

INSIGHTS INTO APPRENTICESHIP COMPLETION: PERSPECTIVES FROM APPRENTICE EXPERIENCES

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This exploratory study delves into the experiences of newly registered apprentices in the built environment sector, focusing on themes influencing apprenticeship completion. 33 apprentices were surveyed across carpentry and joinery, electrical, and plumbing trades in November and December 2023 at an Irish apprenticeship training centre. Drawing from a combination of systematic literature review findings and direct input from apprentices, the research offers a multifaceted perspective on factors influencing apprenticeship completion. A positive relationship with employers (48%) and satisfactory wages (45%) were deemed most significant for apprenticeship completion, particularly in the electrical trade. By comprehending the challenges apprentices encounter during their apprenticeship, educational institutions, employers, and mentors can design more effective support systems to assist apprentices in overcoming these challenges. The study aims to contribute to body of knowledge in this sector and the improvement of apprenticeship programmes, recommending further research with larger sample sizes and qualitative methods.

Keywords: built environment; occupational challenges; qualitative study; questionnaires; vocational education and training

INTRODUCTION

An apprenticeship is a planned programme of education and training, which formally combines learning and training in the workplace with that in an education setting (Generation Apprenticeship, 2020). The "earn while you learn" model of apprenticeship, has re-emerged as a powerful educational strategy, particularly as countries grapple with the demand for a skilled and an adaptable workforce. Apprenticeships have garnered increasing attention as an invaluable pathway to acquiring practical skills and knowledge essential for living in today's rapidly evolving job market. On the 28th February 2024, there were 27,281 apprentices in Ireland undertaking 72 apprenticeships (SOLAS, 2024), compared to 8,317 in 2015 and 19,630 at the end of 2020 (Department of Further and Higher Education, 2021) .

To meet skills shortages and achieve climate change objectives, Ireland urgently needs to train additional apprentices and construction workers as approximately 15,000 skilled tradespersons are required in construction by the decade's end, with an additional 17,000 needed in retrofitting (O'Brien, 2023). Apprenticeship programmes

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have several key features, such as a combination of on-the-job and off-the-job training, employment with a registered employer, and a focus on providing skills and required knowledge for a particular trade or occupation (Mc Mahon *et al.*, 2023). Additionally, assessments are used to evaluate apprentices' trade knowledge, competence, and skills, which may include written exams, practical assessments, and workplace observations. Electrical, carpentry and joinery and plumbing apprenticeships follow a 7-phase structure for a minimum of 208 weeks (O'Connor, 2006). Phases 1, 3, 5 and 7 are 'on the job' phases with the employer and Phases 2, 4, and 6 are 'off the job' and are spent in an educational facility including training centres, technical universities, or institutes of technology. Apprenticeship induction is carried out during Phase 1, preferably during the first four weeks of commencement. This induction is to 'provide the apprentice with the necessary information to ensure their apprenticeship progresses smoothly and to highlight and outline the areas of responsibility' (SOLAS, 2016). After induction apprentices move from 1S to 1C which marks their availability to be called to their first educational phase.

The appeal of apprenticeships extends from their contribution to individual career advancement, to their role in shaping national economic growth; however, this educational and vocational model is not without its challenges including aspects of workplace dynamics, and personal life balance. Apprentices can struggle with the demanding nature of their apprenticeship tasks, the integration of work and study commitments, and the need to maintain a healthy work-life balance amidst rigorous training schedules (Smyth, 2019). Apprenticeship completion remains a concern of policy makers and government despite significant financial investment with the "Action Plan for Apprenticeship 2021-2025" aiming to establish a performance framework to evaluate the effectiveness of apprenticeship programmes, incorporating metrics such as apprentice retention rates and annual stakeholder surveys. While apprenticeships are acknowledged for their importance in skills development and workforce preparation, a thorough analysis of the challenges faced by apprentices is crucial to maintain the effectiveness and relevance of apprenticeship programmes in meeting the evolving needs of industries and individuals in the modern workforce. Due to inconsistent and decentralised reporting in apprentice tracking, retention rates are not centrally recorded, and the assessment of programme impact in meeting both employer and apprentice needs has not been conducted at a centralised level (Department of Further and Higher Education, 2021).

