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Degree no guarantee of higher income when it comes to STEM: study

By: Nicole Madigan | in News, Top Stories | April 16, 2019 | 0

While there is a generally accurate perception that tertiary qualifications will earn you a higher income in the long run when compared with higher-level vocational training, the reverse is true when it comes to careers in STEM, according to new research.

The National Institute of Economic and Social Research published the findings, which showed that earnings of people achieving higher-level vocational qualifications in STEM subjects can exceed those of people who pursued the same subjects at a university level.

The report, published by NIESR researchers affiliated with the Centre for Vocational Education Research, was based on the first comprehensive study comparing the earning outcomes of young people pursuing higher vocational qualifications with those of degree holders.

Analysing data from hundreds of thousands of English secondary school leavers the research finds that by age 30, earnings of degree holders in many subject areas are consistently higher than those of people with higher vocational qualifications.

However, people achieving Level 4-5 qualifications in STEM subjects earn more than people with degrees from many universities.

"Our results show that initially higher earnings observed for people achieving higher vocational education disappear when people are in the mid-twenties," says NIESR's associate research director and co author of the report, Stefan Speckesser.

"Depending on the type of university attended, male degree holders earn up to 18 per cent more by age 30, while female graduates earn around 40 per cent more.

"However, there is considerable heterogeneity by gender and subject area.

"There are high returns related to higher vocational/technical education in STEM subjects, which remain significantly above those of many degree holders by age 30," he said.

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People with higher-level vocational qualifications (i.e. Level 4-5) overall show relatively high earnings early in their working lives because more of them work before or during their studies.

This is very different to degree holders, who are more likely to pursue full-time education up to the end of their studies.

Over time, average earnings converge and eventually are higher for degree holders.

"This study is in line with previous findings, but sheds new light on the topic given the richness of the data and the novel focus on tertiary education in England – higher technical education vis-à-vis academic degrees.

"This paper provides for the first time estimates for higher-level technical qualifications relative to university degrees."

Speckesser says there is a perception that university garners higher incomes over time, which is generally accurate and has been proven by previous studies.

"The (high) returns to university degrees have been studied before, mainly in contrast with earnings of people without tertiary education.

"Also, the expansion of higher education has responded to some extent to a higher demand for graduates (which translates into higher earnings).

"Furthermore, higher education is associated with other benefits (not only monetary returns, e.g. better health, crime reduction, etc.), which have been successfully exploited by universities and fostered by policymakers.

"In that sense, the perception that university education can lead to positive outcomes is not misleading."

However, in this context, within tertiary education, higher-level technical qualifications emerge as an alternative.

"When looking into results by subject, we find that earnings of males with Level 4-5 Science, Technology, Engineering and Mathematics qualifications are comparable or higher than earnings of STEM degree holders by age 30."

Speckesser says rapid technological change is one of the key contributing factors to why STEM related-careers have emerged as an exception to the rule.

"High demand from employers in the context of rapid technical change, and higher-level technical qualifications focus on skills that target specific jobs.

"University degrees are associated with general and more abstract knowledge, i.e. transferable skills.

"[Another reason is] not enough skilled workers in the labour market. This relates to not enough women taking these subjects and occupations."

But that doesn't mean those seeking a career in STEM should shun university education, says Speckesser.

"Higher technical education and academic general education are complements to some extent. They are not perfect substitutes."

Speckesser says data on earnings outcomes are extremely valuable as young people and their families approach the choice of higher education.

"Higher vocational education offers an important – if massively under-explored – alternative choice of tertiary education, often run by local colleges and resulting in lower debt for students compared to those incurred by degree holders or, if within an apprenticeship, no debt at all because of employer funding.

"Our study shows that for young people interested in specific professional roles, higher vocational education could indeed offer useful, cheaper and ultimately more lucrative alternative to university.

"Further research should identify market failures and influence policy making. This is an ongoing investigation."

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