# Using the SFIA framework to support work-based learning in Graduate Apprenticeships

Dr Fraser Macdonald, CITP, MBCS

Department of Computer and Information Sciences, University of Strathclyde

f.macdonald@strath.ac.uk

## Introduction

The University of Strathclyde delivers a wide range of graduate and degree apprenticeship programmes. Working in partnership with employers, these programmes provide learners with significant workplace experience while working towards a degree. Apprentices typically spend 80% of their time working in roles with the employer and 20% on academic study. At the end of the programme, graduates have gained both an honours degree and four years of significant workplace experience, making it highly attractive to candidates as well as employers.

One such programme is IT: Software Development (IT:SD), a Graduate Apprenticeship available to learners in Scotland. This apprenticeship attracts learners from a wide variety of employers, in terms of scale, domain and technologies used. Formal work-based learning (WBL) is a key component of this programme. Centred on the collection of an e-portfolio of evidence that demonstrates competence in the workplace, WBL is a significant element of the apprenticeship – accounting for around a quarter of the credits awarded on the programme. Learners are supported by an assigned Learning Adviser (LA), who works them on a 1:1 basis to navigate the WBL elements of the programme.

Within the WBL elements of the programme, significant use is made of the SFIA (Skills Framework for the Information Age). SFIA is an experience-based framework based on levels of responsibility and skill. As such it provides a clear structure for the apprenticeship experience, providing structure both for planning of skills development and recording of practice. As a global digital skills and competency framework, its use in WBL also benefits apprentices in providing exposure to the framework at an early stage in their careers, providing a learning opportunity in and of itself.

Part of the power of the SFIA framework is in its ability to act as a foundation which can be tailored for use. Apprentice on the IT:SD programme tend to be at the start of their career journey or are transitioning career. With this in mind, we have used the SFIA as a bedrock and created additional material and structure which allows apprentices to easily access the framework and to build a set of career development skills which they can utilise beyond the apprenticeship.

# Model of work-based learning

We encourage the apprentice to use a learner-centred model of development:
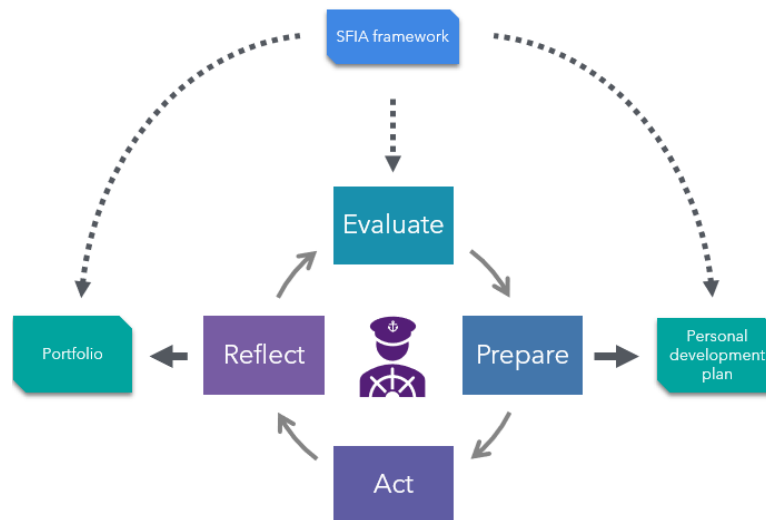


*Figure 1: A learner-centred model of work-based learning*

The key steps in the model are:

- Evaluate – understand where competencies lie and where focus is needed.
- Prepare – record areas for development and translate these into specific objectives.
- Act – Take action to make progress on these objectives.
- Reflect – Document learning in the form of evidence that is collected in the e-portfolio, tagged with competencies.

# Personal Development Planning

A key element of our model is a personal development plan (PDP). This is a document which allows the apprentice to capture a personal analysis and develop objectives for the future.

In the personal analysis, apprentices consider their strengths and the areas for development in the workplace. While some of these may be technical, apprentices are assisted in considering more behavioural areas for development, focusing on those which are essential to working in a business context. Initially, these are framed as generic skills, but we subsequently support their transition to framing areas for development as SFIA competencies,

They are also asked to consider opportunities available to them in the workplace as well as any blockers to their development. Auditing opportunities helps apprentices consider the resources available to them, from online training to specific subject matter experts in technical areas of interest.

Apprentices then develop short-term (6 week) and medium -term (6 month) objectives related to workplace activities. These time horizons are chosen to allow small-scale objectives to be easily formed and achieved, providing a sense of progress, but also working towards large-scale objectives. The 6-week objectives act as "stepping stones" to achievement of the 6-month objectives, thus helping the apprentice develop skills in achieving more significant ambitions.

Objectives must explicitly link to the areas for development identified in the PDP to ensure that they are actively considering how to move their skills forward. As their experience with the PDP and with the SFIA framework increases, areas for development and objectives are linked to the framework.

The act of linking areas for development and objectives to competencies is itself a mechanism for apprentices to explore the SFIA framework. Subsequently, as apprentice hone their personal development capabilities, they are able to focus on specific competencies they wish to progress and develop objectives which aim to fill those gaps. This is achieved by considering the depth and breadth of evidence that has been accumulated in the portfolio of evidence. They therefore move from reactive evidence gathering to proactive opportunity seeking.

The PDP is a living document and acts as a glue for the process. It is updated every 6 weeks or so and is a formal submission for the WBL element of their programme. As a key element of WBL, and a major developmental skill, the LA provides significant guidance in completion of the PDP, reviewing it with the apprentice at each 1:1 meeting. This helps the apprentice gain maximum value from the PDP, benefitting for the experience and perspective brought by the LA.

