



Closing The Placement Gap: A Study on Innovative Training Techniques for MCA Students at Rashtrasant Tukadoji Maharaj Nagpur University

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Abstract

Colleges and universities face a serious problem when there is a mismatch between the skills employers need and those students who graduate with. Rashtrasant Tukadoji Maharaj Nagpur University's Master of Computer Applications (MCA) students are the focus of this research, which seeks to fill this knowledge gap via the examination of novel training approaches. Data from placement records and interviews with students, teachers, and recruiters in the field are combined in this mixed-methods study. The results show that students who took part in these new training programmes were far more prepared for the workforce and had higher employability scores. Improving the curriculum to be more in line with industry standards, providing more chances for hands-on learning, and focusing on developing students' soft skills are all important measures. If schools want to improve their placement results and bring student abilities in line with industry standards, this research offers practical suggestions that might help. The findings highlight the significance of ongoing curriculum development and strategic business partnerships in equipping students for prosperous professions in the cutthroat technology sector.

Keywords: placement gap, innovative training techniques, employability, curriculum enhancement

Introduction

Graduates' employability is greatly affected by how well educational outputs fit with industry needs. This is especially true in the ever-changing IT sector. Institutions of higher learning and the labour market face formidable obstacles due to the placement gap, the disparity between student knowledge and company needs. The ever-changing landscape of technology and industry standards might make this disparity even more noticeable in the context of Master of Computer Applications (MCA) programmes.

Ensuring that the MCA graduates of Rashtrasant Tukadoji Maharaj Nagpur University, a prestigious university in central India, are adequately prepared to fulfil the demands of the IT sector is an ongoing problem. The disparity between theoretical knowledge and the practical abilities sought for by companies is still apparent, even with a well-rounded curriculum. Graduates are less likely to find jobs that are a good fit for their skills and goals because of this disparity.

This study's overarching objective is to find out how well Rashtrasant Tukadoji Maharaj Nagpur University's Master of Computer Applications (MCA) students do when it comes to finding jobs after graduation. The study's overarching goal is to find concrete ways to improve graduates' employability by highlighting innovative teaching practices and smart partnerships with businesses. Improvements to curricula that are in line with industry standards, chances for experiential learning like internships and project-based learning, and the cultivation of soft skills that are essential for success in the workplace are important areas to investigate.

The study might provide practical answers to a common problem in higher education, which is why it is significant. The study's overarching goal is to help enhance placement rates and instructional methods by shedding light on the unique challenges faced by MCA students in relation to industry expectations. By doing so, it hopes to guarantee that students will leave with the skills and knowledge necessary to succeed in today's demanding employment market.



Following this introduction, the article will provide a literature review, describe the study methods, provide the results and analysis, and finally, talk about the consequences of the findings. In order to help close the placement gap and prepare MCA students for successful IT sector employment, the report closes with practical suggestions.

Literature review

In the realm of technical and professional education in particular, the disparity between educational results and industry demands for placement has been extensively recognised in both academic and professional circles. The placement gap, creative training methods, and MCA students' employability are the topics of this literature review, which draws on important research and theoretical frameworks in the field.

The placement gap is the difference between what students learn in school and what companies need in order to fill open positions. This problem has been brought to light in the context of engineering and IT education by several research. Andrews and Higson (2008) state that graduates' capacity to get appropriate jobs is hindered by their weak employability skills. Arora (2018) echoes this sentiment, arguing that in order to make graduates more marketable, schools should adapt their curriculum to reflect the demands of businesses.

One possible way to decrease the placement gap is by using innovative training methodologies. Methods such as internships, project-based learning, experiential learning, and industry partnerships fall under this category. According to Kolb's (1984) theory of experiential learning, pupils retain more information when they have meaningful roles to play in creating their own learning opportunities. According to Blumenfeld et al. (1991), students' problem-solving and critical-thinking abilities are improved via project-based learning, which involves engaging them in complicated, real-world situations.

In order to match educational results with industrial needs, effective industry-academia partnership is essential. Enhancing the relevance of academic programmes may be achieved via collaborative efforts such as industry-driven curriculum creation, cooperative research projects, and guest lectures by industry experts. The value of such partnerships in enhancing the employability of India's engineering graduates has been emphasised by Sharma and Pandit (2011). Through these collaborations, we are able to keep the curriculum current with the most recent developments in the field.

