Seeking solutions: how can a Design Thinking approach leverage improved apprenticeship design and delivery?

Report from the Apprenticeships Working Group

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Bios: Anne Haig Smith is Director of the Applied Learning Foundation, part of the Activate Learning Group. She has had an extensive career in further education, teaching, managing and leading a wide variety of provision, from entry level to HE. Anne is recognised for her national contribution to the Maths and English agenda in colleges. She currently leads strategically on quality improvement, teacher education, research and development within the Group and is completing her Educational Doctorate with Oxford Brookes University. She is part of a multiple college partnership on a DfE funded apprenticeship improvement programme across the Thames Valley area.

Mara Simmons has 25+ years of experience teaching and learning. Her career has been centered in schools in underprivileged communities and served as a teacher/ founder/ leader and director of several secondary schools in Los Angeles. She has a keen interest in school structure and design and studied the levers to improve student achievement within a school setting. She currently lives and works in Oxford, UK training teachers and transforming lives. Most recently she has been engaged with designing future teacher training courses that connect to teaching apprenticeships.

Abstract

Apprenticeships are a key government response to perceived skills shortages within England and are currently challenged by issues of quality, scope, scalability and the consequences, intended and unintended, of the shift from frameworks to standards
(Hogarth, et al 2012). This paper reports on a pair of themed sessions held to Reimagine Further Education in which the authors, utilising a Design Thinking approach (Calgren, et al, 2016; Plattner, 2010), worked with a group of apprenticeship professionals from across England to challenge, model, create and debate alternative approaches to apprenticeship provision which put the learning experience of the apprentice centre stage. By implementing a Design Thinking approach to create an ideal apprenticeship, participants identified a number of themes which challenge current priorities in apprenticeship design and delivery. Through this iterative design process, seven radical ideas emerged which the group felt would significantly and positively impact on an apprentice’s learning experience. This paper argues that Design Thinking is a useful and transferable tool for colleges and programme providers to use to address complicated challenges.

**Keywords:** apprenticeships, Design Thinking, training providers, levy, apprentice, employers.
**Introduction**

Design Thinking (Calgren, et al., 2016; Plattner, 2010) is an approach to developing solutions to complicated, systematic challenges and has been successfully used by many big corporations and non-governmental organisations to design products or programmes that meet the needs of the end user. It begins with empathy for the end user and works on understanding the various challenges and strengths. Once empathy is established there are a series of steps a group will take towards developing reasonable solutions. The steps we used in this session held at the Reimagining Further Education conference were derived from a 2010 model and include: empathise, define, ideate, prototype, and test (Plattner, 2010). For the purposes of the session, we achieved the first four steps anticipating that the participants were able to return to their settings and put into motion some of the ideas generated, along with a process that could be implemented in other contexts as well. The problem we were keen to look at was: *How should apprenticeship design and delivery change to put teaching and learning at its heart?* Using Design Thinking Process (Plattner, 2010) as a tool for developing an effective and successful apprenticeship programme uncovered many challenges that need to be addressed in order to meet the government’s goal of increasing the numbers of apprenticeships across all sectors to a total of three million by 2020 (HM Government, 2015). Ultimately this session was able to demonstrate the usefulness of engaging with a thinking process to help individuals and groups achieve viable solutions to complicated problems.

