

Aligning Graduate Teacher Education with Labour Market Needs: Strategies for Enhancing Employability in Complex and Dynamic Labour Markets.

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DOI: <https://dx.doi.org/10.47772/IJRISS.2025.9010188>

Received: 31 December 2024; Accepted: 07 January 2025; Published: 11 February 2025

ABSTRACT

It has been established that there are complex relationships amongst education, labour supply, demand and employability. The relationship amongst these variables has kindled numerous debate amongst scholars, académicas, economists and scientists. Education itself influences the levels of labour demand and supply. Similarly, the levels of labour supply and demand have strong influence on the overall levels of employability on the labour markets. There are linkages in between the variables that significantly determine the cause-effect relationships. Understanding the relationships amongst these variables could significantly help in finding the solution to the problema of graduate unemployability on the labour market. This article aimed at exploring what could be done with graduate teacher education in order to increase demand for graduate teachers on the labour market. The study employed mixed methods research which was grounded in pragmatism. Both probabilistic and non-probabilistic methods of data collections were used. The cuantitativa data was analysed using SPSS while thematic análisis was used to analyse qualitative data. The study results indicated that graduates do not have adicional skills for employability on the labour markets. Furthermore, it was also established that the tradicional graduate teacher education could be transformed by linking it to the labour markets needs. The introducción of the internacional lenguaje skills, culture, research, innovations and entrepreneurial skills could significantly transform the graduate teacher education thereby making it of a higher quality and consequently translating into increased demand and supply for the enhanced graduate teacher employability on the labour market. Demand and supply could be predominantly manipulated through the nature of the education being given out. It was recommended that the government could actively lead in the process of graduate teacher education and transformación through Policy, robust curriculum reviews and quality ímprobamente.

Keywords: The study key words included; education, supply, demand, employability, transformacional education and labour markets.

INTRODUCTION

Graduate teacher employability is a critical issue in modern labor markets, and its relationship with labor supply and demand has widely kindled numerous debates amongst scholars, policy makers and academicians to mention but a few. Empirical research on these topics provides insights into how labor markets operate and how supply-demand mismatches can affect employment outcomes for graduates (WEF 2020; OECD 2020). This discusión highlights several key studies and findings that examine the relationships amongst graduate teacher education, graduate employability, labor supply, and labor demand on the labor market.

Graduate employability refers to a graduate's ability to secure employment and perform effectively in a profesional setting (Bridgstock 2009). Numerous factors contribute to employability, including the skills acquired during education, the quality of education, and the alignment between graduates' skills and labor market needs. At the centre of this inter-relationship comes labour demand and supply. The intensity of the associations, relationship and correlation between labour supply and demand eventual y determine the graduate teachers employability on the labour market.

Labor supply refers to the number of individuals who are available to work, while labor demand is the number

of workers that employees need (Bailey & Jenkins 2009). The interaction between labor supply and demand determines employment levels, wages, and graduate outcomes in the labor market. In view of this conversation, we can therefore argue that it is possible to moderate and regulate graduate teacher employability through manipulation and control of the labour supply and demand (Cross 2017). There are however core institutions that can be networked, interlinked and coordinated in order to obtain a desired outcome. It is the responsibility of the government to actively manage levels of employability within the areas of their domains.

However, in order to proactively solve the problem of graduate teacher unemployment, it requires joint efforts and collaborations amongst all parties from all spheres (Wilson 2019). The primary key actors in this conversation amongst others included the government policy makers, higher institutions of learning, the ministry of education, the teaching commission and the teaching council including the higher education authority.

REVIEWS OF THE RELATED LITERATURE

A study by McGuinness (2018) empirically analyzed labor supply and demand imbalances in the European labor market, focusing on graduate employability. The study found that in many European countries, there is a persistent mismatch between the supply of graduates in certain fields (e.g., humanities and social sciences) and the demand for workers in other fields (e.g., STEM disciplines). This mismatch has resulted in higher unemployment and underemployment rates among graduates from oversupplied fields, while industries facing labor shortages (e.g., technology, healthcare) struggle to fill vacancies. McGuinness's research demonstrates the importance of aligning educational programs with market demand to enhance employability. To address issues of mismatches between labor supply and demand, several studies have highlighted the role of demand-driven education. This approach emphasizes aligning higher education curricula with labor market needs to produce graduates with relevant skills.

