InsPIRE Insight

Learning analytics for bridging the skills gap: A data-driven study of undergraduate aspirations and skills awareness for career preparedness

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KEY IMPLICATIONS

- Learning analytics can better align educational outcomes with industry demands, improving students' readiness for their future careers.

- Identifying discrepancies between students' perceived and actual skill levels, enables targeted interventions to address these skill gaps overall competency development.

- Learning analytics methods can inform curriculum design and support services, ultimately fostering a more effective learning environment.

BACKGROUND

In today's rapidly evolving workforce demands, undergraduate students face increasing challenges as they transition from academia to the workforce. Technological advancements and shifting industry demands necessitate not only academic knowledge but also practical and transferable skills for career success. Understanding and addressing the gap between students' career aspirations and their preparedness is crucial for educators, policymakers, and employers.

FOCUS OF INITIATIVE

This initiative aimed to investigate the alignment between undergraduate students' career aspirations, their awareness of required skills, and the role of higher education institutions in bridging the skills gap. By employing learning analytics, the study sought to provide data-driven insights into how universities can better support students in achieving their career goals.

KEY OUTCOMES

- Students often lack awareness of the specific skills required for their chosen careers.

- Perceptions of university support in skill development vary significantly among students.

- Learning analytics methods, such as hierarchical clustering and k-nearest neighbors, effectively identify patterns in students' career preparedness.

SIGNIFICANCE OF OUTCOMES

Implications for practice: Universities should implement targeted programs that enhance students' awareness of necessary career skills and provide resources to develop these competencies.

Implications for policy: Educational policies should emphasize the integration of practical skill development within academic curricula to ensure graduates are better prepared for the workforce. Importantly, these need to be dynamic to fit the rapidly changing demands from industries.

Learning gains: By aligning educational experiences with career aspirations, students can achieve greater engagement and improved readiness for post-graduate employment.

Proposed follow-up activities:

1. Conduct longitudinal studies to track the effectiveness of implemented support programs. This includes involving graduates in these long-term studies.

2. Develop workshops or tools that focus on skill awareness and development tailored to various career paths where students map their academic experiences to job roles, identifying gaps and strengths.

3. Utilize advanced learning analytics to continuously assess and improve career preparedness initiatives.

PARTICIPANTS/SCOPE

The study surveyed 143 undergraduate students aged 18 to 25 at Nanyang Technological University, Singapore, who were in the process of applying for internship placements, typically occurring one to one and a half years before graduation.

METHODOLOGY/APPROACH

A comprehensive survey was conducted to collect data on students' career aspirations, awareness of required skills, and perceptions of university support. The study employed machine learning techniques, including hierarchical clustering and k-nearest neighbors for classification, alongside non-parametric statistical analyses such as the Mann–Whitney U and Chi-squared tests, to analyze the data and uncover patterns in students' career preparedness.

References

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The Future of Jobs Report 2025 `https://www.weforum.org/publications/the-future-of-jobs-report-2025/`

Link to full article (if available): `https://doi.org/10.3390/educsci15010040`
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