By combining findings from a systematic literature review (SLR) with survey data, this study seeks to inform the development of tailored support systems and enhance the effectiveness of apprenticeship programmes in Ireland. The inclusion of trade-specific analyses highlights the diversity of challenges and priorities across different apprenticeship programmes, contributing to a more nuanced understanding of the apprenticeship landscape. This research aims to gain a nuanced understanding of the challenges apprentices face, whilst prioritising those factors influencing apprenticeship completion, as perceived by apprentices directly. These challenges include a variety of obstacles that apprentices encounter which may include workplace dynamics, financial constraints, educational preparedness, work life balance, training resources, job opportunities and well-being. Following on from these aims, the research questions are as follows: -

1. What are the most significant factors influencing apprenticeship completion as perceived by apprentices in the electrical, carpentry and joinery, and plumbing trades?

2. What are the unique challenges and priorities of apprentices in different trades, and how do these impact their completion rates?

Identified Research Gaps

Despite the growing body of research on apprenticeships and their importance in workforce development, there remains a significant gap in the literature regarding the specific factors influencing apprenticeship completion rates, particularly within the built environment sector in Ireland. Existing studies have primarily focused on general trends in apprenticeship training and broad factors affecting apprenticeship outcomes globally. A critical gap in the literature is the lack of comprehensive, trade-specific analyses that consider the unique challenges and priorities faced by apprentices in different trades. While McMahon *et al.*, (2022) provided a SLR (see below) that outlined broad categories of factors influencing apprenticeship completion, their work did not fully explore how these factors manifest differently across various trades. This omission is particularly important as the built environment sector comprises diverse trades with distinct training requirements, workplace environments, and career trajectories. Moreover, the existing literature often overlooks the voices of apprentices themselves, focusing instead on employer or policy-maker perspectives.

The SLR published by the authors in 2022 revealed critical factors influencing apprenticeship completion, included employer considerations, apprentice attributes, and curriculum and programme factors, which are summarised in Table 1 below.

Table 1: Factors influencing apprenticeship completion

Category	Summary of factors influencing apprenticeship completion (from McMahon <i>et al.</i> , 2022)
Employer Considerations	The relationship between apprentices and employers significantly impacts apprenticeship completion. Challenging working conditions and inadequate training often lead apprentices to leave their programmes (Greig, 2019). Larger employers tend to have higher completion rates due to well-developed apprenticeship programmes, higher wages, and better career prospects. Larger companies may provide full-time trainers for apprentices, while smaller companies offer more personalised instruction (Greilinger and Sandner, 2021). Higher wages positively impact apprentices' intentions to stay in their programmes (Neuber-Pohl, 2021). Research indicates that apprenticeships leading to skilled professions and offering higher pay rates have higher completion rates. Companies committed to paying increased wages upon completion are better positioned to retain capable staff (Malcolmson <i>et al.</i> , 2003)
Apprentice Attributes	Factors such as gender, age, disability, and mental health influence apprenticeship completion rates (Kelly <i>et al.</i> , 2015, Laporte and Mueller, 2013). Women tend to have higher completion rates, while older apprentices may face challenges in completing their programmes (Prasil, 2005). Apprentices with learning difficulties or disabilities may require additional support to complete their apprenticeships. (Gambin and Hogarth, 2016) Mental health issues, such as anxiety, can also impact apprenticeship completion (Powers and Watt, 2021). Higher educational attainment, such as completing high school diplomas, is associated with higher apprenticeship completion rates (Laporte and Mueller, 2013).
Programme and Curriculum Factors	Inadequate career guidance can lead to apprenticeship non-completion due to misconceptions about the apprenticeship's nature (Daniel <i>et al.</i> , 2020). Better recruitment procedures and improved career guidance could enhance apprenticeship completion rates by ensuring better matches between apprentices and companies (Gambin and Hogarth, 2016). The quality of teaching and the structure of apprenticeship programmes impact completion rates. Effective communication and collaboration between companies and vocational training centres are crucial for connecting learning processes. Certification requirements and the level of competitiveness in trades also influence completion rates (Gambin and Hogarth, 2016)

