

Segment One

Sector: Engineering and Advanced Manufacturing

Executive summary:

This Executive Summary report presents an overview of the existing skills provision and in the Advanced Manufacturing and Engineering sectors within the Leeds City Region. It provides findings based on the research to date (as of April 2020) to inform key strategic decisions related to skills development to inform the next stages of the project.

This summary report outlines:

- Existing skills provision;
- Predicted changes to skills needs from employers (including consideration of the COVID-19 pandemic); and
- Evidence of supply/demand, gaps and skills mismatch.

Summary of Approach

The main research tools were desk research, sector forums and in-depth telephone interviews. The secondary data included a review of the current landscape at a regional level with regard to the profile of the sector, evidence of supply/demand, gaps and skills mismatch.

To supplement the desk research, in-depth qualitative telephone interviews were undertaken with Joint Venture Colleges, The University of Huddersfield and a small number of employers. These interviews were analysed and combined with the desk-based evidence.

To further enrich the findings and explore key issues in greater depth, evidence was also gathered from sector forums (delivered in 2019) with chemical manufactures.

Key Findings

This section will draw out the key findings in relation to the gaps in provision and areas to explore further with the Collaborative Skills Partnership (CSP). Table 1 summarises the gaps in provision outlined in the main report.

Table 1 - Summary of gaps in provision identified in this research

Apprenticeships/technical , professional	Skill Type	Level
Apprenticeship	Higher level apprenticeships in Engineering and Manufacturing	4+
Apprenticeship	Apprenticeships in Advanced Manufacturing	4+
Apprenticeship	Apprenticeships in Glass Manufacturing/Processing	All levels
Apprenticeships	Apprenticeships in Automotive Manufacturing	All levels
Technical, professional	Higher level engineering and manufacturing qualifications	4+
Technical, professional	Automotive Manufacturing	All levels
Technical, professional	Robotics	
Technical, professional	Computer Aided Manufacturing (CAM) and use of ICT and programming	
Technical, professional	CNC and tuning and milling	
Technical, professional	Process operations	
Technical, professional	Control and Instrumentation (C&I) Engineering for the chemical sector	Higher levels
Bespoke	Flexible and tailored to the needs of the business	

There is a well-documented shortfall of engineering talent therefore addressing the issues of replacement demand is critical. This research suggests that employers face difficulties finding staff with technical and practical skills and with an ageing workforce and a lack of young people entering this labour market this is further compounding the issue.

Interviewees cited other challenges for the sector such as increasing automation and the use of robotics to manufacture products. This is leading to an increased need for training to address the skills needed for the changing sector.

The research shows a wide offering in relation to Computer Aided Design (CAD) but a limited offer for Computer Aided Manufacturing (CAM) and robotics. Leeds City College and Kirklees College described their departmental plans for investments in electronics and new digital robotics training pathways. These are areas that being explored further to identify the linkages with the Let's Talk Real Skills project.

Higher skilled occupations within engineering occupations saw the strongest growth between 2012-2018, in the future, the qualification levels of new entrants to the sector will need to be higher than the people they replace. Currently, the vast majority of apprenticeships and technical/professional qualifications are being offered by the colleges at Levels 2 and 3. This emphasises the importance of higher-level apprenticeships and technical/professional qualifications (Level 4+) being more readily available from the colleges in the region.

Both businesses and colleges agreed that there is not one solution to encourage young people into the industry and to expand the training offer, multiple processes were needed, including businesses working with the colleges to deliver relevant and up-to-date training, and education of students to raise awareness of the work opportunities in the sector.

Calderdale and Kirklees Manufacturing Alliance (CKMA) (the lead for the CSP) are committed to the skills, training and apprenticeship agenda in the region for Manufacturing and Engineering companies. Their proposed project will provide the much needed joining up and partnership between the colleges and employers in the region. The next steps are to take this pilot project forward.

Advanced Manufacturing is expected to grow over the coming years. Wakefield College has a comprehensive offer for Advanced Manufacturing at the lower levels, however, there is an evident lack of higher-level qualifications offered by the colleges, with the exception of Selby College who offer a Higher Apprenticeship in Advanced Manufacturing Engineering.

National and local research suggests to address the skills shortages and gaps Advanced Manufacturing training should focus on the key occupations in the sector, such as, production managers/directors, biological scientists, biochemists and production and process engineers/operators. It was clear from the discussions in the Chemical Manufacturing Sector Forum that increasing the local provision in process operations and control and instrumentation are important first steps to address the skills deficit. This is an important area for further discussion with the CSP.

None of the colleges offer Automotive Manufacturing training however, Calderdale College, Leeds City College and Craven College offer Automotive Engineering mainly around vehicle maintenance.

There are no local training providers that offer the Apprenticeship Frameworks for the Glass Industry – Glass Manufacturing and Glass Processing. These Apprenticeship Frameworks both expire for new starts in August 2020 and there are no replacement standards in the pipeline. Wakefield College would like to focus on developing these standards using the LTRS Collaborative Investment Funding. This is an important area to be taken forward over the coming months.

In the short term, the COVID-19 pandemic is having a significant impact on the delivery of Engineering and Advanced Manufacturing courses, as they are predominantly classroom based. Businesses are less inclined to want to undertake training as they have more pressing issues around cash flow and lack of additional funds to pay for the training. For the businesses that are accessing online training, concerns focused on the quality of that training and the value of electrical and mechanical training delivered purely online.

Apprenticeships are a key means for employers to grow their own skills, particularly in areas of skills shortage such as Engineering and Advanced Manufacturing. However, with the COVID-19 pandemic, businesses are halting the recruitment of apprentices, this may lead to longer term implications on skills, but the full scale of the consequences remain unknown.

Next Steps and Recommendations

At this interim stage of the work, the report provides a snap shot of the provision and views of providers. This report does not attempt to present definitive conclusions as the research is still on going.

This research has provided a much-needed investigation into the provision in the region, however, this has inevitably been restricted in the depth to which any one of the subsectors of Engineering and Advanced Manufacturing could be explored. Further in-depth analysis of the Automotive Manufacturing sector is required to understand what providers out of the region are offering (e.g. Industry Forum), and how this aligns with the businesses needs in this area.

An outline of the existing skills provision is provided, but this will need to be revisited in six to twelve months' time to ensure that the provision is still available following the COVID-19 pandemic.

At the time of writing this executive summary (April) interviews had not been conducted with the North Yorkshire Colleges and Universities in the region and the provision has not as of yet been mapped at a university level. Suggesting scope for further exploration over the coming months.

The findings from this report have been used to inform the Action Plan for the next stages of the project and Segment 2.

The next Segment of this project will aim to develop an understanding of the nature and industry demand for skills, training and qualifications in the Engineering and Advanced Manufacturing sectors. This will help to ensure supply meets employers demand and will be used to identify areas for training development.

Find out more about the Engineering and Manufacturing Collaborative Skills Partnership and get in touch through - <https://www.westyorkshirecolleges.co.uk/contracted-projects/lets-talk-real-skills/engineering-and-advanced-manufacturing>