the number of respondents in each answer category. Percentages are calculated from the response counts. The interpretation below each graph describes the pattern shown by the data.

Graph 1: Self-Rated Programming Skills

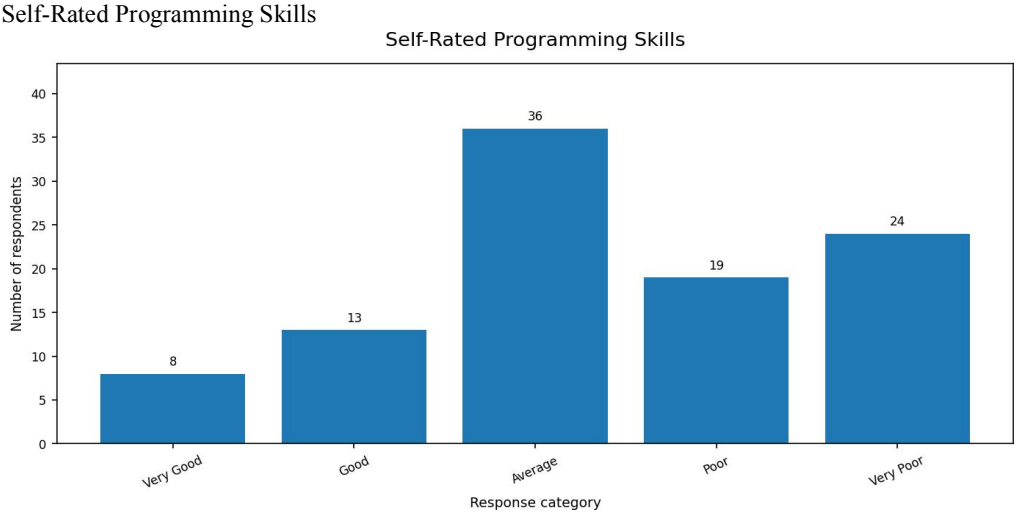


Figure 1: Self-Rated Programming Skills (n = 100)

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Interpretation: The most common response was "Average", selected by 36 respondents (36.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

Graph 2: Programming Practice Frequency

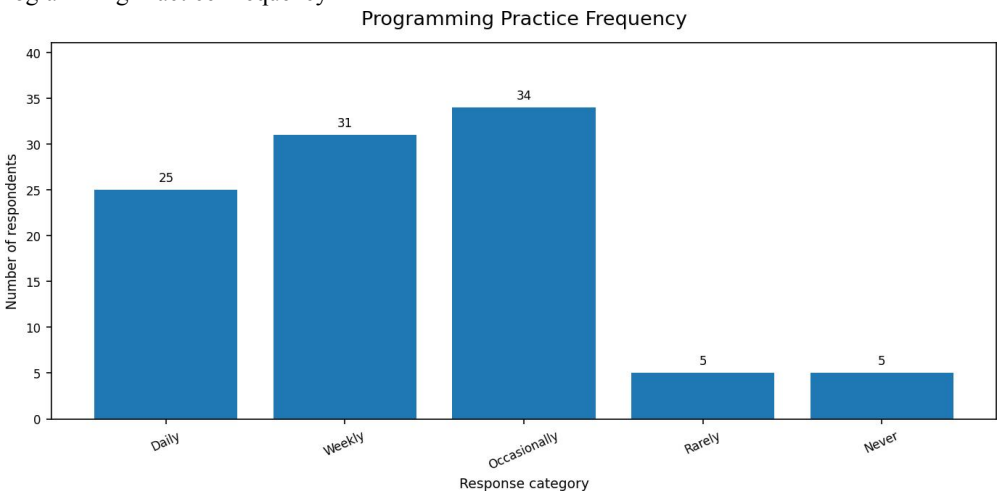


Figure 2: Programming Practice Frequency (n = 100)

Interpretation: The most common response was "Occasionally", selected by 34 respondents (34.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

