An Evaluation of the Delivery of Quantity Surveying Degree Apprenticeship in UK Universities

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Abstract
Degree apprenticeship training has recently gained significant attention in the UK, prompting an examination into the experiences of quantity surveying degree apprentices at a UK university. A questionnaire was used for collecting data from quantity surveying degree apprentices in their third to fifth years. The questionnaire focused on their backgrounds, experiences, challenges, and overall satisfaction. Forty-seven responses were analysed using descriptive statistics, the relative importance index (RII), and the Kruskal-Wallis non-parametric test. The results revealed no significant differences in opinions among apprentices across most factors except the overall program experience. The findings highlighted that degree apprenticeships create valuable opportunities and widen participation, with notable positives including pride in one's work and peer interactions. However, challenges included employer support, training content, and balancing work with study commitments. While most strategies employed were considered adequate, it is recommended to review them to enhance the experience for all stakeholders and ensure the program's long-term sustainability.

Keywords: Built environment; Degree-Apprenticeship; Quantity Surveying; United Kingdom.

1.0 Introduction

In reforming and improving the degree apprenticeship program, the UK government introduced a new policy in September 2022. The policy ensures that the apprenticeship programme better recognises the role of degrees and graduate status in the labour market. Also, any degree apprenticeship is a distinctive product that secures the best apprenticeship and higher education (Institute for Apprenticeships and Technical Education, 2022). The policy further explained that such reforms would be achieved by enabling degree apprenticeship for graduate occupations, ensuring improved integration of on- and off-the-job training. Other issues require complete alignment between the degree learning outcomes and the knowledge, skills, and behaviours (KSBs) in the apprenticeship standard, integrating the end-point assessment with the degree and ensuring assessment by occupational experts. However, a complex implementation landscape was observed for employers, apprentices, and universities (Smith *et al.*, 2021). Some of the challenges of the degree apprenticeship programme include curriculum design, programme delivery, support, portfolio, and end point assessment (EPA), collaboration with employers, and recruitment and onboarding (Horackova et al., 2024; Cedefop, 2018; Quew-Jones, 2023). Also,

people from disadvantaged backgrounds view the degree apprenticeship route as unfamiliar and risky (Casey and Wakeling, 2022). Therefore, understanding the stakeholder contexts is essential for the longer-term sustainability of degree apprenticeships (Smith *et al.*, 2021).

Furthermore, apprenticeship should not be seen as one-dimensional but as a multifaceted learning vehicle considering pedagogical, occupational, locational, and social aspects (Fuller and Unwin, 2011). This is because the apprenticeship model allows the learner to participate in a community of practice (Lave and Wenger, 1991). Such a community provides new learners with a level of expertise as they have more opportunities to practice within the context of learning. However, Carter and Tubbs (2019) argued that educators should maintain their responsibilities to education as servants of the common good despite the economic benefit of the degree apprenticeship scheme.

There is a paucity of academic research on the impact of degree apprenticeships (Nawaz et al., 2023). Additionally, there has been limited investigation into the practices and experiences of degree apprentices in built environment programs. Consequently, a study that explores the current practices and experiences of degree apprentices in this field is vital.

Literature Review

2.0 An Overview of Degree Apprenticeship Training in the UK

The degree apprenticeship was introduced in 2015 to address skill gaps in sectors requiring higher-level expertise (Universities UK, 2019). It allows apprentices to work while pursuing a degree, which can lead to membership in professional bodies. Training lasts two to five years, with 20% of the time dedicated to off-the-job training, such as attending university (IfATE, 2024). Degree apprentices are employed and receive a salary and employee benefits, including a minimum of 20 days of paid holiday. The government and employers jointly share course costs through the apprenticeship levy. Key organisations involved include the Department for Education, which oversees the programme; the Institute for Apprenticeships and Technical Education (IfATE), which develops apprenticeship standards; Ofsted, responsible for inspecting quality; and the Office for Students, which regulates higher education (Department of Education, 2021). Enrolment in degree apprenticeships within construction fields has increased, with 2,470 apprentices in 2023, up from 2,220 in 2022. Areas of study include chartered surveying, construction quantity surveying, civil engineering, town planning, architecture, construction site management, building services, and engineering (Construction Index, 2024).

