



## Creating Resilient Professionals through Work Based Learning in Apprenticeship Degrees

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### Abstract

*Experiential learning is being recognised in degree-level qualifications in many countries. The resilience of learners who have encountered such learning and the potential to cross-fertilise traditional degree programmes is the subject of this study.*

*This study will look at immersive learning and reflective observations that exist in Graduate Apprenticeship (GA) Degrees. Professional skills are vital in underpinning degree-level apprenticeship programmes and this study will seek to define how professional skills contribute to the resilience of the learning community when that learning is undertaken partly or wholly within the workplace. The study will also comment on the opportunities that arise from institutions adapting to recognising the success and achievements of apprentices in the workplace.*

*The students are creators of their own learning journey and learn through a hands-on approach which is difficult to replicate outside of the workplace. Students can see a clear pathway to develop their professional skills and understand how the theory they are learning in class applies in practice.*

*Self-reflecting on the experience gained in the workplace is a crucial part of the learning experience on the programme. Reflective accounts contain information on the learner journey through the programme. Charting that journey by looking through the lens of resilience is a key opportunity to learn, as an institution, the benefits and opportunities arising from this style of learning.*

*The paper will interrogate the evidence-based responses and conclude by highlighting lessons learned and future improvements that could be made to the overall programme, and which areas could potentially be a useful addition to the Undergraduate (UG) degree programme.*

*Comparing apprenticeship programme work based learning to the traditional undergraduate Civil Engineering degree programmes will highlight where richer learning opportunities are found by GA students through the exposure to the Workplace.*

*By evaluating the current Work-Based Learning Degree as part of the GA, a clearer picture will be created as to what aspects of the immersive learning experience are particularly effective and transferable to undergraduate degrees in institutions involved in apprenticeships.*

**Keywords:** *Apprenticeship, Work Based Learning, Reflective Learning, Resilience.*

### 1. Introduction

Resilience among students in Higher Education is an important issue (Price 2023). Developing resilience before or during joining the workforce is an important aspect of learning. University degrees provide opportunities to develop resilience in many ways; successful study on a degree requires planning, adaptability, discipline, and reflection. Apprenticeship degrees have grown rapidly in the UK (Nawaz et al 2022). The style of learning varies from the typical full-time traditional student in that a large proportion of the learning is undertaken in the workplace. This study assesses the competencies of students on an Undergraduate Civil Engineering Graduate Apprenticeship (The Scottish term for degree level apprenticeships) by interrogating reflective accounts written by the apprentices themselves. The aim is to gain an improved understanding of the competencies available to apprenticeship students, gain an understanding of the resilience of the students and anticipate what can be replicated across all degree programmes in engineering.



### 1.1 Apprenticeships Degrees

In the UK, Apprenticeships are devolved meaning that Scotland, Northern Ireland, England and Wales all have different names for degree level qualifications that include an apprenticeship element. We will use the term Apprenticeship degrees.

There are broad similarities for these degrees; apprentices work alongside their studies. Learning in the workplaces typically forms part of the qualification. Learning providers can recognise the naturally occurring learning that takes place through evidence and reflection (similar to professional qualifications such as EngTech, IEng and CEng) or additional tasks can be performed which fall outside of the apprentice's job role. This study is focussed on the former.

The University of Strathclyde rely on naturally occurring tasks in the workplace and employ a team of work-based learning advisors to help the student recognise the learning they are carrying out in the workplace.

### 1.2 Transversal skills

The skills required for successful working across multiple scenarios have been the subject of much study. Many terms have been used to describe these skills. In a review of the term "21<sup>st</sup> Century Skills" Tight (2020) notes that many lists of skills and competencies gained in education for employment are overlapping and similar. This paper will use the term Transversal skills.

An Erasmus Impact Study conducted in 2014 found "92% of employers are looking for Transferable Skills" (PEETS; Promoting Excellence in Employability and Transversal Skills, KA2 Project September 2014) and during the stakeholder interviews in 2017-18 for the same study that employers find all transversal skills as equally important.

Anecdotally, since the global pandemic in 2019 we find the need for Transversal skills amongst future employees has intensified and the resilience of candidates for jobs has been adversely affected. A recent quote from a student conference highlights why:

"Our world (of employment) has become VUCA - Volatile, Uncertainty, Complexity, Ambiguity".  
(Karel Van Bouchaute, Businet Student Conference, Antwerp, March 2023)

Wylie (2023) listed "Eight graduate attributes that employers are crying out for". These are:

1. Collaboration
2. Adaptability
3. Problem-solving
4. Industry-specific tools
5. Communication
6. Data analytics
7. Creative thinking
8. Self-motivation.

