



Addressing Graduate Unemployment: Aligning Higher Education Curricula with Labour Market Demands

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Abstract

Graduate unemployment is a pressing issue that significantly impacts both individuals and the broader economy. While various initiatives attempt to address this problem, particularly from Universities of Technology, many of these efforts, such as entrepreneurial and Work Integrated Learning (WIL) programs, are not directly linked to the curricula of various disciplines. This study proposes an innovative approach that embeds career services and experiential learning opportunities within all disciplines to mitigate the skills mismatch between graduates' qualifications and industry demands. The primary objective of this study is to analyse the underlying factors contributing to persistent graduate unemployment, with a particular focus on curriculum structure within different disciplines. The study aims to determine the extent to which the current curricula create conditions that align graduates' qualifications with industry demands. The guiding research question is: What factors are responsible for graduate unemployment from Universities of Technology? To address this question, the study will employ strategic intelligence, and business process management concepts to analyse the disconnect between graduates' qualifications and industry needs in the 21st century. The research will use a qualitative approach, specifically conducting interviews with graduates and university staff members from a Universities of Technology. By examining the curriculum structures, the study seeks to uncover how higher education institutions can better align their programs with labor market demands. Additionally, it will explore the roles of career services and experiential learning opportunities in reducing unemployment rates. The research will also investigate how collaboration between higher education institutions and policymakers can address the skills mismatch between graduates and employer expectations. This study's findings are expected to provide valuable insights into how educational institutions can reform their curricula and enhance their career services to better prepare graduates for the workforce. Ultimately, the research aims to contribute to reducing graduate unemployment by fostering stronger connections between higher education and industry, ensuring that graduates possess the skills and knowledge required to meet current and future labor market needs.

Keywords: Graduate unemployment, Curriculum structure, Skills mismatch, Experiential learning, Career services, Universities of Technology

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Introduction

Graduate unemployment is a pervasive issue that affects economies worldwide, creating a misalignment between higher education outcomes and labor market needs. As higher education institutions strive to produce graduates equipped with the skills and knowledge required by employers, there is an increasing necessity to align curricula with the demands of the labor market (McCowan, 2015). This misalignment not only impacts the employability of graduates but also has broader economic implications, including reduced productivity and increased social welfare costs (Tomlinson, 2012).

Higher education curricula have traditionally been designed with a focus on theoretical knowledge, often at the expense of practical skills that are immediately applicable in the workplace (Yorke, 2006). The rapid evolution of industries and the advent of new technologies have further exacerbated the gap between what is taught in universities and what is required by employers (Cappelli, 2015). This has led to a growing discourse on the need for curriculum reform to better prepare graduates for the labor market (Bridgstock, 2009).

Recent studies have highlighted several strategies that higher education institutions can employ to address this issue. These include incorporating employability skills into curricula, fostering partnerships with industry, and promoting work-integrated learning opportunities (Jackson, 2013). By doing so, institutions can enhance the employability of their graduates and contribute to reducing the rates of graduate unemployment (Holmes, 2013).

In this paper, we explore the various approaches to aligning higher education curricula with labor market demands. We analyze the effectiveness of these strategies and propose a framework for curriculum development that can better prepare graduates for successful entry into the workforce. This research aims to provide actionable insights for educators, policymakers, and industry stakeholders to collaboratively address the challenges of graduate unemployment.

2. Literature Review

2.1 The Graduate Unemployment Crisis

Graduate unemployment is a multifaceted problem influenced by economic, social, and educational factors. According to the International Labour Organization (2020), the global youth unemployment rate was 13.6% in 2020, with many young graduates struggling to find jobs that match their skills and qualifications. In South Africa, for instance, the graduate unemployment rate remains alarmingly high, with Stats SA (2021) reporting that nearly one in three young graduates were unemployed in the first quarter of 2021.

2.2 Mismatch Between Higher Education and Labour Market Needs

A significant contributor to graduate unemployment is the mismatch between the skills and knowledge imparted by higher education institutions and the actual needs of the labour market. Research by McCowan (2015) indicates that many higher education institutions continue to offer curricula that are outdated and not reflective of the current job market requirements. This misalignment results in graduates lacking the practical skills and competencies demanded by employers, leading to high unemployment rates among young graduates.

