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**GovHack 2024**

**Project Documentation: Investigating the Factors Influencing Post-School Education Choices in Australia**

**Problem Statement:**

In Australia, young people's decisions regarding post-school education, including Vocational Education and Training (VET) and apprenticeships, are influenced by multiple factors. These factors range from educational background, financial and employment situations, proximity to educational institutions, and more. To effectively address these considerations, we must analyze the underlying influences and trends driving these choices. Understanding these factors will help develop strategies to ensure that all young Australians can access the educational and training opportunities best suited to them, regardless of their individual circumstances.

The challenge is to assess these key influences, develop data-driven insights, and help education providers, policymakers, and career advisors tailor their services to the needs of young Australians, particularly those who may face barriers to access, such as financial constraints or geographical distance from institutions.

Our focus areas include:

1. **Education Accessibility Strategy**: Investigate the factors impacting decisions on post-school education and how these choices differ based on various individual circumstances, including educational attainment, employment history, financial situation, health, and housing.
2. **Effectiveness of Vocational Education and Training (VET) and Apprenticeships**: Evaluate how well these pathways meet the needs of young people, considering their varying backgrounds and goals.
3. **Proximity Considerations**: Understand how geographical location and proximity to educational institutions influence young people’s choices and accessibility to higher education or training programs.

The government currently possesses data on educational attainment and employment, but a deeper understanding of young people’s preferences, financial constraints, and accessibility challenges requires additional analysis.

**Project Description**

Our project aims to explore and illuminate the factors influencing young people's decisions regarding post-school education in Australia. This includes Vocational Education and Training (VET) programs and apprenticeships. By harnessing data from various sources, we will develop a platform to help educators, government agencies, and career advisors better understand the choices young Australians are making and what can be done to support them more effectively.

**EduPath** is an innovative and interactive mobile and web application that connects young Australians with personalized education pathways based on their unique situations. The app assists users in making informed decisions about further education and training, while simultaneously providing the government with data-driven insights to optimize education policies and resource distribution.

Key features include:

* Personalized recommendations for post-school education paths.
* The ability to track financial aid, employment opportunities, and nearby education institutions.
* Data visualization tools to help users and the government better understand trends and decision-making factors among youth.

Our mission is to facilitate greater access to educational opportunities for young people, regardless of their background or location, helping them pursue paths that align with their aspirations and circumstances.

**Goals**

Our key goals for the **EduPath** platform:

* **Visualization of Education and Training Options**: Create an intuitive platform that provides a map of educational institutions, VET centres, and apprenticeship opportunities across Australia, overlaid with key data on user preferences and accessibility challenges.
* **Interconnect Users and Government**: Enable feedback and data-sharing between users and government agencies through user input and interaction, helping shape more responsive educational policies.
* **Data-Driven Insights**: Generate comprehensive reports for policymakers based on user input, helping governments understand the barriers young people face when accessing education and training.

**Data Story**

**Data Story: Understanding the Factors Influencing Post-School Education Choices in Australia**

**The Challenge and Goals**

The challenge lies in investigating how different factors influence the decisions of young Australians regarding post-school education, VET, and apprenticeships. Factors include prior educational attainment, employment history, financial situation, health conditions (including disabilities), housing situation, and proximity to universities or training centers. Our goal is to develop a comprehensive data-driven index system to better understand these influences and help optimize educational support strategies for young Australians.

**Data Gathering and Preparation**

To address this challenge, we have gathered the following key datasets:

* Educational attainment data.
* Employment statistics (both current and historical).
* Financial and housing data relevant to young people.
* Health-related data, including information on disabilities.
* Geospatial data on proximity to educational institutions, universities, and training centers.

These datasets form the foundation of our analysis, allowing us to assess how these factors interrelate and influence young people’s choices regarding post-school education.

**Developing the Education Access Index (EAI)**

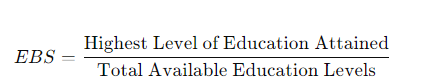
The **Education Access Index (EAI)** is a comprehensive metric designed to quantify the accessibility and likelihood of young Australians choosing specific post-school education pathways, such as university, Vocational Education and Training (VET), or apprenticeships. The EAI combines multiple factors that influence these decisions, providing a unified score that highlights areas and individuals who may face barriers in accessing education and training opportunities.

**Key Components of the EAI**

The EAI is composed of five key factors, each contributing to the overall score. These factors are weighted based on their relative importance in influencing educational decisions:

1. **Educational Background Score (EBS)**
   * **Definition**: This score reflects an individual's prior educational attainment, such as high school completion or previous vocational training.
   * **Calculation**: A higher score is assigned to individuals with a stronger educational background (e.g., completion of high school or equivalent qualifications).
   * **Rationale**: Individuals with higher educational backgrounds are more likely to pursue advanced studies, such as university, while those with lower attainment may prefer vocational training or apprenticeships.