3.0 Benefits and Challenges of the Degree Apprenticeship

The degree apprenticeship provides the opportunity for an employer-led higher education and for the apprentice to undertake a work-based degree (Smith *et al.*, 2021). Such opportunities aid public-sector recruitment, support progression routes and social mobility within the existing workforce (Lester, 2020; Antcliff, Baines and Gorb, 2016; Taylor-Smith *et al.*, 2023). Also, it promotes social identity by providing pride in work, supporting others, sharing experiences, and belonging (Quew-Jones, 2024; Brinia, Stavropoulos and Athanasoula-Reppa, 2018; Taylor-Smith *et al.*, 2023). Earlier studies by Antcliff et al. (2016) noted that employers consider the degree apprenticeship to meet the recruitment needs in ways other options do not because of its ability to make an immediate contribution to the workplace. Additionally, data shows that degree apprenticeships meet employers' intended purpose of contributing positively to the UK Government's high-level goals for productivity and social mobility (Nawaz *et al.*, 2023).

However, despite the benefits identified and the government effort, the implementation landscape for employers, apprentices and universities is complex (Smith *et al.*, 2021; Nawaz *et al.*, 2023). For example, Obi (2024) argued that no models support employer engagement in training degree apprentices in the built environment. Therefore, it suggested employer engagement in the curriculum design and for the success and sustainability of degree apprenticeship programs. Other challenges facing the full implementation are aligning the educational content and the training, governance, the training content and learning outcomes and participation and support of employers (Cedefop, 2018; Fabian *et al.*, 2022; Mulkeen *et al.*, 2019). Also, the degree apprenticeship route appears to be discounted as unfamiliar and risky by many of those from disadvantaged backgrounds. Instead, some middle-class students tactically adopt it as an alternative (Casey and Wakeling, 2022).

4.0 Strategies for Improvement

The Situated Learning Theory (SLT) explains that individuals can learn and participate in a community of practice (Lave and Wenger, 1991). In such a community, new learners reach an expert level as they have more opportunities to practice within the context of learning (figure 1). Therefore, learning in such a community is unintentional, referred to as Legitimate Peripheral Participation (LPP) (Lave and Wenger, 1991; Herrera, 2020). As shown in Figure 1, the learner moves from the periphery of the community to the centre as they gain expertise and engage and participate actively in the sociocultural practices of the community. The university environment and the workplace provide the context which enables the degree apprentices to develop their skills and expertise (Figure 1). The university environment enables meaningful friendship and peer support, which feeds into their work and studies (Taylor-Smith *et al.*, 2023; Brinia, Stavropoulos and Athanasoula-Reppa, 2018).

However, the interaction within the community of practice and how they align with the performance of the degree apprentices in the built environment is still unclear. Some of the strategies suggested that could lead to improvement in the degree apprenticeship scheme are monitoring and control (Daniel *et al.*, 2020; McKnight *et al.*, 2019; Rowe, 2019; Konstantinou and Miller, 2020); mentorship and inclusive learning (Quew-Jones and Rowe, 2022; Nottingham and Mao, 2023), stakeholders' engagement (Smith *et al.*, 2021; Welbourn, Devins and Reynolds, 2019; Quew-Jones, 2023; Rowe *et al.*, 2017). Monitoring and controlling have been argued to help under-achieving groups and could also change the pedagogy of learning (Daniel *et al.*, 2020; Dermentzi, 2024). Another way to monitor the progress of the DA training in the UK is through a tripartite meeting. This meeting occurs at least every three months and is a mandatory requirement for funding from the Department of Education. It involves a structured discussion between the apprentice, the employer, and the education provider. The goal of this meeting is to ensure that the DAs are making progress, aligning their learning with the required Knowledge, Skills, and Behaviours (KSB), and meeting the standards for the End-Point Assessment (EPA). On the other hand, involvement in negotiated learning enhances mentorship because unplanned experiences can add value and scope for richer mentoring dialogues (Quew-Jones and Rowe, 2022).

Furthermore, understanding the stakeholders' context is essential in enhancing the degree apprenticeship's long-term sustainability (Smith *et al.*, 2021). Such an understanding could be achieved through higher education institutions (HEIs) that design workforce development initiatives with various employers (Welbourn, Devins and Reynolds, 2019). Such strategies enhance collaboration, widening participation, work-integrated learning, and meeting the end point assessment (EPA) (Quew-Jones, 2023; Horackova *et al.*, 2024; Rowe *et al.*, 2017).

