**ENGINEERING STUDENT SCHOOL-TO-WORK TRANSITIONS IN INDIA: AN INVESTIGATION**

A Research Concept Paper Proposal

Presented

by

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**INTRODUCTION**

## 1.1 Introduction

It is a known fact that transitions in life are never easy. Be it in life, school-to-work, job role, or career transitions. Every change during the transition requires understanding, preparation, initiation, and support to make them successful and satisfactory. One needs to prepare for any transitions by developing the skills and knowledge to apply them in a given context.

One of the keys to financial independence in life is the ability of an individual to move to work after school/college. It also helps the economic growth of the world. The work which provides meaning and purpose would lead an individual to get more engaged, thus helping to pursue a happy and satisfying career. The school/college programs offering up-to-date skills, knowledge, and industry exposure support the students for an effective transition from school to work. The industry engagement with academia in providing visibility to its needs on skills and knowledge in days/years to come and an opportunity for individuals to have first-hand experience of work while at college will help develop effective programs at schools/colleges. The research in the area helps in formulating policies for the Governments, designing school/college programs, assessing the effectiveness of the existing programs, and theoretical models that would form the basis for further improvements.

There are multiple stakeholders involved in the entire process of an individual moving from school to work. It includes parents, individuals, schools/colleges study and the program they offer, countries and their policies, labor market, and employers. Programs that facilitate this transition from school to work are popularly known as "School-to-work" Transitions.

There have been many research papers on aspects of School-to-work transition. Policies, sociology, learning outcomes, what influences school-to-work decisions/transitions, development of theories, demographic-specific nuances are of research interest over the years, though the list is not exhaustive.

The objective of this paper is to identify School-to-work transition-related areas for further exploration. This exploration should help bridge the gap today for the decision-making process for a set of stakeholders.

**PRELIMINARY LITERATURE REVIEW**

## 2.1 Preliminary Literature Review Objectives

A preliminary literature survey shows that past studies focused on understanding the school-to-work transitions in different contexts, countries, challenges, Theory to Practice, Capstone projects, vocational education, responses of universities to COVID19, and 21st-century skills. Some studies also covered the school-to-work transitions in immigrants, people with disabilities, and women.

The world is changing as there are systemic shifts with the potential to affect the nature of work. It is crucial to develop the skills that support an unpredictable landscape of the future. Vista (2020) explains the need for skill identification and quantification through some form of valuation. Vista's work also discusses an approach to skill valuation and its ability to facilitate occupational transitions as a measure of value.

Masdonati, Massoudi, Blustein, and Duffy (2021) aim to adapt and apply the Psychology of Working Theory to specificities of the school-to-work transition process through a conceptual contribution. They consider socioeconomic constraints and belonging to marginalized groups as contextual predictors of a successful transition. The paper discusses psychological resources, including self-efficacy and adaptability and vocational and work role identity as mediators followed by the education system, labor market conditions, social support, and critical consciousness as moderators, and finally decent and meaningful work as the optimal outcomes of the school-to-work process.

Through the international literature survey, in a book School-to-work transition by Bradley and Nguyen (2003), one of the key findings was that an individual exam performance in school is the most critical determinant of the school-to-work transition. In a specific study in East Germany, researchers Barabasch and Lakes (2005) take an approach to apply Beck's theory of risk to argue that individuals in school-to-work transitions need to fend for themselves in careers and technical education. They also establish that unemployment is a structural condition influencing school-to-work transition among people looking for apprenticeships and better employment positions.

A significant amount of literature is available on the school-to-work transitions in the United States of America. Improving School-to-work transitions, edited by Neumark (2007), is a seminal compilation of research work, which draws on evidence from national longitudinal studies, surveys, interviews, and case studies specific to the United States of America. Considering all the stakeholders in school-to-work transitions, contributors measure the successes and failures of the "90s-era school-to-work" initiatives and provide an assessment of how educational institutes and government can help youths make a smoother transition into stable, well-paying employment. In Chapter 2, contributors emphasize the diverse needs of different demographic groups in school-to-work transitions, particularly immigrants, and the need to focus on the same. Chapter 4 of the book, contributors investigate the impact of school-to-work programs on the "forgotten-half" students at the highest risk of not attending college. In chapter 8, contributors study the gap between the skills in entry-level jobs supposedly "low-skilled" and the reality of the extensive skills in reading, writing, and math, as well as the 'new basic skills' of communication and problem-solving.