**Formula**:



1. **Employment Stability Score (ESS)**
   * **Definition**: This score measures an individual's current employment status and their employment history.
   * **Calculation**: Scores are higher for individuals with stable employment histories or current full-time employment. Unemployed individuals receive a lower score.
   * **Rationale**: Employment status influences the ability to afford education or take time off to study. Those with stable jobs may be inclined to upskill, while unemployed individuals might seek job-ready qualifications through VET or apprenticeships.

**Formula**:

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1. **Financial Situation Score (FSS)**
   * **Definition**: This score evaluates an individual's financial capacity, including income level, access to financial aid, and family support.
   * **Calculation**: Individuals with higher incomes, or those with access to financial aid (scholarships, government support), receive a higher score. Those in financial distress or without financial aid receive a lower score.
   * **Rationale**: Financial constraints can limit access to higher education, particularly for university pathways. Those with limited financial resources may prefer less costly options like VET or apprenticeships.

**Formula**:

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1. **Health and Disability Score (HDS)**
   * **Definition**: This score reflects any physical or mental health conditions that may limit an individual's ability to pursue education, particularly in-person or full-time education.
   * **Calculation**: Individuals with no health issues receive the highest score, while those with significant health conditions that limit their educational options receive a lower score.
   * **Rationale**: Health conditions, including disabilities, can restrict the type of education that is accessible. For example, individuals with disabilities might prefer flexible or online learning pathways, while those in good health may have a wider range of options.

**Formula**:

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1. **Proximity Access Score (PAS)**
   * **Definition**: This score measures the geographic proximity of an individual to post-school education institutions, including universities, TAFE, and VET centres.
   * **Calculation**: Individuals living near education hubs receive a higher score, while those in rural or remote areas receive a lower score.
   * **Rationale**: Proximity to educational institutions plays a significant role in determining accessibility, particularly for in-person programs. Remote individuals may be more reliant on online options or may face higher barriers to accessing education.

**Formula**:

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**Overall EAI Calculation**

The overall **Education Access Index (EAI)** is a weighted combination of these five factors. Each factor is assigned a weight based on its relative importance, reflecting the impact it has on education accessibility. The formula for the EAI is:



Where:

* are the weights for each score, determined based on empirical analysis or expert opinion.
  + **Proposed Weights**:
    - **Educational Background Score (EBS)**: 25%
    - **Employment Stability Score (ESS)**: 20%
    - **Financial Situation Score (FSS)**: 25%
    - **Health and Disability Score (HDS)**: 15%
    - **Proximity Access Score (PAS)**: 15%

**Interpretation of the EAI**

* **Higher EAI Scores**: Individuals or regions with higher EAI scores face fewer barriers to accessing post-school education. These areas may have strong educational backgrounds, financial stability, proximity to educational institutions, and minimal health constraints.
* **Lower EAI Scores**: Individuals or regions with lower EAI scores face significant barriers, such as financial instability, remote locations, health challenges, or limited employment history. These areas should be targeted for additional support, such as scholarships, improved transport links, or online education initiatives.

**Strategic Deployment Based on EAI Insights**

The **EAI** allows policymakers and educational institutions to:

* Identify regions and demographics with low accessibility to education.
* Prioritize interventions, such as financial aid, transport solutions, or increased online learning opportunities, to support individuals in low-scoring areas.
* Tailor educational offerings based on the most critical factors affecting accessibility in each region (e.g., improving local VET programs for rural areas or providing more financial aid in low-income communities).

By using the **Education Access Index**, stakeholders can make informed decisions to reduce educational inequities and ensure that young Australians from diverse backgrounds have the opportunity to pursue the education and training paths that best suit their needs and circumstances.

**Our Mission**

At EduPath, our mission is to create an accessible, data-driven platform that empowers young Australians to make informed decisions about their post-school education and training pathways. By providing personalized recommendations and insights, we aim to reduce barriers to education and help shape a future where all young Australians can pursue their goals, regardless of their background or circumstances.

**Conclusion**

Through EduPath, we seek to bridge the gap between young Australians and the education systems designed to support them. Our platform not only empowers individuals but also provides governments with valuable data to make more informed decisions about education policy and resource allocation. By working together, we can ensure that every young person in Australia has the opportunity to reach their full potential, regardless of their financial, geographical, or personal challenges.

Datasets that will be used:

**NCVER Data Builder**: Vital for vocational education, apprenticeship participation, and employment outcomes specific to VET programs.

**ABS Education and Work**: Crucial for understanding educational attainment, employment status, and work-study combinations.

**ABS Qualifications and Work**: Focuses on how qualifications influence job outcomes.

**ABS Census Data**: Use geographic and demographic data for location-based accessibility and regional trends.