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It's Not Your Grandad's Apprenticeship...

An apprentice as defined by *Technical Education Matters* is one who is bound by legal agreement to work for another for a specific amount of time in return for instruction in a trade, art, or business.

Apprenticeships in Britain started back in the Middle Ages and were closely related to the medieval craft guilds. Depending on the trade one was indentured in, an apprentice typically worked closely with a master craftsman for two to seven years. After successful completion of the apprenticeship, the apprentice became a journeyman. Interestingly, the term journeyman was derived from the French word for day, which is 'journee.' A journeyman was one who was paid "by the day" for his work. A journeyman could progress to a master craftsman after significant work experience and was at that time deemed qualified to teach others.

Apprenticeship flourished in Europe and became the standard for training for many occupations including: engineering, medicine, law, and skilled trade areas such as shipbuilding and artisan crafts like silversmith. In the U.S., apprenticeship was utilized, but not nearly to the extent it had been in Europe. The number of apprentices in the U.S. peaked in the 1960s when about 33 percent of males went into apprenticeable trades – mostly industrial in nature.

We have seen a decline in the use of apprenticeships in manufacturing in the U.S. since the 1990s. The most successful apprenticeship model used in the U.S. today is in the building trades, such as pipefitters and electricians. The building trades have seen continued success with their apprenticeship model so why the decline in its use in manufacturing? There are many factors that contributed to the decline, but one I see largely responsible is that the current registered trades for advanced manufacturing have not kept pace with the accelerating pace of technological

and scientific advances that are occurring daily in manufacturing.

In addition to the more traditional trades like Toolmaker and Welder, manufacturers need trades that reflect their current technological needs. Bausch and Lomb in Rochester, for instance, needs a hybrid apprentice. One that is part Maintenance Mechanic, part Electronics Technician, and part PLC/Computer technician. Enter the new New York State trade in Electro Mechanical Technician. MACNY member, Knowles, in Cazenovia, NY is also looking into this new trade. The Industrial Manufacturing Technician, usually referred to as the IMT, has just been introduced in New York State as well, for use as a comprehensive entry level training tool. Many firms across the state are eagerly waiting for its final approval by the state. On the federal level, Northrup Grumman was finding it challenging to hire qualified engineers and so they wrote a new trade for upskilling current employees into the role of Aeronautical Engineer. The lack of personnel to fill the positions as well as the decline in the number of graduating engineers with prior work and/or internship experience both contributed to their need to come up with an alternative solution. Even banks and pharmaceutical firms are finding a need to get into the apprenticeship game. BNY Mellon needed a way to fill Data Science related positions and so the new trade for Data Analyst was born. It accompanies new trades in Software Development, Network Systems Analyst, and Database Administration. M.A. Polce, a consulting firm in Rome, NY, will be using the aforementioned trades to train current and future staff.

With the myriad of new trades currently under review and the number of companies that are utilizing apprenticeship for rigorous, structured, and consistent training, it's easy to see why it's not your granddad's apprenticeship anymore.