Enabling technologies to achieve student-centered learning in preparing for school-to-work transitions at the universities provides opportunities along with challenges. Hutchings and Quinney (2015) explore maneuverings for effective change management in adapting to disruptive pedagogies and enabling technologies that minimize risk factors associated with ‘flipping the classroom’ for transformative learning. They also recognize the importance of individual, cultural, and strategic shifts as necessities and means for generating and sustaining change.

Job search and employment outcomes are part of the School-to-work transitions. To decipher the relationship between these two for Australian graduate students Carroll (2013) examines monetary outcomes associated with different job search methods. In addition, five broad types of job search methods have been investigated in the paper: advertisements, university-based methods, networking, direct employer contact and, other methods.

School-to-work transitions in developing countries play a crucial part in the world economy. Nilsson (2019) shows that a few theoretical models without empirical testing are the basis for school-to-work transitions in developing countries. He also affirms that education is not always associated with a shorter duration of first employment, while the reasons could be higher expectations, reservation wages, or queuing.

To identify the gaps between the industry and academia, Shurin, Davidovitch, and Shoval (2021), examine the Capstone project in the undergraduate studies in engineering in the context of Industry 4.0 specific to product development. They also suggest having an optimal duration for the project and defined milestones that would support independent learning.

To include the Individual(s) with Disabilities (IWDs) in the discussion of school-to-work transitions, Kerns (2021) addresses the lack of planning process, unemployment, and perceptions and experiences of country service providers regarding community employment through a qualitative case study. The study helped with a resource kit for parents of IWDs for better planning school-to-work transition and a policy paper for educators to assist IWDs with the engagement of employment opportunities.

Dietrich, Patzina, Chesters, and Reissner (2021) analyze subjective well-being during different school-to-work transitions taking gender differences into account in Australia. The results show an increase in subjective well-being with the transition to employment and on the contrary a decrease with the transition to unemployment. Overall the results reveal elevated intra-individual fluctuations in subjective well-being during school-to-work transitions.

Jackson and Li (2021) , aim to understand how universities and organizations have responded to the impact of the COVID-19 pandemic in preparing the students. It offers some first findings on COVID-19 pandemic impact, helping to ensure that organizational behavior and career theory literature indicate the dramatically changing landscape in the university-to-work transition.

In India, engineering is popular stream of study for many young people as it has provided jobs in the growing sector of Information Technology and IT Enabled Services. According to Statista (Statista Research Department, 2021a), 3.2 million students have enrolled in 5 disciplines of engineering in the year 2019. It also gives another alarming statistic that 46.58% (Statista Research Department, 2021b) of engineering graduates were unemployed in 2021. There is an expected marginal increase in the unemployment rate given the COVID-19 disruption. However, engineering unemployment is a concern that needs attention. A deep dive for investigation and research should help to suggest changes that would improve employment from a School-to-work transition perspective in India.

**DISCUSSION AND CONCLUSION**

## 3.1 Discussion

 Engineering education has a long history and evolved over the years in India. Engineering education dominated in Tier 1 cities in India in the early years since independence in 1947, and it has spread its wings to Tier 2, Tier 3, and rural settings in India. As the number of institutes grew non-linearly, many institutes plague issues with quality, facilities, infrastructure, qualified staffing, industry connections, and placements.

 Students get admitted to engineering colleges through various channels. They include entrance examination at national-level, state-level, based on the merit in previous qualifying examination, and direct admission as long as they have qualified to join with a payment of capitation fee. The branches they get to join also depend on various factors like the rank received, the reputation/rank of the college, job-market demand to name a few.

 Training and Placement officers play a crucial role in preparing the students during the last two years of engineering. The students go through various training programs, skill development, and connecting with industry to prepare for writing the eliminating tests followed by interviews for job opportunities.

 Family and friends have a significant influence on the student in the decision-making process. It starts with a decision to become an engineer till the placement process.

## 3.2 Conclusion

The study intends to work with a group of key stakeholders through surveys and semi-structured interviews to identify the factors that promote and inhibit employment opportunities for engineering students to make effective school-to-work transitions. It also intends to reach out to the students who have completed the school-to-work transitions five years ago, one year ago, and finally, students who will be part of this process a year from now to gather insights for the research.

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