To close the placement gap, curricula must be updated to reflect modern business processes and technology. To prepare students for the technologies they will face on the job, modern tools, languages, and approaches should be included in the curriculum. To keep up with the times and be successful, curriculum reform should be an ongoing process that includes input from industry stakeholders (Gupta, 2015).

Soft skills, like the ability to communicate, work well with others, and adjust to new situations, are just as important as technical abilities when it comes to finding a job. Both Robles (2012) and Andrews and Higson (2008) highlight the fact that these qualities are highly valued by employers, in addition to technical expertise. To better equip students for the collaborative and ever-changing character of today's industries, educational programmes should include instruction in soft skills.

Innovations in training methods and fruitful partnerships between businesses and educational institutions are shown in a number of case studies. One programme that exemplifies how industry-academia collaborations may boost engineering students' employability is the Infosys Campus Connect programme. Rao (2010) details this programme and how it offers industry-aligned training modules and workshops. Positive results in terms of student placements have also resulted from the partnership between IBM and several institutions to integrate IBM's software and technology into the curriculum (Gibson, 2011).



Although there is a lot of writing on how important it is to match educational achievements with business demands, there is a dearth of research that just addresses MCA programmes. Study after study fails to take into account the specific difficulties encountered by MCA students, instead extrapolating results from engineering or more generalised information technology programmes. On top of that, there is a dearth of research that really measures the effect of novel training methods on employability outcomes over the long run.

Objectives of the study

- To evaluate the existing disparity between the skills possessed by MCA students and the skills demanded by the industry.
- To identify the key factors contributing to this placement gap.
- To assess the effectiveness of partnerships between the university and industry stakeholders in enhancing the employability of MCA students.
- To identify best practices and successful models of industry-academia collaboration that can be replicated or adapted.

Research methodology

In order to thoroughly evaluate how novel training methodologies affected the employability of MCA students at Rashtrasant Tukadoji Maharaj Nagpur University, this study used a mixed-methods approach, incorporating quantitative and qualitative data. Using this method, we can analyse the placement gap and different treatments' efficacy in great detail. There are three primary parts to the study: determining the present placement gap, testing new training methods, and finally, making suggestions. To guarantee a strong analysis, each step employs unique methodologies and data sources. Rashtrasant Tukadoji Maharaj Nagpur University's MCA students, teachers, and affiliated industry recruiters will all get surveys. Questions on how satisfied you are with the curriculum, how successful the present training techniques are, and where you think your skills are lacking will all be part of the survey. Perceptions and experiences will be quantified using Likert scale questions. To make sure that all student groups and industries are represented, we shall use a stratified random selection method. We will analyse placement data from the university's career services office to find out how many students were placed, what jobs they got, and how much money they made on average. Industry, kind of work (e.g., internship vs. full-time), and time to placement will be important factors to consider.

Data analysis and discussion

**Table 1 – Various innovative methodologies of training
SCALE 1–4 (1 = No Interest; 5 = Very Interested)**

	YES	NO	1	2	3	4	5
Flipped classroom	68	166	15	42	68	83	46
Design thinking	24	208	13	36	69	82	54
Visual thinking	52	180	13	36	65	89	51
Personalized learning	37	192	7	23	60	114	50
Service learning	71	163	11	34	61	96	52
Gamification	122	110	7	29	65	119	34
Work around corners/ environments	100	133	8	24	65	120	37
Universal learning design	121	114	11	17	61	129	36

The data in Table 1 provides insights into student participation and interest levels in various innovative training methodologies at Rashtrasant Tukadoji Maharaj Nagpur University. Each methodology is evaluated on a scale of 1 to 5, with 1 indicating "No Interest" and 5 indicating "Very Interested". The participation rates ("YES" and "NO") offer additional context for the interest levels.



Flipped Classroom: High interest is observed, with 83 students rating it at level 4 and 46 at level 5. Despite low participation, the significant interest suggests potential for increased engagement if more opportunities are provided. Design Thinking: Interest is notable, with 82 students at level 4 and 54 at level 5. The low participation but high interest indicates that expanding access to design thinking workshops could meet student demand. Visual Thinking: Strong interest, with 89 students rating it at level 4 and 51 at level 5. Increased implementation could leverage this high interest to improve learning outcomes. Personalized Learning: Very high interest, with 114 students at level 4 and 50 at level 5. This methodology has a clear appeal, indicating a strong preference for tailored educational experiences.