## The portfolio of evidence

Apprentices record workplace experience in a portfolio of evidence. This is an off-the-shelf e-portfolio system configured with SFIA competencies. Alongside each competency, additional interpretive guidance is provided. Developed by the WBL team at Strathclyde, this guidance explains ways in which the competency may be demonstrated by an apprentice in a workplace role that is typical for our employers and for apprentices on this programme. This greatly assists the learner in understanding what a particular skill might look like.

Apprentices use the STARR template when recording evidence:

- Situation – set out the situation in general to provide context for the evidence.
- Task – explain the specific task or challenge that was undertaken.
- Action – describe the personal actions taken to complete the task.
- Results – describe the outcomes and results of the actions.
- Reflection – provide a personal reflection on the task.

Additionally, they are asked to add clear linkage to the competencies as the final element of evidence. For example:

- "During this task I demonstrated <insert competency> as I <short description of how>".
- "I was able to show <insert competency> through <short description of how>.

In this way, learners are engaged to consider exactly in what manner the evidence supports individual competencies, i.e. the specific elements of the task demonstrate the competency they are claiming. This helps prevent "scattergunning" of evidence against competencies, or situations where the apprentice does not perhaps grasp the full meaning of an individual competency.

This linkage also provides a starting point for Learning Advisers to discuss understanding of individual competencies with apprentices. Understanding of the framework is also developed through suggestions from the Learning Adviser as to any additional competencies which the evidence may support.

## Skills and levels of responsibility

For this programme we utilise the SFIA skill Programming/Software development. This is combined with the 5 generic attributes (Autonomy, Influence, Complexity, Business Skills and Knowledge) to provide a comprehensive framework for our learners. It's vital that apprentices consider not only their technical competency, but the much wider skill set needed to be a successful employee. The generic attributes provide the mechanism for exactly this and are invaluable in assisting apprentices in building a rounded skill set.

The SFIA levels of responsibility are used to support progression of the apprentices. The Programming skills starts at Level 2. To reflect the increasing level of responsibility, learners are given three terms to work at Level 2, 4 terms at Level 3 and 5 at level 4. Each term is 12 weeks in length and the learners will also be gaining and documenting experience over the summer between each academic year.



*Figure 2: SFIA Levels are used to support progression throughout the programme.*

Level 3 provides direct equivalence with RITTech, and this has been accredited by the British Computer Society as such. This allows apprentices to easily gain this registration via the BCS should they wish.

# The 4th year project

Level 4 is a significant challenge for learners, and this is a deliberate design choice for the programme. Alongside Level 4, apprentices are working on their final year work-based project in Term 2 and 3 of 4th year. The 4th year project is a significant individual piece of work - learners are required to manage and deliver a work-based project which adds clear value to the workplace. It provides an excellent opportunity for demonstration of Level 4 responsibilities.

As part of the project, apprentices are required to submit a written report on the demonstration of Level 4, drawing from evidence accumulated in the portfolio. For each competency, they are asked to:

- Explain their understanding of the competency, tying it to their specific circumstances in the workplace.
- Select and summarise key evidence which clearly demonstrates the competency.
- Reflect on the overall degree to which they demonstrate the competency, and if they feel they have not fully met the competency, they can explain work they would undertake in the future to do so.

This model accounts for apprentices who may not have had the opportunity to demonstrate all competencies – while they may not have been able to fully demonstrate it, they can achieve a high mark by showing a good understanding of the competency and how it could be demonstrated. We encourage them to undertake research and to look to more senior employees to fully understand this. As well as providing a mechanism for equal assessment, this also provides apprentices with a platform for further professional development on completion of the programme.

# Supporting our apprentices

Apprentices on the programme have significant support available to them throughout their learning journey, both from the university and their employer.

In terms of the employer, the apprentice has an appointed line manager who manages their work on a day-to-day basis and works to ensure the apprentice is gaining appropriate experience in the workplace. The apprentice may also have access to a mentor, who provides guidance outside of their line management. Many of our mentors are individuals who have successfully completed the apprenticeship degree route and are therefore well-placed to provide support. Finally, our larger employer partners have an apprenticeship coordinator who can provide additional support and act as an escalation point.

The university also provides a number of levels of support. Key to this is the Learning Adviser. Each apprentice is supported by a designated Learning Adviser, all of whom have industrial experience and help bridge the gap between work and study. The LA provides overall WBL guidance to the apprentice, tailored to the role/situation of the apprentice. The LA assists with interpreting SFIA competencies and provides feedback on individual submissions, such as items of evidence, as well as overall progression. The LA will meet with the apprentice 1:1 twice per term, and this provides a key check-in on the apprentice's overall wellbeing. The apprentice also has access to the year head and programme lead for escalating any issues related to learning.

## Conclusion

The SFIA framework is an excellent structure for supporting WBL on the University of Strathclyde's IT: Software Development graduate apprenticeship. The combination of skills and generic attributes provide a comprehensive framework for competency development.

The nature of individual competencies allows SFIA to be utilised by all our apprentices, who come from a wide variety of workplaces. The SFIA levels support progression, ensuring there is an ongoing challenge and to allow high performing apprentices to excel in their final year project.

Building on the framework with personal development planning and portfolio creation provides a platform not just for WBL but allows apprentices to develop wider career management skills. These skills are life-long and will serve them well beyond the apprenticeship programme.

Three cohorts have now graduated from the programme, and the impact of using the SFIA framework is clear to see. The quality of 4th year projects has been extremely high, and have delivered real value to our employer partners. Apprentices have commented on the usefulness of WBL in developing wider career management skills and have used the developed portfolio of evidence to gain promotion.