Graph 3: Programming Project Experience

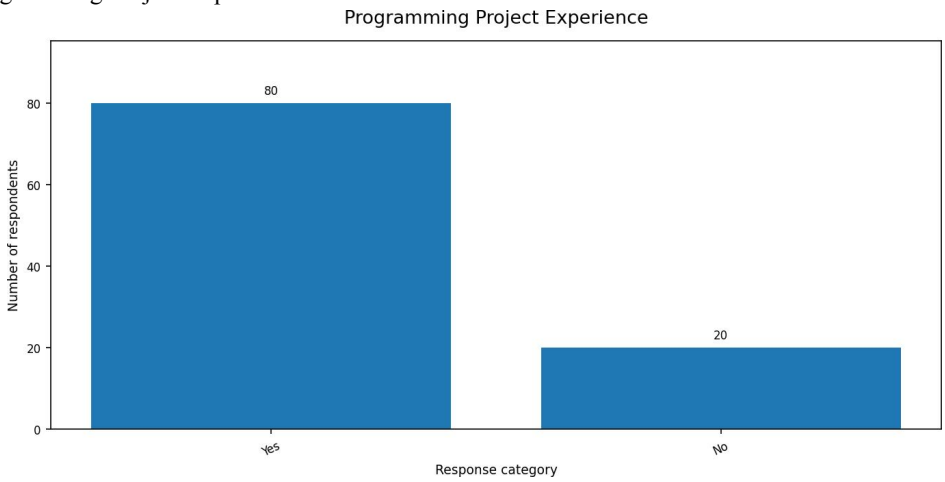


Figure 3: Programming Project Experience (n = 100)

Interpretation: The most common response was "Yes", selected by 80 respondents (80.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

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Graph 4: IT Placement Preparation

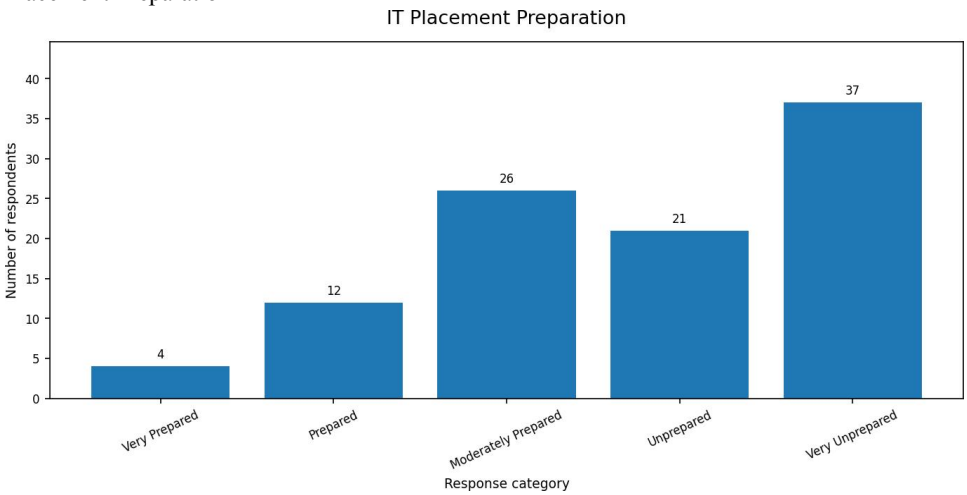


Figure 4: IT Placement Preparation (n = 100)

Interpretation: The most common response was "Very Unprepared", selected by 37 respondents (37.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

Graph 5: Technical Interview Confidence

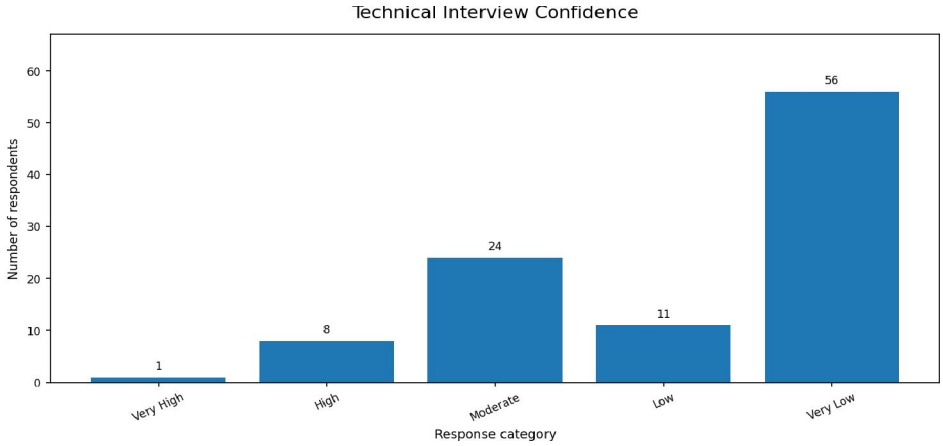


Figure 5: Technical Interview Confidence (n = 100)