METHOD

The sampling strategy employed in this study aimed to ensure a representative sample of apprentices across the electrical, plumbing, and carpentry and joinery trades. Participants were recruited from an Irish apprenticeship training center, which caters to a diverse range of apprenticeship programmes. The inclusion criteria for participants were apprentices currently enrolled in Phase 1 of their apprenticeships, aged 18 or above, and willing to participate in the study voluntarily. These trades were chosen because traditionally almost half of all apprenticeship registrations nationally fall within these three trades. Out of 8286 registrations in 2022, 2648 were electricians, 713 were carpentry and joiners and 782 were plumbers (National Apprenticeship Office, 2023). The sample size was determined based on the feasibility of data collection within the specified timeframe and resource constraints.

The findings from the SLR conducted by McMahon *et al.*, in 2022 served as the foundation for this study. A focus group was convened in November 2023, comprising four subject matter experts from an Irish apprenticeship training center to refine the multitude of factors influencing apprenticeship completion identified in the SLR, resulting in a more concise and representative set. This set was presented electronically in a list format to apprentices undergoing their online Phase 1 induction on November 23rd and December 8th. These sessions were selected as they provided a structured environment where all new apprentices were present, ensuring comprehensive reach and participation. Participants accessed the survey through a provided link to Microsoft Forms, accessible via their smartphones or computers which ensured immediate and convenient access, increasing the likelihood of participation while also ensuring consistency in how participants were introduced to the survey. Participants were given the opportunity to identify additional factors or comments they deemed significant allowing for qualitative insights to complement the quantitative data collected. The survey allowed apprentices to select specific factors influencing their completion, with a restriction of selecting up to three factors which helped focus the responses on the most critical influences, reducing data ambiguity.

The survey was designed using Microsoft Forms through the researcher's university account, ensuring secure access and management of data. The questionnaire was tested with members of the researcher's academic class and training centre colleagues prior to distribution to apprentices. This study is part of a wider research project with ethical approval. The survey began with an informed consent declaration, ensuring participants were aware of the study's purpose, their rights, and confidentiality.

Quantitative data collected through the survey were analysed using descriptive statistics to determine the frequency and distribution of responses for each factor influencing apprenticeship completion. The overall response rate, as well as response rates for each trade, were calculated to understand the level of engagement. The overall response rate for the three trades was 66%, indicating a robust level of participation. A study in 2022, found an average response rate in education-related research to be 44.1% which increased when surveys targeted a well-defined population (Wu *et al.*, 2022). Fifty-seven apprentices were initially called to two induction sessions, including thirty-two electrical apprentices, nine plumbing apprentices, and nine carpentry and joinery apprentices. Seven apprentices from outside the target group were excluded. Among the eligible participants, twenty-three responses were received from electrical apprentices, indicating a response rate of 71.8%. Carpentry and joinery apprentices demonstrated the lowest response rate with

only four responses (44.4% response rate), while six responses were received from plumbing apprentices (66.6% response rate). The distribution of apprentices in the sample, comprising 23 electrical, 4 carpentry, and 6 plumbing apprentices, mirrors the registration trends reported by the National Apprenticeship Office in 2022. During that year, 2648 electricians, 713 carpentry and joiners, and 782 plumbers were registered, indicating a higher proportion of electricians compared to the other trades. Consequently, the seemingly skewed data towards electrical apprentices called for induction reflects the expected ratio based on registration figures. This distribution aligns with the typical representation observed in apprenticeship programmes and induction processes, ensuring a representative sample for the study.

The frequency of each selected factor was calculated to identify the most perceived influences on apprenticeship completion. Cross-tabulation was used to examine the differences in factor selection across the three trades. This analysis helped identify any trade-specific trends or unique challenges faced by apprentices in electrical, plumbing, and carpentry and joinery trades. This analysis included calculations of frequencies and percentages for the factors influencing apprenticeship completion.