Freeman et al. (2020) carried out an empirical study on the impact of employer engagement in curriculum design on graduate employability in the UK labor market. The study showed that when employers are involved in designing educational programs, the skills and competencies acquired by students are more likely to meet labor market demand. This engagement results in graduates who are better prepared for the job market, leading to higher employability rates. This study emphasizes the need for collaboration between higher education institutions and employers to bridge the gap between labor supply and demand.

Jackson (2016) conducted an empirical study to examine the impact of transferable skills on graduate employability in the Australian labor market. The study found that graduates who possessed a mix of technical and soft skills, such as communication and teamwork, had a higher likelihood of securing employment. This suggests that the supply of graduates with these skills meets the demand for versatile workers who can adapt to various professional environments. This aligns with previous studies by Tomlinson (2017), who emphasized that employers seek graduates with a combination of academic knowledge and soft skills to thrive in a dynamic work environment. In an era of rapid technological change and globalized economies, labor markets are becoming more dynamic and uncertain. To address this volatility, several studies have highlighted the importance of labor market flexibility and lifelong learning.

A study by Becker et al. (2019) explored the role of lifelong learning and continuous skill development in enhancing graduate employability in the UK. The study found that graduates who engaged in lifelong learning and upskilling had higher employability rates, especially in sectors where technological advancements required new skills. These findings align with McGuinness et al. (2018), who emphasized that continuous learning is critical for workers to remain relevant in the labor market as new technologies emerge and labor demand shifts. Graduate tracking studies provide empirical evidence of how different factors influence graduate employment outcomes. These studies often follow cohorts of graduates over time to assess their labor market trajectories and analyze the relationship between their field of study and labor market outcomes.

A landmark study by Lasselle et al. (2019) conducted in the UK examined the relationship between graduates' field of study and their employment outcomes over a ten-year period. The study found that STEM graduates had significantly higher employment rates and earnings compared to graduates from humanities and social sciences programs. This pattern reflects the higher demand for STEM-related skills in the labor market, suggesting a strong

alignment between labor demand in these fields and the supply of graduates. Conversely, graduates from oversupplied fields often experienced lower employability and higher rates of underemployment. Jovenmente play a vital role in balancing labor supply and demand through policy interventions that regulate higher education and promote skills development. These interventions can enhance graduate employability by ensuring that educational outputs are aligned with labor market needs.

An empirical study by Wilson (2019) examined the role of government policy in shaping labor supply and demand in the US labor market. The study found that policies promoting STEM education, apprenticeships, and skills development programs significantly improved graduate employability in high-demand sectors. Additionally, wage subsidies for employers who hire recent graduates were found to increase employment rates among new graduates, especially in industries experiencing labor shortages. These findings demonstrate the importance of policy interventions in balancing labor supply and demand to enhance employability.

Empirical studies provide substantial evidence of the critical relationship between labor supply, labor demand, and graduate employability. Mismatches between graduate supply and labor market demand can lead to unemployment and underemployment, while effective alignment of education programs with market needs can significantly improve employment outcomes. Strategies such as labor market forecasting, employer engagement in curriculum design, and lifelong learning are essential for ensuring that graduates possess the skills required by employers (Spence 1973). Government policies that support skills development and promote labor market flexibility further enhance the alignment of labor supply and demand, contributing to improved graduate employability.

Understanding the interplay between graduate employability, labor supply, and labor demand is crucial for addressing the challenges faced by graduates in securing meaningful employment. Empirical studies provide a valuable insights into these relationships within labor markets, highlighting factors that influence employability and the alignment between educational outcomes and market needs. This discussion synthesizes key empirical research on graduate employability, labor supply and demand, and their interrelationships in labor markets. Graduate employability refers to the ability of graduates to secure employment, maintain employment, and progress in their careers post-graduation. Several empirical studies have examined the factors influencing employability and the outcomes associated with it.

A study by Arulmani and Evans (2015) investigates the skills mismatch in the labor market and its impact on graduate employability. The research utilizes survey data from recent graduates in the UK, revealing that graduates often possess skills that do not align with employer expectations, leading to underemployment and job dissatisfaction. The study highlights the importance of aligning educational curricula with labor market demands to enhance employability.