These 8 transversal skills all impact directly on the resilience of students and employees alike. It is now not only about gaining employment it is about having the ability to succeed in employment and for a company to be able to retain the talent after recruitment. For traditional graduates and Apprenticeship learners identifying these skills and developing them in yourself becomes a must.

## 2. Methods

The reflective accounts produced by apprentices as part of their Work-Based Assignments are reviewed and a thematic analysis method was adopted. Braun & Clarke (2006) identified a six-phase



coding framework which is used for thematic analysis and identifies patterns and themes in the data. This was adopted in the present study.

A total of 8 reflective accounts were analysed using this approach, with 2 selected from each year of the Graduate Apprenticeship Degree. This allowed an appropriate representation of the reflective responses provided by apprentices studying on this degree programme.

### 3. Discussion of Findings

Reviewing the reflective accounts of apprentices has developed our understanding of the broad skills that are learned in work-based degrees. By reviewing several students work together we expose commonality despite the wide range of experiences within the cohort.

Transversal Skills are a useful tool to understand the broader learning undertaken in the workplace alongside academic learning in core subject areas. Many transversal skills are overlapping. Resilience in apprentices can be seen in adaptability, leadership and problem solving. Resilience develops over a long time and is developed in experiential settings.

Our analysis shows that the earliest experiences in the workplace are formative and confidence building features strongly. These include; building early knowledge base, learning new skills and behaviours. Self-motivation is apparent in early years and throughout the reflective accounts. An unexpected formative part of the earliest learning is gaining autonomy and independence.

Resilience and adaptability feature strongly in the reflective accounts but without being specifically referred to by the apprentices. Resilience is something built over time rather than a skill or behaviour picked up in a single activity. Adaptability as a skill which overlaps with resilience as both relate to the response to events and the ability to achieve things despite setbacks.

The development of transversal skills can go unnoticed by students. Apprentices are coached to recognise this learning in the workplace, but our work has found that the apprentices are not explicitly referring to this learning. Reflective accounts provide information on what the apprentice thinks they are learning, but also provide a hidden layer of learning that may not be obvious to them. Apprentices are afforded the opportunity to learn transversal skills through necessity in employment. They don't reflect on that learning in their reflective accounts. The role of university is perhaps helping them to understand what they are learning in experiential learning. In other words, learning to learn about transversal skills. This needs to be nurtured in both apprentices and traditional students.

Apprentices experience issues in the workplace meaning they are supported by colleagues. A traditional student has to overcome issues alone or within a peer group. Mentoring does not naturally fall from traditional academic programmes whereas professional engineers (apprentices in this study) must have support of colleagues to be professionally viable. Combining mentoring with experiential learning would provide the student with the opportunity to develop resilience and adaptability over time. This can become an aim for traditional academic programmes; provide multiple mentored opportunities to learn. This will enable the learning of resilience and also the recognition of resilience for students themselves.

Moreover, at the University of Strathclyde we have a unique set-up in our apprenticeship programme, where each student gets an individual work-based learning advisor to support them throughout their apprenticeship. This relationship can be optimised to coach and mentor the apprentice in becoming more competent in identifying and reflecting on the range of skills they are developing at work. This links back to the importance of mentorship in creating a more resilient individual. This also further reinforces the importance of embedding a mentoring scheme in the traditional undergraduate degree to support students in their learning journey and provide a pillar of support to overcome and learn from challenging situations and setbacks.

Furthermore, in a Work-Based Learning degree the employer provides real-life experience and opportunities in the Workplace for the apprentice, through authentic projects. A strong skill which we picked up on from the reflective accounts is leadership, cases where apprentices felt they had taken



on a role of being in charge of people, resources, or tasks. This demonstrates the natural occurrence of this skill in the workplace.

Leadership is very difficult for an Undergraduate student who is studying a full-time degree to develop, unless they actively seek work experience during their degree. Ultimately it is the role of the university to provide rich learning opportunities for full-time students, to allow them to develop skills above and beyond the technical-related skills acquired from studying academic modules.

In conclusion, this identifies a need for the university to provide simulated learning environments for students studying on the traditional undergraduate degree programme; providing them with real-life Civil Engineering projects with an opportunity to take on an assigned leadership role. This rich learning opportunity will act as a catalyst for the development of this highly sought-after transversal skill, alongside a list of others including communication, collaboration, problem solving and critical thinking, before they go into the workplace. It will also mean that employers will be able to assign new graduates more responsibility and accountability for tasks at an earlier stage than if this skill were to remain undeveloped until they reach the workplace. This is a win-win situation for both students and future employers.

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