FINDINGS

The survey was conducted among apprentices in three trades: electrical, carpentry, and plumbing, with the aim of identifying the key factors that influence apprenticeship completion as perceived by the apprentices themselves. Table 2 below illustrates the distribution of themes and factors influencing apprenticeship completion among apprentices from the electrical, carpentry and joinery, and plumbing trades.

Table 2: Factors influencing apprenticeship completion: Preference by trade and sample size

Trade	Electrical	Carpentry	Plumbing	Total
Sample Size	23	4	6	33
Themes and factors for apprenticeship completion				
Prior educational background e.g., Leaving Certificate	5	3	1	9
Being Male/Female	1	0	1	2
A strong foundation in practical or other school subjects	7	2	3	12
Access to adequate physical; resources and tailored learning supports.	2	0	1	3
Age on commencement of apprenticeship	0	0	0	0
Having positive relationship with employer	12	0	4	16
Level of wages provided by an employer during an apprenticeship.	10	3	2	15
Strong communication between employer and training centre	6	0	1	7
The availability of job opportunities	9	1	0	10
The quality of resources and personnel provided by the training centre or university.	6	1	2	9
Apprenticeship structure and duration	5	0	2	7
Good guidance counselling while at school	1	0	0	1

With a total sample size of thirty-three apprentices, each participant was asked to choose up to three factors they perceived as most crucial for completing their apprenticeship. By restricting the selection to three factors, this approach ensured that participants focused on the most salient aspects influencing their apprenticeship experience, enhancing the quality and clarity of the data collected. Twenty-six participants chose three factors, six participants chose only two factors, one participant chose only one factor.

DISCUSSION

This study examines responses among apprentices in an Irish apprenticeship training centre, with a focus on understanding factors contributing to apprenticeship completion in Ireland. Carpentry and joinery apprentices exhibited the lowest response rate, with only 44.4% providing eligible responses which may suggest potential differences in engagement or interest levels compared to their counterparts in the electrical or plumbing trade. This disparity underscores the significance of each response, particularly considering the small number involved in the study initially.

A positive relationship with employers (48.4%) was identified as the most significant factor in successfully completing an apprenticeship, followed closely by the level of wages (45.4%) paid during employment. These findings align with the literature, such as the studies by Neuber-Pohl (2021) and Greig (2019), which emphasize the critical role of supportive employer-apprentice relationships and adequate compensation in fostering apprenticeship completion. This indicates that a supportive employer-employee relationship is crucial for apprenticeship success, particularly in the electrical trade. Significantly no carpentry and joinery apprentices chose a positive relationship with their employer, however with only four apprentices from this trade, this could simply be due to chance or the small number of respondents rather than a true reflection of their perceptions. Carpentry and joinery apprentices prioritised other factors over a positive employer experience for example level of wages paid while in employment and prior educational background. One plumbing apprentice said that a positive relationship with the employer was important because it was just him and the boss in the van all day so 'its important to get on with him' while another said that a good relationship with employer 'makes you want to learn'. 'Enjoyment' was mentioned by three different electrical apprentices, underpinning the pleasure that can be achieved from one's training.

Level of wages provided by employer was the second most frequently cited factor (15 responses), highlighting financial remuneration as a critical element. Electrical apprentices again showed a strong preference (10 out of 23), followed by carpentry (3 out of 4) and plumbing apprentices (2 out of 6). Both wages provided by the employer during apprenticeship and the availability of job opportunities were emphasized by electrical apprentices, with ten and nine selections respectively in contrast, whereas carpentry and joinery and plumbing apprentices showed less focus on these factors. This suggests potential differences in the perceived importance of financial and employment-related factors across the trades. An electrical apprentice said "I feel like it's important to be looked after and guided well. A positive relationship with an employer would encourage a positive mindset and better overall effort, and it's the same with the wages when your being paid good money you will be more driven to prove yourself and work harder". One carpentry and joinery apprentice said that he needed good wages to pay for his car loan.