2.3 The Role of Higher Education Institutions

Higher education institutions play a pivotal role in addressing graduate unemployment by ensuring that their curricula are aligned with labour market demands. According to a study by Teichler (2017), institutions need to engage in regular dialogue with industry stakeholders to understand the evolving needs of the job market and adjust their curricula accordingly. This involves integrating practical skills training, industry-relevant coursework, and opportunities for work-integrated learning.

2.4 Strategies for Curriculum Alignment

Several strategies can be employed to align higher education curricula with labour market demands. Firstly, curriculum development should be informed by labour market analysis and employer feedback. As suggested by Bridgstock (2009), this ensures that the skills taught are relevant and up to date. Additionally, incorporating internships, apprenticeships, and cooperative education programs can provide students with hands-on experience and exposure to real-world work environments (Jackson, 2015).

Another effective strategy is the implementation of competency-based education, which focuses on the acquisition of specific skills and competencies required by the labour market. This approach allows for greater flexibility in learning and can be tailored to meet the needs of different industries (Mulder, 2014). Furthermore, fostering partnerships between higher education institutions and industry can facilitate the sharing of resources, knowledge, and expertise, enhancing the relevance and quality of education (Thune, 2011).

2.5 Aligning Higher Education Curricula with Labor Market Demands

While it is essential to acknowledge the broader strategies for aligning higher education curricula with labor market needs, it is equally important to delve into specific initiatives that have been successful in bridging this gap. To ensure that higher education is responsive to the evolving demands of the labor market, various institutions and countries have implemented strategies and programs that successfully bridge the gap between academic curricula and market needs. In Germany, the dual education system is an exemplary model of aligning curricula with labor market demands. This system combines classroom-based learning with practical training in a

company. Programs are developed in close collaboration with industries to ensure that students acquire the specific skills that employers are looking for. In fact, 87% of apprentices receive permanent job offers from their training companies upon completion, significantly lowering unemployment rates among young graduates (Federal Institute for Vocational Education and Training, 2022). In South Africa, various universities, including the Durban University of Technology (DUT), have adopted Work-Integrated Learning (WIL) programs as part of their curricula. These programs integrate formal academic learning with practical work experience. For example, the health sciences departments often require students to complete internships or placements in healthcare settings, ensuring that graduates are well-prepared for the practical demands of the workforce. Students gain real-world experience that enhances their employability. This approach has been especially beneficial in professional fields such as engineering, healthcare, and IT, where practical skills are critical.

Singapore's SkillsFuture program is another innovative approach aimed at aligning education with market needs by offering continuous learning pathways. It provides citizens with credits and access to training programs that are designed to meet current and future industry demands. This initiative has seen success, particularly in technology sectors, by continuously updating curricula to reflect evolving industry trends. As a result, Singapore has seen a steady decline in graduate unemployment, with a focus on high-demand areas like data analytics, cybersecurity, and biotechnology (SkillsFuture Singapore, 2021). In the UK, higher apprenticeships have become an effective model to address graduate unemployment and align curricula with industry needs. These programs offer students the opportunity to gain degree-level qualifications while working. The involvement of employers in shaping the curriculum ensures that students are trained in the specific skills required for the job market. This model has successfully reduced the skill gap, particularly in technical fields like engineering and IT, where traditional academic courses may lag rapid industry advancements (Institute for Apprenticeships and Technical Education, 2023).

2.6 Recent Labor Market Data and Sector-Specific Skills Demands

Recent labor market trends show a growing gap between the supply of graduates and the demand for sector-specific skills. For instance, according to the World Economic Forum (2023), industries such as technology, healthcare, and renewable energy are experiencing significant shortages of qualified professionals. In the technology sector, skills such as artificial intelligence (AI), machine learning, data science, and cybersecurity are in high demand. Similarly, healthcare industries are grappling with shortages of skilled workers, including nurses, medical technicians, and allied health professionals (OECD, 2023).

Furthermore, data from the International Labour Organization (2022) indicates that renewable energy sectors, particularly in the areas of solar and wind energy, are experiencing rapid expansion, yet there is a lack of workers with the necessary technical and engineering skills to meet industry demands. These trends suggest that graduates with specialized technical training and skills in these fields are more likely

to find employment, while those with more generalized qualifications may face greater challenges in securing jobs (ILO, 2022).

2.7 Benefits of Aligning Higher Education with Labour Market Demands

Aligning higher education curricula with labour market demands offers numerous benefits. For graduates, it enhances employability by equipping them with the skills and competencies that employers seek. For employers, it ensures a steady supply of qualified and job-ready candidates, reducing recruitment and training costs. For higher education institutions, it enhances their reputation and attractiveness to prospective students, as demonstrated by the increased demand for industry-aligned programs (Yorke, 2006).