Coll et al. (2009) conducted an empirical study on the impact of Work-Integrated Learning (WIL) on graduate employability. Using data from Australian universities, the study found that graduates who participated in internships, co-op programs, or apprenticeships had higher employment rates and better job retention compared to those who did not engage in WIL activities. This suggests that practical experience significantly enhances employability by bridging the gap between academic knowledge and workplace skills. Labor supply and demand are fundamental economic concepts that influence employment opportunities and wage levels in labor markets. Empirical research explores how these dynamics affect graduate employability.

Tomlinson (2017) examined the relationship between labor market demand and graduate fields of study across multiple countries. Using labor market data and graduate employment statistics, the study found that fields with high labor demand, such as healthcare and information technology, exhibited higher employability rates among graduates. Conversely, graduates in oversupplied fields like humanities faced greater challenges in securing employment, underscoring the need for strategic educational planning.

STUDY METHODOLOGY

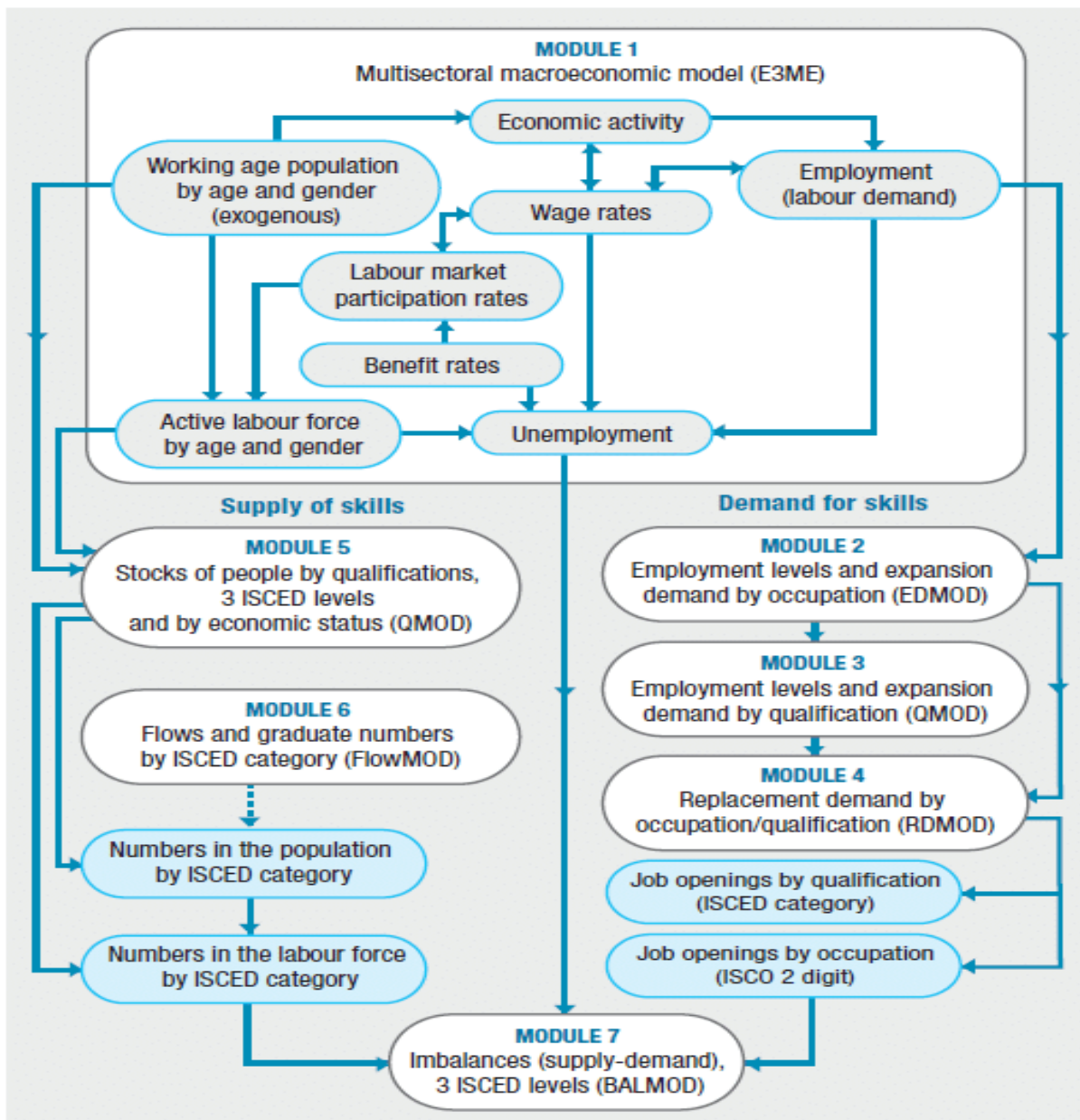
The study used mixed methods research involving both qualitative and quantitative research design. Pragmatism research paradigm was used as it gives flexibility for both an in-depth and breadth of the findings (Maxwell