Having a strong foundation in practical or other school subjects was selected by 12 apprentices (36.3%), and prior educational background, e.g., Leaving Certificate (27.3%). The Leaving Certificate is a set of examinations which marks the end of Irish second level education. The participants' prioritisation of completing the Leaving Certificate and having a strong foundation in practical or academic subjects' signals a belief that their prior educational experiences significantly influence their apprenticeship experience and success implying a role in shaping their readiness or ability to navigate the apprenticeship successfully. While electrical apprentices

showed the highest preference, carpentry and joinery and plumbing apprentices also recognised the significance of practical knowledge in their training. One electrical apprentice acknowledged that 'having a leaving cert helps with difficult maths' while one was concerned that the school, they attended prior to commencing the apprenticeship did not offer any technical subjects apart from technical graphics.

The survey results indicate that four factors were selected by fewer than five apprentices. These factors include being male or female, access to adequate physical resources and tailored learning supports, age on commencement of apprenticeship, and good guidance counselling while at school. Only two apprentices identified gender as a significant factor influencing apprenticeship completion. This suggests that, within the surveyed group, gender may not be perceived as a major determinant of success in apprenticeship programmes. This perception could be due to a shift in the cultural environment towards greater inclusivity, resulting in a general feeling that gender is not an 'issue'. Only three apprentices selected access to adequate physical resources and tailored learning supports as a key factor which could be attributed to apprentices prioritising other factors such as wages or employer relationships as being more critical to their overall success. Significantly, no apprentices identified age on commencement of apprenticeship as a significant factor, this may be because of the exclusion of under 18s to the survey or perhaps that apprenticeship programmes focus more on skills and competencies rather than age, leading apprentices to perceive other factors as more influential. Only one apprentice, (electrical) highlighted the importance of good guidance counselling while at school which could be indicative of apprenticeships not being promoted in schools or access to other forms of support including family and friends and online resources which they found more relevant.

When participants were asked if there were additional factors that they deemed important but were not included, one carpentry and joinery apprentice mentioned the need for mathematical support, while one plumbing apprentice highlighted the necessity for dyslexia support. Other comments and concerns were 'having a car to get to and from work' and 'a more in-depth communication between SOLAS or training centre to the employer and knowing that the employee is getting the training finished' were recorded. There were also two points relating to geographical issues namely if the apprentice was scheduled far away from home for college, with the added responsibility of living on their own.

CONCLUSIONS

The analysis of responses from apprentices across various trades unveils significant differences in prioritised factors influencing apprenticeship completion, highlighting the need for tailored support strategies. While there are some similarities in the factors prioritised by apprentices across electrical, carpentry and joinery, and plumbing trades, notable differences also exist. Electrical apprentices demonstrated a stronger emphasis on factors related to employer relationships, wages, job opportunities, communication, and training resources. These findings underscore the importance of tailoring support mechanisms and interventions to address the specific needs and priorities of apprentices within each trade.

The low selection rates for factors including being male or female, access to adequate physical resources and tailored learning supports, age on commencement of apprenticeship, and good guidance counselling while at school. suggest that while they may not be primary concerns for apprentices, it is crucial to ensure that these aspects are not entirely overlooked. For example, even though gender was not widely

cited, continuous efforts to promote gender equality and inclusiveness should be maintained to ensure that potential issues are proactively addressed.

However, in the same way apprentices offer potentially biased accounts, employers frequently attribute dropout to apprentices feeling unsuited for the apprenticeship, indicating that employers may be inclined to assign blame to the apprentice (Hogarth *et al.*, 2009). Harris and Simons (2005) also identified a prevalent 'blaming' culture, wherein there is a tendency among all parties—apprentices/trainees, managers/supervisors, and teachers/trainers—to attribute the perceived "problem" of poor retention to each other.

This research offers significant benefits to various stakeholders within the apprenticeship ecosystem. For apprentices, it provides valuable insights into the challenges they may encounter during their training, enabling them to make informed decisions and navigate their apprenticeships more effectively. Employers and educational institutions can use the findings to enhance their curriculum and support services, ultimately improving the quality of apprenticeship programmes. Policymakers can leverage the empirical evidence to advocate for policy changes that create a more supportive environment for apprenticeships. Further research with larger sample sizes could provide deeper insights into these dynamics, thus contributing to the ongoing improvement and refinement of apprenticeship programmes, ensuring their continued alignment with the evolving needs of both industries and individuals in the modern workforce.

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