Interpretation: The most common response was "Very Low", selected by 56 respondents (56.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

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Graph 6: Perceived Importance of Programming Skills

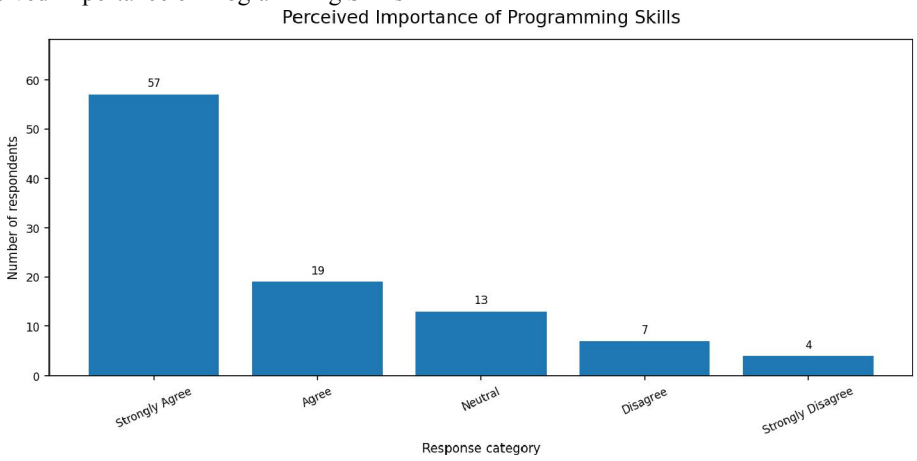


Figure 6: Perceived Importance of Programming Skills (n = 100)

Interpretation: The most common response was "Strongly Agree", selected by 57 respondents (57.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

Graph 7: Perceived Job Readiness

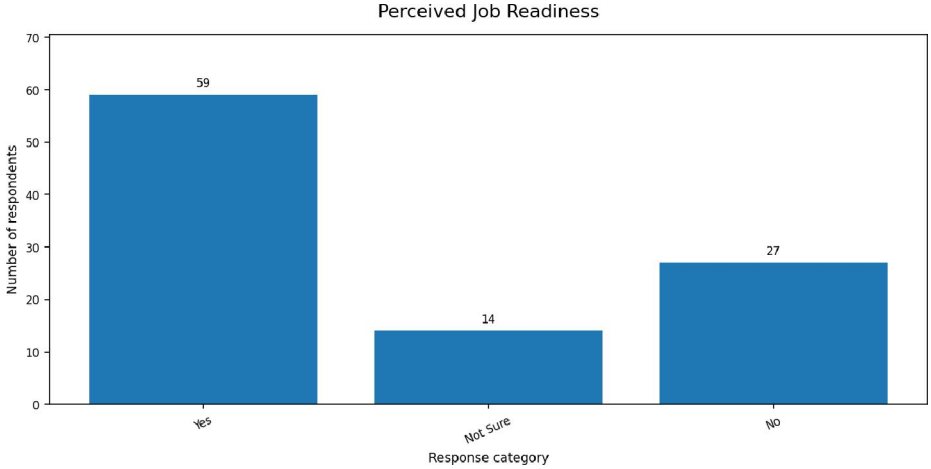


Figure 7: Perceived Job Readiness (n = 100)

Interpretation: The most common response was "Yes", selected by 59 respondents (59.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

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Graph 8: Skills Needing Improvement