3. Methodology

3.1 Research Design

The study employed a qualitative research design to explore the factors responsible for graduate unemployment from Universities of Technology. A qualitative approach was chosen due to its effectiveness in providing in-depth understanding of complex social phenomena (Creswell, 2014). This approach facilitated the collection of rich, detailed data, which was essential for addressing the research question.

3.2 Study Population and Sampling

The study was conducted at a University of Technology located in South Africa. The target population included recent graduates from various faculties within the institution. Purposive sampling was used to select participants who had graduated within the last five years and were currently unemployed. This sampling technique ensured that the participants had relevant and recent experiences related to the study's focus (Patton, 2015). A total of 20 participants were recruited for the study, ensuring a diverse representation of different faculties and demographic backgrounds.

3.3 Data Collection

Data were collected using semi-structured interviews, which allowed for flexibility in probing deeper into participants' responses while maintaining a consistent set of questions (Bryman, 2016). The interviews were conducted face-to-face and lasted between 45 to 60 minutes. Each interview was audio-recorded with the participants' consent and subsequently transcribed verbatim. The interview guide included questions about participants' educational experiences, job search strategies, perceptions of the curriculum's relevance to the labor market, and challenges faced in securing employment.

3.4 Data Analysis

Thematic analysis was employed to analyse the qualitative data. This method involved coding the data, identifying significant themes, and interpreting the findings within the context of the research question (Braun & Clarke, 2006). The analysis followed a six-step process: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. NVivo software was used to assist with data management and coding.

3.5 Demographic Profile of Participants

The demographic characteristics of the participants were diverse, reflecting the overall graduate population of the university. The following table provides a summary of the demographic profile:

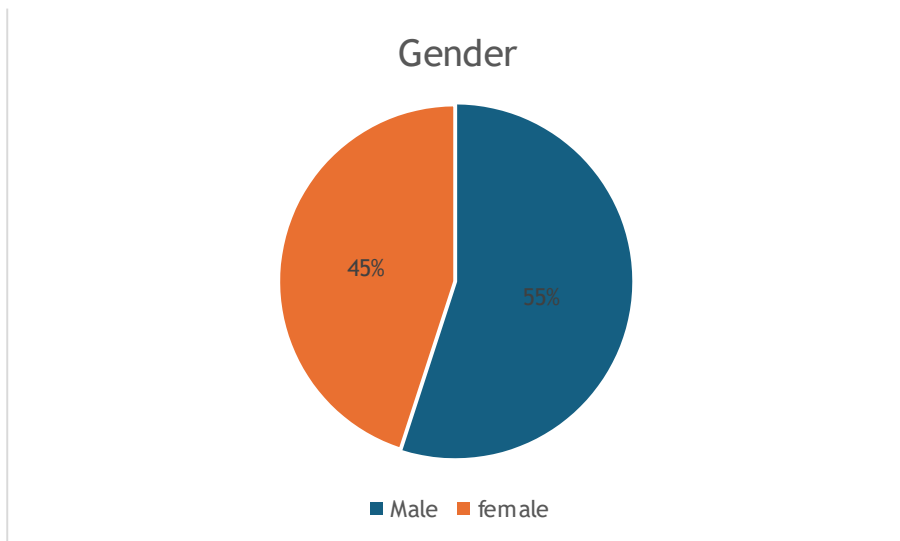


Figure 1. Gender Demographic breakdown

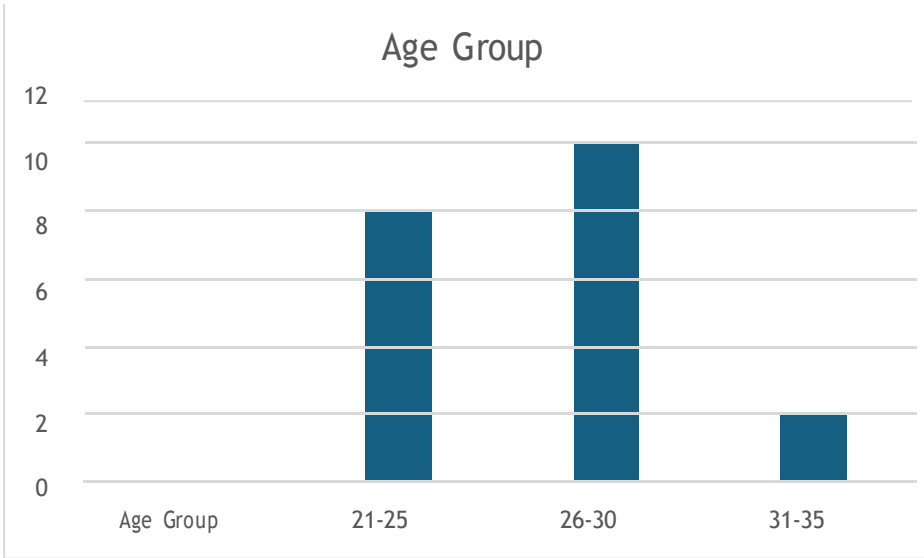


Figure 2. Age Group Demographic breakdown

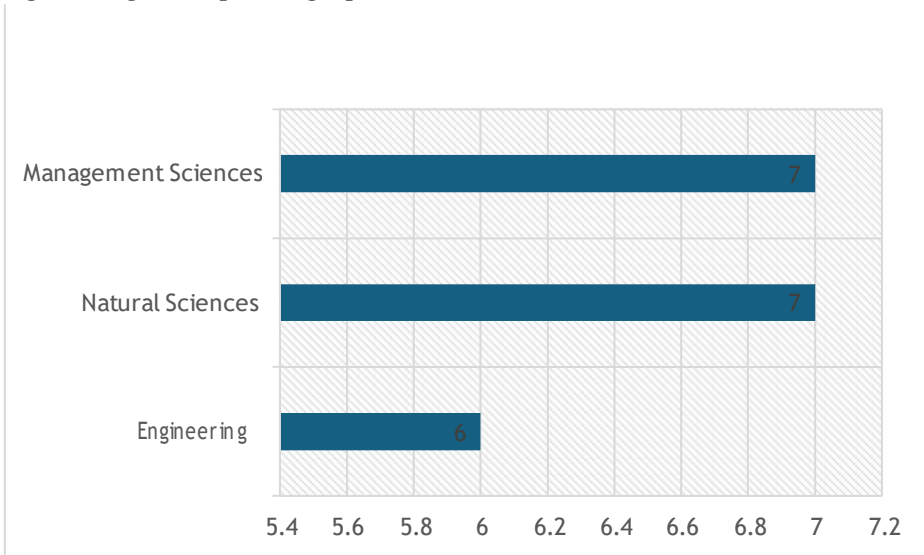


Figure 3. Faculty breakdown

The demographic characteristics of the study sample consisted of 20 participants. Regarding gender distribution, there were 11 males and 9 females, figure 1.

In terms of age groups, as indicated in figure 2, the largest group was those aged 2630, comprising 10 participants. This was followed by the 21-25 age group with 8 participants, and lastly, the 31-35 age group with 2 participants.

When looking at the faculties represented as shown in figure 3, the participants were from a variety of disciplines. The Engineering faculty had 6 participants. Natural Sciences with 7 participants, and Management Sciences also had 7 participants.

4. Findings

4.1 Themes Identified

The thematic analysis revealed several key factors contributing to graduate unemployment:

Table 1. Themes emerging from the study

Emerging Theme	Brief Description
Misalignment Between Curriculum and Labor Market Needs	Graduates reported that the curriculum often did not match the skills and knowledge required by employers. This misalignment left them feeling unprepared for the job market, as
	illustrated by a participant who stated, "I felt like I had the theoretical knowledge, but when it came to practical skills, I was at a loss" (Participant 3).
Lack of Practical Experience	Many participants highlighted the lack of practical, hands-on experience provided during their studies. Internships and practical placements were either insufficient or non-existent. One graduate mentioned, "Without practical experience, employers were not willing to take a chance on me" (Participant 12).
Inadequate Career Guidance and Support Services	The university's career services were described as inadequate by several participants. They felt that more robust support in job searching, resume writing, and interview preparation could have significantly improved their employment prospects. "I did not know where to start with my job search, and the university's career services were not helpful" (Participant 7).

Economic Factors and Job Market Saturation	The saturation of the job market in certain fields, coupled with broader economic challenges, was also cited as a significant barrier. "Even with a degree, the job market is just too competitive, especially in my field" (Participant 15).
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5. Discussion

The findings of this study reveal several critical factors contributing to graduate unemployment from a University of Technology, focusing on the misalignment between the curriculum and labor market needs, lack of practical experience, inadequate career guidance, and economic factors such as job market saturation.