2016). Pragmatism is pluralistic in nature and allows a use of combination of both numeric and non-numerical data (Cresswell & plano Clark 2011). Quantitative data was collected using questionnaires involving a sample of 800 respondents who were selected using simple random technique. The saturation point was reached at number 13 for qualitative samples Qualitative data was collected using focused group discussions, systematic observations and interview guide. A statistical package software called SPSS was used to analyses quantitative data while Inductive thematic analysis was used to analyze qualitative data (Cresswell & Poth 2017).

The Convergent Parallel Mixed-Methods Design was used that allowed data sets to be collected concurrently, and secondly, they are analyzed independently using quantitative and qualitative analytical approaches (Schoone boom & Johnson, 2017)

CONCEPTUAL FRAMEWORK

Figure 4.1 Conceptual Framework on Labour Supply & Demand Dynamics



Source: US Modelling on Labour supply, demand and Employability 2014

As conceptualized from figure 1.1 above, it can be understood that labour supply and demand are directly known as step by step process linking to employability on the broader labour markets scale. Labour supply and demand

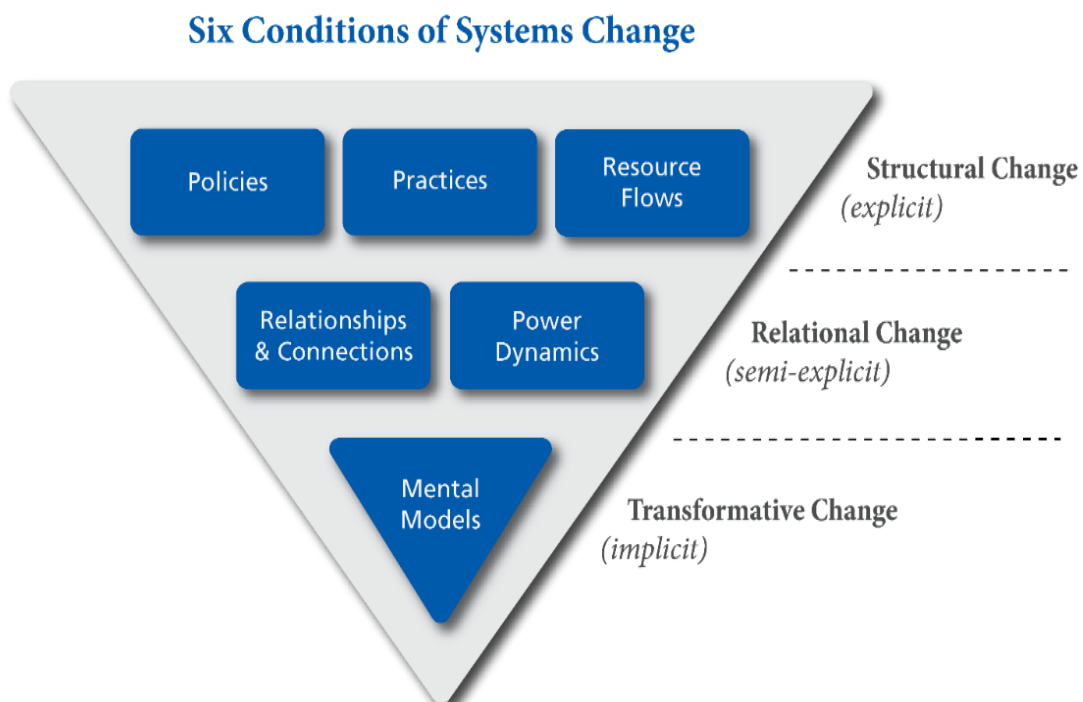
are the two predominant forces that wield influence to predict dynamics of both supply and demand leading to employability. The relationship amongst these variables begins with educations and training in form of human capital skills. When the skills are needed in line with industrial need, it creates a demand and that leads to employability. However, if there is skills mismatch whereby the skills being desired are different from those available, it tend to lead to unemployment as well as over supply of the skills not in line with labour markets needs. There is always need to strike a balance between labour demand and supply. Once there is a fair balance between supply and demand, it may lead to equilibrium, a status that suggest that supply and demand are equal. In order to enhance employability, there is need always to create high demand for labour. When there is high demand for labour, it often leads to enhanced employability, increased wages and levels of income thereby stabilisatin of the economic standards of living. When more citizens have decent jobs and work, they have Access to decent standards of living through easier Access to shelter, food, clothings, health and leisure.