Additionally, collaborating with stakeholders enhances an effective employer-led recruitment process, careful management of expectations, sound HEI retention strategies, employer involvement and board-level motivators to ensure organisational benefits are derived from effectively situated workplace

learning and a focus upon effective, empowering mentoring and support strategies (Quew-Jones, 2023; Horackova *et al.*, 2024; Rowe *et al.*, 2017).

Figure 1: Model of Situated Learning: Source (Herrera, 2020)

5.0 Methodology

This section outlines the methodology used to assess the experiences and performance of quantity surveying degree apprentices. Researchers have various methodological options available to address a research problem effectively. According to Creswell (2014), these options include quantitative, qualitative, and mixed-methods approaches. The choice of research approach depends on the specific research problem and questions, the researcher's personal experience, and the intended audience (Creswell, 2014; Ewuga et al., 2023).

This study employed a quantitative approach to effectively assess the experiences and performance of quantity surveying degree apprentices. This approach (quantitative) enables the evaluation of concepts based on their quantity, intensity, or frequency. Furthermore, the quantitative approach provides valuable insights into activity patterns across groups or categories of individuals rather than concentrating solely on individual experiences (Denscombe, 2014). Data were gathered through a questionnaire survey distributed to third- to fifth-year quantity surveying degree apprentices currently enrolled at a UK university. The questionnaire instrument has been extensively employed in social research and offers the advantage of standardising responses. This ensures that all respondents are asked the same questions, eliminating the potential for variation that might arise through face-to-face interactions with the researcher (Denscombe, 2014).

5.1 Sampling Criteria and Data Collection Instrument

The intended generalisation of the study influences the choice of sampling technique. According to Onwuegbuzie and Collins (2007) and Denscombe (2014), a random sampling method is suitable for generalising findings to a larger population. Non-random sampling is more appropriate for gaining insights into specific phenomena. This latter approach allows researchers to intentionally select relevant individuals, groups, and settings (Onwuegbuzie and Collins, 2007; Denscombe, 2014). In this context, purposive (non-random) sampling was chosen to collect degree apprentices' responses using a

questionnaire. This technique can identify participants who can provide valuable insights into the research problem (Creswell, 2014).

The questionnaire was structured into two main sections. The first section gathered general demographic and professional information from the respondents, including their year of study, gender, ethnic origin, age group, and the nature of the business they are employed. The second section explored the degree apprentices' experiences, challenges, and satisfaction with implementing various strategies.

An online survey was distributed to degree apprentices to secure between eighty (80) and one hundred (100) responses. Despite rigorous follow-up efforts through email reminders and phone calls, forty-seven (47) responses were obtained, as detailed in Table 1. Given the study's focus and the sampling technique, a response rate of forty-seven (47) was deemed adequate. Shih and Xitao (2008) noted that web-based surveys typically have a response rate about 10% lower on average compared to postal surveys. Additionally, for studies within the built environment, a 20-30% response rate is generally considered sufficient (Fellows and Liu, 2015; Enshassi, Ayash and Mohamed, 2018).

A five-point Likert scale was used to evaluate the degree apprentices' experiences, challenges, and satisfaction with implementing the various strategies. The five-point Likert scale was deemed appropriate because it ensures an objective data scale with fewer neutral items and less extreme items at either end of the continuum (Oppenheim, 1992). Additionally, it maximizes data reliability and validity (Krosnick and Presser, 2010). The data analysis technique is presented next.

Table 1: General Information of Respondents

5.2 Data Analysis Techniques

The data analysis employed descriptive statistics and the relative importance index (RII). The descriptive statistics are presented in a table with the respondents' general information. The RII was employed to examine degree apprentices' experiences, challenges, and satisfaction in implementing various strategies. The RII has been utilized in numerous studies in the built environment and related disciplines to measure perception or attitude (Oyegoke *et al.*, 2024; Ewuga and Adesi, 2023; Egemen and Mohamed, 2006). Using an ordinal scale from 1 to 5, with 1 representing the lowest and 5 the highest. The RII ranges from 0 to 1.