5.1 Theme 1: Misalignment Between Curriculum and Labor Market Needs

A significant theme that emerged from the data is the misalignment between the curriculum offered by the university and the skills and knowledge required by employers. Graduates frequently reported feeling unprepared for the job market due to this gap. As one participant noted, "I felt like I had the theoretical knowledge, but when it came to practical skills, I was at a loss" (Participant 3). This discrepancy indicates a pressing need for higher education institutions to continuously update and align their curricula with current industry requirements. According to Brown et al. (2020), bridging this gap is crucial for enhancing graduates' employability. They argue that curricula should incorporate not only theoretical knowledge but also practical skills that are directly applicable in the workplace (Brown et al., 2020).

5.2 Theme 2: Lack of Practical Experience

Another recurrent theme was the lack of practical, hands-on experience available to students during their studies. Many participants highlighted the insufficiency or complete absence of internships and practical placements, which are essential for gaining real-world experience. One graduate shared, "Without practical experience, employers were not willing to take a chance on me" (Participant 12). This finding aligns with the literature, which underscores the importance of experiential learning opportunities in higher education (Kolb, 2015). Integrating more practical components into the curriculum could significantly enhance students' readiness for the job market and their overall employability.

5.3 Theme 3: Inadequate Career Guidance and Support Services

The study also revealed inadequacies in the university's career guidance and support services. Several participants expressed dissatisfaction with the support provided in areas such as job searching, resume writing, and interview preparation. As one

participant lamented, "I did not know where to start with my job search, and the university's career services were not helpful" (Participant 7). Effective career services are crucial for assisting graduates in transitioning from academia to the workforce. Research by Smith and Taylor (2017) emphasizes the role of robust career support services in improving employment outcomes for graduates. They recommend that universities invest in comprehensive career counselling and support programs to better prepare students for the job market (Smith & Taylor, 2017).

5.5 Theme 4: Economic Factors and Job Market Saturation

Beyond institutional factors, broader economic issues also play a significant role in graduate unemployment. The saturation of the job market in certain fields, coupled with broader economic challenges, was cited as a significant barrier by participants. One graduate remarked, "Even with a degree, the job market is just too competitive, especially in my field" (Participant 15). This finding is consistent with the observations of recent labor market studies, which indicate that economic downturns and high competition in certain sectors can significantly hinder graduates' employment prospects (International Labour Organization, 2019). Addressing these challenges requires a multifaceted approach, including economic policies that stimulate job creation and efforts to diversify the employment sectors available to graduates.

In conclusion, this study highlights the complex interplay of curricular misalignment, lack of practical experience, inadequate career support, and economic factors in contributing to graduate unemployment from Universities of Technology. Addressing these issues requires concerted efforts from higher education institutions, policymakers, and industry stakeholders to create an education system that not only imparts theoretical knowledge but also equips students with the practical skills and support necessary to thrive in the competitive job market.

Conclusion

The study concluded that there are multiple factors contributing to graduate unemployment at Universities of Technology, including curriculum misalignment with labor market needs, lack of practical experience, inadequate career guidance, and broader economic challenges. Addressing these issues requires a multifaceted approach involving curriculum reform, enhanced practical training opportunities, and improved career support services. The alignment of higher education curricula with labour market demands is crucial in addressing graduate unemployment. By engaging with industry stakeholders, incorporating practical skills training, and fostering partnerships, higher education institutions can ensure that their graduates are well equipped to meet the demands of the job market. This alignment not only benefits graduates and employers but also enhances the overall quality and relevance of higher education.

Several key strategies can be employed by higher education institutions to better align their curricula with labor market demands where universities form stronger partnerships with industries to co-create curricula. This would ensure that students are taught the skills most in demand by employers. These partnerships could also involve guest lectures, mentorship programs, or collaborative projects where students solve real business problems. Curricula should not be static but should be regularly updated to reflect changes in the labor market. Institutions can leverage data on employment trends and skills forecasts to anticipate future job demands. In addition to technical knowledge, employers often seek graduates who possess critical thinking, problem-solving, and communication skills. Incorporating soft skills training within curricula is essential for producing well-rounded graduates. Universities should adopt flexible learning pathways, including short courses, certifications, and online learning options, to enable both students and professionals to continually upskill and reskill.

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