THEORETICAL FRAMEWORK

A theory of transformation incorporates and integrates multiple theories of change operating at many levels that are knitted together, explain how major systems transformation occurs. They catalyse, connect, track, map, and evaluate networks and initiatives to generate critical mass tipping points toward transformation expected to be transitioning in order to meet the demand of society in a continuous manner. Times have changed when the society could remain generally uniform over the many years (Kania 2019). Policymakers, planners, management and regulatory authorities must engage institutions of higher learning based on the necessity to produce a highly relevant higher education system that produces relevant graduates who can add value to society.

The process is continuous, dynamic and proactive. The environmental scanning must be done regularly and the correct reading of the environmental dynamics so as to realign the graduate training and education in accordance with the specific societal demands.

Figure 5.1 Conceptual Framework: Transformative Theory Structural Model



Source: (Adapted from Kania 2019)

Transformation change offers three (3) inter-relational and inter-twined layers of change namely structural change, relational change and transformative change.

- a) **Structural Change:** Essentially, at this stage there is a structural change which is explicit in nature and covers mainly the policies, practices and resources of the organisation both in the short- and long-term basis. With regular environmental scanning locally and globally one is able to read the trends in the economy and societal demand. Immediately the correct reality on the current community needs is established, new policies, practices and resources must be realigned in order to meet the exact demand of the quality. The skills, the knowledge, the creativity and allocation of resources to support the structural change come at this first layer.
- b) **Relational Change:** This is the second stage that involve the changes in the environment where the university or higher institution of learning operates from. There must always be a direct connection between the higher institution of learning and the community. The factors that dictate and influence quality education must be brought on board. The flow of power and its interconnectedness to reality must be redefined in order to realise the real benefits of transformational change. Management and all its key stakeholders must work together in order to achieve the goals of the higher institution of learning.
- c) **Transformative Change:** The final stage in the process of change is more of an abstract in nature because the mindset is engaged to conceptualise that real need to change for the better. This stage is implicit in nature and it calls for great capabilities of creativity and innovations. The systems of transformative educational change require a great deal of imaginations. Since science and technology is involving extremely fast and so is the teaching career. We need great thinkers out of the successful teaching educations. We need to produce thinkers that will bring solutions to the real world of change. Teachers that are not only highly employable but also able to create employment for others. The whole value change of teacher education must be characterized with great ingenuities of creativity and innovations. This begin with the mindset that is able to the read the economical, sociological and political dynamics is need to operationalise this implicitly change.

In view of this transformative change, we can deduce that the philosophical construct where this study is anchored is grounded on the basis of the fact that institutions of higher learning are not static in nature, but dynamic, organic and highly responsive to the environmental factors within the domain where the higher institution of learning is operating from.

STUDY FINDINGS

Testing the Research Hypothesis on graduate additional Skills for Employability on the Labour Markets

H0: Graduate teachers do not have additional skills for employability on the labour markets.

H1: Graduate Teachers have additional skills for employability on the labour markets.

Table 1.1 Testing Statistical Significance on Graduate Teachers Education and Additional Employability Skills

Table 6.1 below shows a regression analysis between the graduate teacher’s education and Additional Employability Skills.

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.125	1	4.125	3.391	.066 ^b
	Residual	812.593	668	1.216		
	Total	816.718	669			
a. Dependent Variable: Additional Employability Skills						
b. Predictors: (Constant): Graduate Teacher Education						

Source: field data

With the F-Value of 3.391 which corresponded to the P-Value of 0.06599, we can deduce that results obtained did not have statistical significance at the 0.05 confidence levels. There wasn't enough evidence to reject the null hypothesis and as such we failed to reject the null hypothesis. The regression analysis confirms that graduate teachers do not have additional skills for enhanced employability on the labour markets within the education sector. The traditional graduate teacher's education requires to undergo radical transformational process in order to build the levels of competencies amongst the graduate teachers for employability even outside the teaching profession.