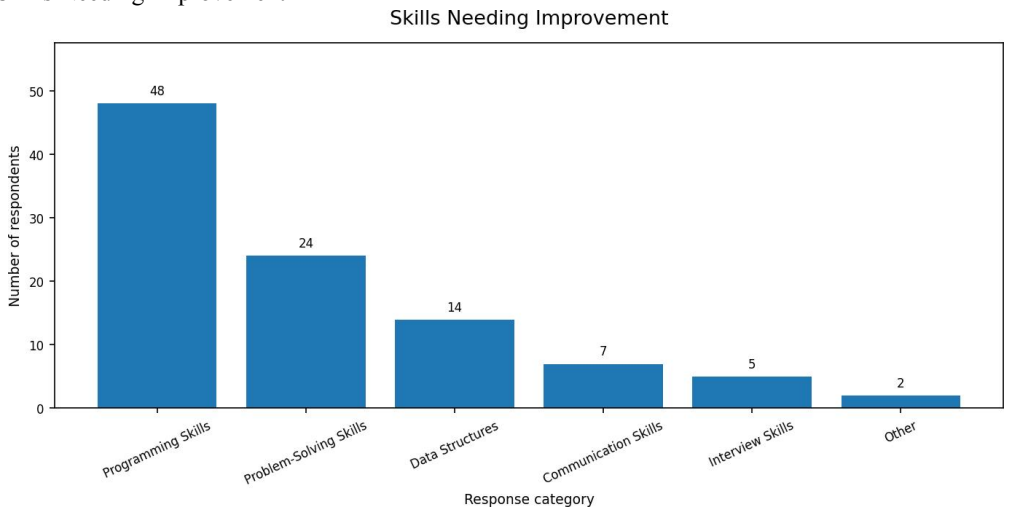


Figure 8: Skills Needing Improvement (n = 100)

Interpretation: The most common response was "Programming Skills", selected by 48 respondents (48.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

Graph 9: Biggest Programming Challenge

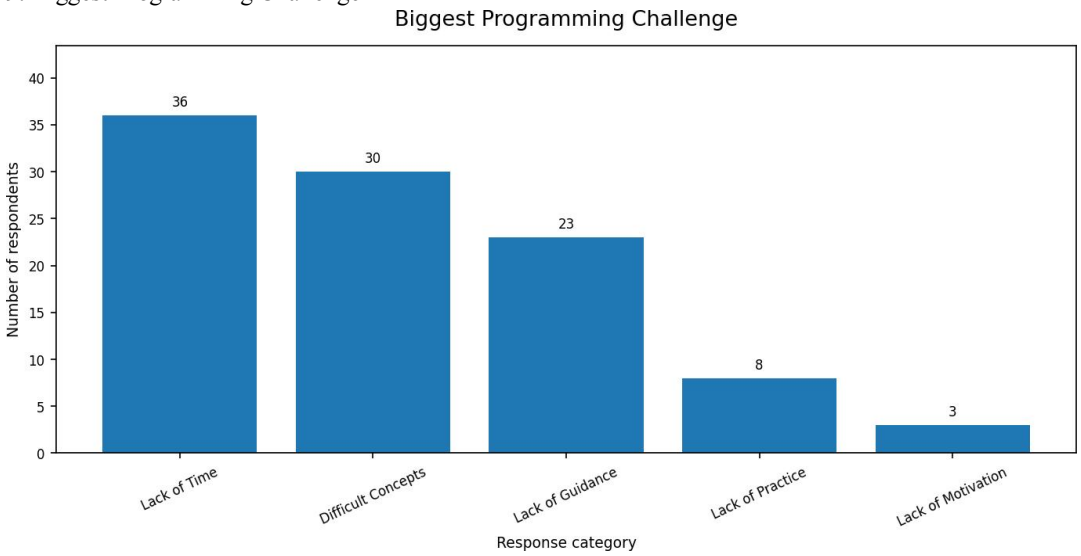


Figure 9: Biggest Programming Challenge (n = 100)

Interpretation: The most common response was "Lack of Time", selected by 36 respondents (36.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

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Graph 10: Support Needed for IT Placements