**Design thinking approach**

Design Thinking, described by Tim Brown, CEO of IDEO, is an innovative design process to address, challenge or develop a new strategy, service or process that is centred around the end user, while taking into account economic and technological feasibility (IDEO, no date). Design Thinking provides participants with the tools and techniques to think differently, identify new opportunities that may have been hidden from them before and ultimately to generate innovative solutions that could have real impact in placing teaching and learning as the highest priority in apprenticeship programmes. Different from critical thinking where one breaks down ideas, design
thinking is the build up of solutions so that everyone’s inputs are valued and there is no judgement. This approach helps ground solutions from an empathetic viewpoint and then enables participants to construct a specific actionable programme that addresses these questions. Design Thinking was first introduced in 1969 in “The Sciences of the Artificial,” by Nobel Prize laureate Herbert Simon. In this work Dr Simon originally identified seven stages and described how each stage leads a group towards defining a problem and developing a product that keeps connected to the original intentions and ‘end users’. This design process included the following steps: Define, Research, Ideation, Choose, Implement, Learn and Review (Simon, 1996; SAP, 2012). A modern approach from 2010 has been distilled down to five stages: empathise, define, ideate, prototype, and test. This method has proven successful in many sectors leading to product re-design, school services improvements and physical redesign of space within a school or hospital. University of St. Gallen, Switzerland captured several case studies where the implementation of Design Thinking helped companies/communities overcome challenges (Brenner, et al., 2016). For example, GE wished to address lower sedation rates of children needing a Magnetic Resonance Imaging (MRI) scan. Instead of focusing on how to make the MRI technology less scary, they approached the problem from a child’s perspective and were able to craft a story around the machine, developing interest instead of fear. There are many other case studies featured on the IDEO website that capture the impact of this process as well (IDEO, no date). IDEO has revised the design thinking process since 2010 to capture five stages: Discovery, Interpretation, Ideation, Experimentation and Evolution which are similar to the steps we used in our workshop focusing on the redesign of an apprenticeship programme.

In our workshop, with nine colleagues representing a range of views within the sector including providers, teachers, assessors and government consultants, we followed the design toolkit for educators’ templates from 2010 to unpack the underlying challenges and resources around apprenticeships and consider solutions that could contribute meaningfully towards models of apprenticeships. Over the course of a few hours we considered several different perspectives in order to flush out obstacles and opportunities and then came to a series of solutions and recommendations.
Apprenticeships

An apprenticeship in simple terms is a combined study and skill building employment programme for those 16 and older in a specific career path. Traditionally an apprenticeship was the process by which expert knowledge was transferred to a novice and it was the norm and means of sustaining a highly skilled workforce. Trade unions and employers maintained these opportunities and society accepted this norm. Over time, with many other study and career options available, this model deteriorated (Snell, 1996) in its guild-directed design. Once the government introduced National Vocational Qualifications (NVQ) in 1986 and then the Modern Apprenticeship in 1994, which included an entire framework, there was a resurgence in numbers of those seeking apprenticeships (Blunkett, 2001). Figure 1 portrays the increase in the numbers of apprenticeships since the Modern Apprenticeship inception. Most recently, the Apprenticeship programme is backed by a levy system as a means of encouraging employer engagement. Companies with over a £3 million payroll contribute towards a specific levy dedicated to training apprentices; only when companies hire apprentices may they tap this funding stream to pay for the education of their apprentice (Powell, 2017).

Figure 1: Number of apprenticeships commenced in each year in England, by age group, 2005-06 to 2015-16

Note: Each year in the data runs from the beginning of August to the end of July in the following calendar year.

Figure 1 Source: Department for Education, cited in Amin-Smith et al, 2017
Apprenticeships incorporate both on- and off-the-job training and apprentices have the same rights as other employees. Two different types of apprenticeship schemes currently co-exist in England. Frameworks were the original approach, but these are now being replaced by apprenticeship standards (Powell, 2017). Frameworks were designed and led by qualifications which are not always aligned to required job skills. For example, in a framework there is no identified end assessment, which means that an apprentice may achieve a BTEC Level 3 Business qualification but not have the interpersonal skills or professional skills to achieve in a business environment (Notley, 2017). The shift to standards puts in place the skills, knowledge and behaviours an apprentice would need to acquire in order to succeed in the apprenticeship. These standards are designed to be occupation-focused and are transferable (Notley, 2017). Various colleges and private educational providers offer the academic training that is aligned to the standards and support apprentices in earning job-specific qualifications. To become an apprentice one must meet specific entry criteria and be committed to learning while on the job. Employers have to agree to support their apprentices through a variety of ways with additional support and mentoring and must offer 20% paid off the job training that is mandated by law.

Meanwhile, as described by Fuller and Unwin (2003) and Bewick (2018), there has been a misalignment between the government’s goal and employer demand and commitment. Nevertheless, almost 900,000 apprentices were funded on their programmes during 2015-16 and a target of achieving three million apprenticeships by 2020 was set.