We have the F-Value of 3.391 that correspondents with the P-Value of 0.06599 which is greater than the significance levels of 0.05 and as such we do not reject the null hypothesis. Graduate teachers do not have additional skills for possible employability within or outside the labour markets of the education industry.

Table 6.2 Testing Statistical Significance on the Measures to Enhance Graduate Teacher Education for Employability

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
(b) Introduce foreign Language Skills to empower teachers for international competitiveness	Between Groups	53.942	1	53.942	14.157	0.000
	Within Groups	2579.489	677	3.810		
	Total	2633.432	678			
(c) introduce Intensive, comprehensive and localized practical entrepreneurial skills	Between Groups	5.529	1	5.529	3.956	0.048
	Within Groups	394.133	282	1.398		
	Total	399.662	283			
(d) Prioritize Upskilling & reskilling of graduate teachers for enhance employability	Between Groups	4.125	1	4.125	3.891	0.0490
	Within Groups	812.593	668	1.216		
	Total	816.718	669			
(e) introduce robust skills in Innovation, research & Creativity		1.494	1	1.494	4.856	0.0279
	Within Groups	924.008	677	1.365		
	Total	925.502	678			
(f) Build a viable curriculum centered on industrial practice	Between Groups	0.557	1	0.557	5.24	0.0224
	Within Groups	935.602	677	1.382		
	Total	936.159	678			
(g) stop producing graduate teachers for now in order to create a balance labor supply and demand	Between Groups	2.072	1	2.072	0.742	0.389
	Within Groups	1872.870	671	2.791		
	Total	1874.942	672			
(h) regulate net numbers enrollments in all higher learning institutions in order to control labor supply & demand	Between Groups	1.506	1	1.506	7.052	0.0081
	Within Groups	1042.526	594	1.755		
	Total	1044.032	595			

(i) Develop viable mentorship programs to build employer orientation acumens, & competencies amongst graduates as opposed to employee orientations	Between Groups	0.983	1	0.983	4.731	0.0300
	Within Groups	910.436	677	1.345		
	Total	911.420	678			
(j) introduce strict measures to regulate HEI on infrastructures, curriculum & quality	Between Groups	1.510	1	1.510	7.811	0.0055
	Within Groups	525.377	282	1.863		
	Total	526.887	283			
(k) Improve quality assurance standards, systems, protocols & processes to enhance production of quality graduates	Between Groups	2.673	1	2.673	5.505	0.0192
	Within Groups	1098.544	677	1.623		
	Total	1101.216	678			
(l) Develop strong Linkages that network local skills needs and specific specialization	Between Groups	0.163	1	0.163	6.125	0.0129
	Within Groups	989.908	677	1.462		
	Total	990.071	678			

Source: Field data

The above shows the results from the ANOVA analysis confirming that graduate teacher can be enhanced through introduction of language skills, introduction of comprehensive entrepreneurial skills, additional employability skills, innovations, research skills, creativity and improvement of standards in quality and curriculum development. Furthermore, improvements in practical orientations in industrial based contents, mentorship of graduate into employer orientations, regulations on the contents of the graduate teacher education and strengthening the linkages between skill set demand and supply of labour.

The P-Values for these variables were found statistically significant thereby offering a solid basis to confidently confirm the suggestions for enhancing the graduate teacher’s employability on the labor markets of education.

DISCUSSION OF THE STUDY FINDINGS

The labor market increasingly demands graduates with versatile skill sets that go beyond technical expertise. Entrepreneurship skills, research and innovation capabilities, and foreign language proficiency collectively empower graduates to adapt, excel, and contribute meaningfully in a competitive global economy. Entrepreneurship involves the art and the ability to identify opportunities, develop business ideas, and implement them effectively. Graduates with entrepreneurial skills are equipped to start their ventures, creating employment opportunities for themselves and others. These skills foster resilience, creativity, and problem-solving abilities, which are highly valued across all industries. Further, graduates can apply entrepreneurial mindsets within organizations by driving innovation and process improvements. Generally, Employers value candidates who demonstrate initiative, risk-taking, and the ability to deliver results in dynamic environments. Research skills, innovations and creativity are critically needed in the modern job market environment. The ability to analyze data, think critically, and develop solutions through creativity and evidence-based approaches creates a difference amongst the job prospects on the labour markets. Graduates wish such rare skills significantly become more marketable than any other ordinary ones. Research skills enable graduates to address real-world challenges, a capability that is highly sought after in sectors like healthcare, technology, and education. Creativity in developing new products, processes, or services adds value to businesses, driving competitiveness and growth the levels of excellence. As economies shift toward knowledge-based industries, graduates with strong research