The RII is given as:

$$\frac{\sum w}{AN} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{5N}$$

Where w = the weighting given to each factor by the respondent, ranging from 1 to 5

A= the highest weight (i.e.5 in the study)

N= the total number of respondents

Furthermore, the Kruskal-Wallis non-parametric test was performed to assess whether significant differences exist among the apprentices' views and responses to the various identified factors.

6.0 Results and Findings

The study results and the findings are divided into four sections. The first section presents the findings based on the respondents' general information. The remaining three sections present findings on the degree of apprentices' experiences, challenges, and satisfaction with implementing strategies.

6.1 General Information of the Respondents

To ensure that the data collected addresses the aim of the study, the year of study, gender, ethnic origin, age group and nature of business employed were evaluated. Such information is essential to confirm that the responses provide insight into addressing the research problem. The results in Table 1 show that Year 5 apprentices had the highest response, 47% (22), followed by Year 3 and 4 with 30% (14) and 23% (11). The results indicate that the findings from the study will provide good insight and experience at various levels. Additionally, regarding diversity, 77% (36) of the respondents are male, 21% (10) are female, and 2% (1) prefer not to say their gender. Likewise, the ethnic origin has 98% (46) of the respondents are white, while only 2% (1) are from mixed or multiple ethnic groups.

Furthermore, in evaluating the age group, the results show that most of the respondents are within the age groups of 18-22 years-34% (16) and 23-27 years-38% (18), while the remaining are within 28-33 years-17% (8) and 34 years and above -11% (5). This finding indicates that the degree apprenticeship

provides a good opportunity for different age groups. Lastly, it was essential to understand the nature of the business practice in which the apprentices are employed. Table 1 results showed that most of the degree apprentices are employed in commercial contracting firms either in building-38% (18), civils or infrastructure-19% (9), or mechanical and electrical-15% (7). While 15% (7) are employed with the private quantity surveying firm (PQS), 9% (4) are employed with the public sector, and 4% (2) are employed in other sectors like renewable energy firms.

6.2 Level of Satisfaction with the Degree Apprenticeship Training

The satisfaction level of degree apprentices was assessed based on eight factors listed in Table 2. All eight factors received an RII of 0.7 and above, with the highest "pride at work" score at 0.83. This indicates that degree apprentices are satisfied with their training. Upon closer examination, the first three factors primarily focus on apprentices' interactions within the community of practice (refer to Figure 1). In contrast, the 5th to 8th-ranked factors is related to satisfaction with the quality of delivery. In terms of overall satisfaction with the experience, a score of 0.76 was achieved, with most scores being very good and good.

Further analysis using the Kruskal-Wallis test, as shown in Table 3, was performed to confirm whether degree apprentices have differing views about their experiences. The results revealed no significant differences across seven factors, as indicated by X^2 (2) > 0.05. However, there was a significant difference in the overall experience with the degree apprenticeship, with a p-value of 0.028, indicating significance at the 0.05 level.

Table 2: Level of Satisfaction with Degree Apprenticeship Training

Table 3: Kruskal Wallis Test for the level of Satisfaction with Degree Apprenticeship Training

6.3 Challenges in Degree Apprenticeship Training

Eight factors relating to the degree apprentices' challenges were evaluated, as shown in Table 4. From the results, the first five challenges have an RII of 0.70 and above, while the last three returned a score of 0.64 and 0.68, respectively. The top four factors are closely related: support of the employer, training content and learning outcomes, balancing work and study, and support of education providers. These findings are not surprising considering the expectations and demands of the degree apprenticeship training. The findings further confirm results from earlier studies on the challenges in implementing the degree apprenticeship scheme (Horackova *et al.*, 2024; Cedefop, 2018; Quew-Jones, 2023).

Furthermore, the 5th to 8th-ranked challenges can be inferred to be related to the first four. Also, these challenges are mostly centred around the organisations' policies and strategies regarding degree

apprenticeship. Additionally, the results from the Kruskal-Wallis test, shown in Table 5, indicated no significant differences across eight factors, as evidenced by X^2 (2) > 0.05. However, the results needed to be treated with caution because of the sample size and purpose of the study. Nevertheless, it has provided insight into understanding the challenges from the apprentices' point of view.