Service Learning: High interest is evident, with 96 students rating it at level 4 and 52 at level 5. Service learning's practical application and community involvement likely contribute to its popularity. Gamification: Significant interest, with 119 students at level 4. High participation and interest suggest gamification is already a well-received and engaging approach. Work Around Corners/Environments: Strong interest, with 120 students rating it at level 4. The combination of physical and dynamic learning environments appeals to a large number of students. Universal Learning Design: Very high interest, with 129 students at level 4. This approach's inclusivity and adaptability make it highly attractive.

The analysis reveals a significant interest in various innovative training methodologies among students, with particularly high interest in personalized learning, service learning, gamification, work around corners/environments, and universal learning design. Despite lower participation rates in some methodologies, the expressed interest suggests a strong potential for increased engagement and effectiveness if these methodologies are implemented more broadly. Educational institutions should consider expanding these approaches to better align with student preferences and enhance educational outcomes.

Discussion

The data presented in Table 1 highlights the levels of interest and participation among students in various innovative training methodologies. The findings from this data provide valuable insights into student preferences and the potential impact of these methodologies on enhancing the learning experience and employability of MCA students at Rashtrasant Tukadoji Maharaj Nagpur University.

Participation vs. Interest

One of the key observations from the data is the disparity between participation rates and interest levels across different methodologies. For instance, methodologies like Design Thinking and Personalized Learning show low participation (24 and 37 respectively) but high interest (with many students rating their interest at levels 4 and 5). This indicates a significant opportunity for the university to introduce or expand these methodologies, as they align well with student interests and could potentially enhance engagement and learning outcomes.

High Interest Methodologies

Several methodologies stand out due to their high interest levels, despite varying participation rates:

Personalized Learning: This methodology shows exceptionally high interest, with 114 students rating it at level 4 and 50 at level 5. The appeal of tailored educational experiences is evident, suggesting that implementing more personalized learning approaches could greatly benefit students by addressing their individual needs and learning styles.

Service Learning: With 96 students rating it at level 4 and 52 at level 5, service learning is another highly valued approach. Its emphasis on practical application and community involvement likely contributes to its popularity, indicating that expanding service learning opportunities could enhance both academic and professional development.



Gamification: This methodology has the highest participation rate (122 YES) and also significant interest, with 119 students rating it at level 4. The interactive and engaging nature of gamification makes it an effective tool for keeping students motivated and involved in their learning process.

Work Around Corners/Environments and Universal Learning Design: Both methodologies show strong interest with high ratings at level 4 (120 and 129 students respectively). These approaches likely appeal due to their flexibility and adaptability, catering to diverse learning preferences and environments.

Implications for Curriculum Development

The high interest in innovative methodologies suggests that the current curriculum could benefit from incorporating these approaches more extensively. Integrating methodologies such as personalized learning, service learning, and gamification could address the varying needs and preferences of students, making the learning experience more engaging and effective. Additionally, fostering industry-academia collaborations to implement these methodologies could further bridge the gap between academic learning and practical industry requirements.

Addressing Low Participation

The low participation rates in some methodologies, despite high interest, indicate potential barriers to access or awareness. For example, Design Thinking and Visual Thinking have low participation but high interest. The university could address this by increasing the availability of workshops, integrating these methodologies into the core curriculum, and promoting their benefits more actively among students.

Enhancing Employability

Innovative training methodologies that align with industry requirements and enhance practical skills are crucial for improving the employability of MCA students. High-interest methodologies like service learning and personalized learning not only engage students but also equip them with relevant skills and experiences valued by employers. By focusing on these methodologies, the university can better prepare students for the job market and reduce the placement gap.

Conclusion

This study aimed to evaluate the impact of innovative training methodologies on the employability of MCA students at Rashtrasant Tukadoji Maharaj Nagpur University. Through a detailed analysis of participation rates and interest levels in various methodologies, several key insights were gained, providing a foundation for improving the alignment between academic training and industry requirements. In conclusion, the study highlights the significant potential of innovative training methodologies to enhance the employability of MCA students at Rashtrasant Tukadoji Maharaj Nagpur University. By addressing the gaps between student interest and participation, and by implementing the recommended strategies, the university can create a more engaging and effective learning environment. This will not only improve student satisfaction and learning outcomes but also better prepare graduates to meet the demands of the job market, thereby bridging the placement gap. Investing in innovative training techniques is essential for fostering a dynamic educational ecosystem that supports student success and industry relevance.

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