skills are in higher demand for roles in R&D, analytics, and policy-making. Graduates skilled in research can seamlessly transition between academia and industry, providing unique perspectives and solutions. Proficiency in one or more foreign languages for effective communication in multicultural and international contexts.

Language skills open up job prospects in multinational corporations, international trade, and diplomatic roles. Understanding diverse cultures fosters better collaboration and reduces barriers in global business environments. Language proficiency enhances client relationships in industries such as tourism, customer service, and international sales. Being multilingual often sets candidates apart in the recruitment process, especially in sectors requiring cross-border interaction. The integration of entrepreneurship, research and innovation, and foreign language skills equips graduates with the tools to thrive in a dynamic labor market. They can create their own opportunities, excel in multinational environments, and contribute to organizational growth and innovation. By fostering these skills, educational institutions and policymakers can ensure graduates are not just employable but also indispensable in the global workforce.

Graduate employability is shaped by a multifaceted educational ecosystem. A well-designed curriculum, robust infrastructure, stringent quality assurance, effective regulation, and targeted skills development aligned with specialized market demand collectively create an environment where graduates are better equipped to meet labor market needs. A curriculum designed to match industry trends ensures graduates are job-ready. For example, incorporating emerging fields like artificial intelligence, renewable energy, or digital marketing prepares students for high-demand sectors. Integrating internships, capstone projects, and case studies bridges the gap between theoretical knowledge and practical application. Embedding soft skills, critical thinking, and technical expertise into the curriculum ensures holistic development. Modern labs, libraries, and digital resources enable hands-on learning and innovative research, critical for technical and specialized roles. Smart classrooms, virtual labs, and access to advanced tools prepare students for tech-driven industries. Infrastructure supporting collaborative spaces for industry-academic partnerships facilitates real-world exposure and networking opportunities. Ensures academic programs meet national and international benchmarks, building employer trust in the competence of graduates. Regular assessments and feedback loops improve course content, teaching methods, and institutional performance. Transparent evaluation mechanisms encourage institutions to maintain high standards in pedagogy and graduate outcomes. Regulations ensure institutions deliver accredited programs and discourage the operation of unregulated entities that compromise educational quality. Institutions that align skill development with market demand tend to produce graduates with niche expertise, such as cybersecurity, biotech, or sustainable architecture. Training in high-demand, evolving fields ensures graduates remain employable in a rapidly changing job market. Partnerships with industries allow real-time updates to training programs based on emerging job roles and technologies. Policy-driven alignment between academic offerings and economic needs ensures a workforce tailored to the country's growth priorities. Regulations ensure access to quality education across socio-economic groups, fostering a diverse and skilled workforce. Institutions that align skill development with market demand produce graduates with niche expertise, such as cybersecurity, biotech, or sustainable architecture. Training in high-demand, evolving fields ensures graduates remain employable in a rapidly changing job market. Partnerships with industries allow real-time updates to training programs based on emerging job roles and technologies

CONCLUSION

The primary aim of the study was to explore the existing linkages amongst labour supply, demand, employability and graduate education. By focusing on graduate education, the study explored the strategic measures that could be implored to improve graduate education thereby creating demand for the labour force while regulating supply for the same labour. It was established that graduate teacher employability can be enhanced through the improvement of the graduate teacher educations in transformative manner. This included the introduction of the multiple foreign language skills, mainstreaming of entrepreneurship skills, and expansion of the curriculum in order to make it more linked to the local labour needs. When there are skills in innovations, creativity and research, graduate quality would increase and that would create demand for increased employability. It was further found that graduate teachers lack additional employability skills and the levels of the skills mismatch was so high. In view of this conceptualization, it was highly recommended that the current graduate teacher education be improved through a total transformational process where all the skills and the required competencies be integrated into the curriculum for enhanced graduate teacher employability.

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