Small and medium-sized enterprises, who comprise the vast majority of employers in England, do not contribute to the levy as their payroll is not over the £3 million threshold. The Government pays for a significant portion of the costs, within pre-set bands of funding, towards training and upskilling each apprentice (Department for Education, 2018). Providers of apprenticeship training therefore seek employers (both levy payers and small and medium employers) who want to either upskill their existing workforce or take on new recruits to boost the skills profile of their business. They also seek learners who can be placed with employers, bringing in revenue and successfully fulfilling the apprenticeship framework or standard requirements. Through providing a holistic programme of training and support, providers aim to meet the needs of the different stakeholders in order to achieve a successful and
timely completion of the overall apprenticeship. Apprentices themselves have different needs and end goals, though many embrace the concept of earning while studying (CIPD, 2017, p. 26-31).

Those who provide apprenticeships are faced with a variety of challenges that include subcontractor relationships, timeliness of completion, relationships between assessors and college-based teachers who deliver qualification elements, behaviour, knowledge and skills development, end point assessment arrangements and qualification achievement in English and maths. Further challenges include how to best organise and integrate both formal and informal learning, how to equip apprentices to deal with complex power relations in the workplace and how to recognise and prioritise apprentices' current skills during their training. Equally there is the need to appropriately train the experts who are responsible for delivering the programme. As the role of the apprenticeship assessor changes under the exigencies of the introduction of the new standards, new ways of thinking about apprenticeships need to be forged. Hence we have the problem to address: Given the current levy funding model and government support for apprenticeships, how should apprenticeship design and delivery change to put teaching and learning at its heart? Following is the Design Thinking approach we used to consider apprenticeship design that maintains teaching and learning at its heart and core.

**Step 1: Developing Empathy**

Our shortened version of the process included discussion around the following topics and in this specific order. First, we developed empathy around a possible end user cohort: 16-18 year olds beginning this transition into post-secondary schooling and career. For this cohort we considered what their life priorities might be at this age, why they were taking an apprenticeship and what the key challenges were that they would be facing. Putting oneself into the shoes of a much younger person is evidently difficult. However, we recognised the social imperatives that young people faced, often through social media and the difficulties of finding suitable transport to an employer or training location. We were also able to identify both push and pull factors for why an individual might take an apprenticeship including familial
connections, the opportunity to earn as well as the avoidance of student loan debt (Banning-Lover, 2016).

In a given apprenticeship scheme, competing needs exist that may or may not align (Figure 2). For example, an employer may seek a ‘cheap’ workforce that offsets the levy expense. Nevertheless, our participants were clear that at all times the apprentice should sit at the centre of what they termed ‘this knotty ball of wool’, which they suggested had a strong propensity to getting tangled. This term came about once the participants began to unpick all the different competing elements to running an apprenticeship scheme and keeping track of the different entities involved and their different assessments, i.e. employer-professionalism, provider-qualification, assessor-end point assessment connected to standards.

**Step 2: Define**

Keeping the apprentice’s specific needs at the forefront of our discussion we were then able to more fully define employers’ and providers’ perspectives. Employers are most interested in personal attributes, specifically: communication, interpersonal skills, team work and problem-solving skills (CMI, 2002; Rantanen and Moroney, 2012; Wilton, 2014). Some obstacles include releasing apprentices for the off-the-job training, matching suitable apprentices with vacancies and the delays in new standards being approved. Providers understand their role as broker between the competing points of the triangle (Figure 2), though there are challenges with the
duality of the framework/standard structure, and ill-defined end point assessment arrangements for some apprenticeships.

**Step 3: Ideate**

With these competing perspectives, the Design process then considered the explicit employer/client for whom the apprenticeship programme was being designed. In this stage we first brainstormed a programme design with no barriers or limitations. One of our groups included some essential components as shown in Figure 3 below.