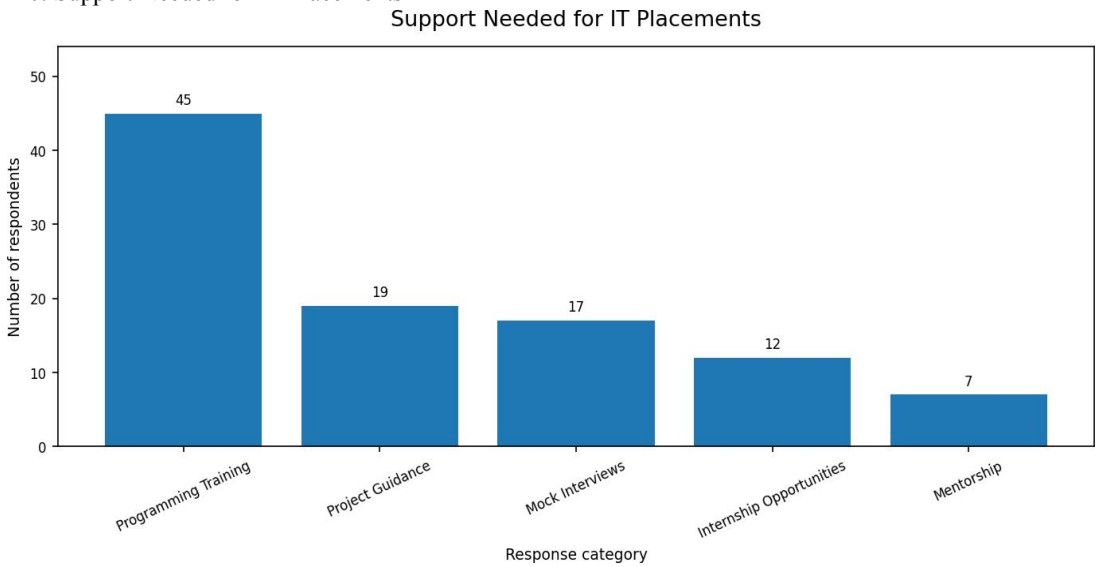


Figure 10: Support Needed for IT Placements (n = 100)

Interpretation: The most common response was "Programming Training", selected by 45 respondents (45.0%). This identifies the leading response in the sample; the other categories should also be considered when interpreting the overall result.

V. RESULTS AND DISCUSSION

The survey indicates that respondents generally recognize the importance of programming for IT employment. A total of 76% agreed or strongly agreed that programming skills help in getting an IT job. This reflects the perceived importance of programming, but it does not mean that programming alone guarantees employment.

Project experience was reported by 80% of respondents. Practical projects can help students apply concepts and demonstrate their work. At the same time, 67% reported low or very low confidence in technical interviews, and 58% described themselves as unprepared or very unprepared for IT placements. This suggests that project experience and confidence in recruitment situations are different aspects of employability.

In the self-rating question, 36% selected Average, 19% selected Poor, and 24% selected Very Poor. Together, these categories represent 79% of respondents who rated their programming skills as average or below. This result indicates that many respondents believe their programming ability needs improvement.

Programming training was the most frequently requested placement support (45%). The most commonly reported programming challenges were lack of time (36%), difficult concepts (30%), and lack of guidance (23%). These results support the need for regular coding practice, clear explanations, mentoring, project guidance, and mock technical interviews.

All findings are based on self-reported responses from this sample. The questionnaire did not independently test coding ability or verify employment outcomes, so the results should not be generalized to every IT student.

VI. FINDINGS

The supplied spreadsheet contains 100 responses.

80% of respondents reported completing a programming-related project.

76% agreed or strongly agreed that programming skills help in getting an IT job. 67% reported low or very low confidence in facing technical interviews.

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58% reported being unprepared or very unprepared for IT placements. 79% rated their programming skills as average, poor, or very poor.

45% selected programming training as the placement support they need most.

Lack of time (36%), difficult concepts (30%), and lack of guidance (23%) were the leading reported programming challenges.

VII. SUGGESTION

Students should follow a regular programming practice schedule.

Colleges should provide additional practice in problem-solving, data structures, and debugging. Students should complete practical projects and practise explaining their own contribution.

Mock technical interviews should be arranged to improve confidence.

Faculty or peer mentoring should be provided for difficult programming concepts.

Placement preparation should include programming exercises, project discussions, and interview practice.

VIII. CONCLUSION

The study examined programming skills and perceived employability among IT students using 100 questionnaire responses. Most respondents recognized that programming skills are useful for IT employment, and many had completed a programming-related project. However, low technical-interview confidence and limited placement readiness were also reported by many respondents. Programming training, regular practice, project guidance, and mock interviews may help students prepare more effectively for IT recruitment. The conclusions describe the views of the surveyed respondents and do not establish a direct causal relationship between programming skills and employment.

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