Table 4: Challenges of Degree Apprentices

Table 5: Kruskal Wallis Test for Challenges of Degree Apprentices

6.4 Satisfaction of Strategies

Twelve factors were evaluated to assess the level of satisfaction with the various strategies in the degree apprenticeship delivery, as shown in Table 6. The relative importance index (RII) all return a score above 0.70. The highest score was on work-integrated learning (0.79), and creating time and space for reflective practice (0.71) was the lowest. Also, the 7th to 10th strategies had the same RII. This indicates that the degree apprentices are satisfied with the various strategies that make learning enjoyable. Further analysis, as shown in Table 7, indicated no significant difference across the twelve factors rated by degree apprentices, with X^2 (2) > 0.05. However, these results must be treated cautiously despite /all the RII greater than 0.70. Looking at the results closely, it is observed that most of the scores are within the satisfied and neither scale, indicating that there is still room for improvement on the degree apprenticeship programme.

Table 6: Level of Satisfaction with the Different Strategies

Table 7: Kruskal Wallis Test for Level of Satisfaction with the Different Strategies

7. Discussion of Findings

The current practice and performance of degree apprenticeship delivery in quantity surveying show potential for creating opportunities and widening participation to different groups in accessing higher education. This potential should instil hope about the future of higher education. However, the findings on gender and ethnic origin may be influenced by the unfamiliar nature and risky perception of the degree apprenticeship programme (Casey and Wakeling, 2022). It is important to note that due to the sample size and nature of the study, the findings may not be generalisable to a broader range of a larger group.

Furthermore, in exploring the satisfaction level of the degree apprenticeships, the findings support earlier studies relating to social-economic fulfilment and developing networks and friendships (Quew-Jones, 2024; Brinia, Stavropoulos and Athanasoula-Reppa, 2018; Taylor-Smith *et al.*, 2023). It can be hypothesised that due to the benefits derived from the degree apprenticeship scheme, there is a possibility of experiencing a high recruitment rate in the future. However, with the positive experience noted, some challenges were identified. The findings on the challenges were not surprising, considering the nature of the scheme based on the on-and off-the-job training. Such a form of training is demanding, judging that the apprentices will have to meet up with employers and the university requirements. The implications of the challenges could indicate that a balance will have to be struck so that there will be a consistent standard of the main aim of the apprenticeship degree. Creating such a balance allows apprentices in the community of practice to develop the necessary expertise through opportunities to practice within the context of learning (Figure 1) (Lave and Wenger, 1991). Additionally, these findings align with the position of Carter and Tubbs (2019), who cautioned that educators should ensure they maintain their responsibilities to education because there is a tendency for employers to lose focus on the university learning component of the scheme. These challenges provide an essential focus for future research that could unveil and create a better understanding of the needs of the employers and the expectations of the degrees awarding institutions.

Various strategies have been developed and implemented to address some of the challenges. The findings from the study suggest possible improvement despite the high scores from the relative importance index (RII). Considering the challenges identified, these strategies should help enhance the apprentices' experience. For example, meeting the end point assessment requires that most strategies align with professional body requirements. Therefore, these findings indicate that close collaboration with the relevant stakeholders is essential for achieving the degree apprenticeship requirements (Quew-Jones, 2023; Horackova *et al.*, 2024; Rowe *et al.*, 2017).

8. Conclusion and Recommendation

The study assesses the experience and current practice of quantity surveying degree apprenticeship in the built environment at a UK University. This is one of the early studies that evaluate degree apprenticeships in the built environment. The findings from the study indicate a high level of satisfaction among the degree apprentices, and the scheme has the potential to create opportunities by increasing participation in higher education among different groups. However, a significant difference was observed in the overall experience of the degree apprenticeship program. Additionally, despite the identified benefits, the study observed a need for closer collaboration among various stakeholders to address the challenges affecting the apprentices and maximise their potential. Such a collaboration drives Legitimate Peripheral Participation (LLP), allowing individuals to learn naturally within a community of practice. Notwithstanding the exploratory nature of this study and the limited sample

size, the findings offer valuable insights into how policymakers and other stakeholders could improve the delivery and implementation of the degree apprenticeship scheme. Additionally, this study provides meaningful insight for future research. Therefore, further study is needed to closely examine the expectations of both employers and higher education institutions, which could help develop a practical and achievable outcome.

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