![Diagram of Group 3's initial design of their ideal apprenticeship programme](image)

*Figure 3: Group 3’s initial design of their ideal apprenticeship programme*

In Figure 3, the group considered different approaches for designing a successful apprenticeship programme that responded to the previous viewpoints. By including a buddy system, the group thought this would provide some of the extra support apprentices have said they need to be successful in their course work. A buddy system may include apprentices being paired up and encouraged to support one another through the programme. Taking the discussion further we then considered our employer/client and their perspectives. This led to groups thinking about the joy factor and feeling fulfilled by one’s work-life and societal contribution for the apprentice as the ultimate client. In order to achieve these end goals the participants recognised the importance of a strong pre-apprenticeship programme including skills diagnostic and induction that helped apprentices (and employers) fully realise what the future will bring and the pathway to achievement.
Step 4: Prototype

Following the Design Thinking process we moved to generating ‘radical’ ideas, four per group, generating twelve ideas altogether with seven being particularly significant and aligned to the key question, how should apprenticeship design and delivery change to put teaching and learning at its heart given all the competing entities including employers, providers, the government, OFSTED and the apprentices? The process was timed and groups were pushed to think rapidly and free from obstacles with a focus on possible solutions. These included:

1. Pre-apprenticeship phase - taster phase where apprentice candidate can dip in and out of different areas. This type of programme would benefit from starting at age 14 provided that learners are encouraged to sample a wide-range of fields. Such access would help inform learners’ directions in a low-stakes environment.

2. Wellbeing considerations in apprenticeship programmes - ensure mental health and support for apprentices. Given the surge of mental health needs of the youth it is critical that there is provision to help the young apprentices with balancing life, work and study.

3. Ongoing collaboration and development between employer, provider and apprenticeships to truly co-create curriculum and create a genuine community of practice (Wegner-Trayner, 2015) following the basic principles: the domain, the community and the practice. Sample groups could become parts of Local Enterprise Partnerships and should help inform policy makers.

4. True open entry and exit points to an apprenticeship without penalty and with recognition of what has been achieved to date. Emphasis would be on choice and support towards mastery.

5. Minimum duration of 4-5 years in alignment with the 10,000 hours required for developing mastery as described by Gladwell in Outliers (2009), though refuted by several other researchers. The key is time with deliberate practice and precise feedback to support reflection as described by Ferriss in The Four Hour Chef, derived from Wiggins and McTytthe (2005).
6. Apprenticeships that start at level 2 should be highly encouraged and incentivised for continuation towards level 4 or 5, ensuring achievement of higher level strategic thinking skills.

7. Industry should commit to a number of openings in sectors two years in advance in order to give time to plan for both employers and providers. In both Germany and Austria there are strong partnerships between industry and government programmes. Doughty (2018) describes that in Austria employers have to be members of a local chamber of commerce and all 14-year olds must visit the chamber to partake in career aptitude testing and learn about different industries. There may be challenges for small and micro businesses to engage in this forward planning; however, for the larger groups it is critical so that good programmes can take place. Telefonica’s new European initiative Talentum, launched in 2012, was able to meet its goal to create a sustainable workforce by 2015 by creating a pipeline of skilled employees with the hiring of apprentices (CIPD, 2017).

From Step 4 in the Design Thinking Process, the next goal would be ‘iterate’ again and develop a final programme design that could then be further reviewed for impact, viability and meeting the competing needs and ultimately be tested. Due to time constraints and limited knowledge, the group did not accomplish this last step.

**Conclusion**

It is important to note that what was unearthed from the Design Thinking Process is the need for a longer-term approach towards the development and implementation of an apprenticeship programme. It is not sufficient (based on current figures) to start programmes, recruit apprentices and then deliver inadequate training or have insufficient on the job support. Aligning the interests of all parties involved is critical to the development of such programmes and needs to be built in to the funding stream. Based on the group’s recommendations to bring together the provider and employer more frequently, common goals can be achieved and the learning extended beyond the apprenticeship.
Though the session did not fully address the desired outcome around designing an apprenticeship programme that maintained teaching and learning at the heart due to the time limitations, the group agreed that the Design Thinking process was the critical factor and most transferable to other circumstances. By using the toolkit provided, it allowed the group to build models that took into account different perspectives and consider more flexible and innovative ways to address the programme design. This process also helped to uncover the complications of the topic and underlying competing forces that may eventually lead to the dysfunction of an apprenticeship programme if not addressed at the beginning.

References


