<title>BRIEFING PAPER</title>

<subtitle>

Competency Frameworks in Practice

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Introduction

In our "Key Learning Objectives" Briefing Paper we discussed the use of Learning Objectives (LOs) within the overall design and implementation of a course or programme.

The incentive for making use of these came from a procedural reading of the curriculum guidelines used by one of our academic clients. While making no particular claim for innovation, we do take some satisfaction from how much use our partnership with this client has been able to make of the fairly strict, but simple, use of LOs at the heart of their course designs. It pays to read your own documentation and guidelines!

In this paper we discuss how working with another business learning client, allowed us to make further use of Learning Objectives to effect a seamless bridge into the Competency Frameworks associated with a set of accredited courses in a particular sector of IT learning.

Not every subject, and hence course, can be readily mapped on to a Competency Framework, but in many subject areas there are some very well defined frameworks. There area a good number defined within IT (Open Systems, Microsoft, etc.) and the UK NHS makes heavy use of frameworks at various levels. Their use is being seen in many more formal, and even informal areas. Funded research programmes, such as e-CF and FlipIT! are also active in developing infrastructure to support individuals, as well as organisations, in the lifelong competence development.

It is a growing area of interest.

Competency Frameworks

Our client was a Microsoft Gold Partner, offering business learning courses for the Microsoft Certified Engineer, Desktop Support Technician and Systems Administrator programmes (MCSE, MCDST, MCSA). These programmes have very well defined Competency Frameworks, at three levels of detail:

1. **Specialisations – the top level**: Typically a course will have about 10 to 12 Specialisations. Examples from the MCSE would be Administering Microsoft Server 2003 or User Accounts.
2. **Skills**: In the MCSE example, skills are indicated in terms of length of experience, and there are roughly three to five skills per specialisation. Examples within the User Accounts specialisation would be Creating & Managing User Accounts or Managing User Profiles.
3. **Competencies – the lowest level**: In the MCSE example, competencies are rated on a four point Likert Scale, from Weak up to Very Good. Typically there are about five competencies per skill. Examples within the Managing User Profiles skill include Roaming User Profiles or Configuring a Mandatory Profile.

Filling in the detail for a single framework is not a two minute job – it takes a bit of time, thought and honest self-appraisal to complete. We must repeat, not all subjects can be so accurately mapped, but in this particular IT domain the three level framework allows a student to undertake a comprehensive pre-assessment of their current capabilities and competencies.

This is an important starting point for the student, but also for the 'manager' of that student, if appropriate.

A Skills Assessment Report can show how this input can be collated and recorded. It can provide a basis for applying an algorithm that can 'calculate' measures of Competence, Ability and Expertise in a particular area. Such algorithms are possibly subjective and specific to an individual subject, but they are in relatively common use in some areas – particularly IT (see, for example, the Learning & Performance Institute's Capability Map).

Using LOs in Competency Frameworks

So, where do Learning Objectives fit in?

Sharp-eyed readers who read our previous Briefing Papers on learning objectives and assessments will have noticed that the number of Specialisations is about the same in number as those advocated for Learning Objectives. It is no surprise that this is deliberate, rather than coincidental, and that the two are different perspectives and use of the same underlying concepts.

One provides a top level definition for the Competency Framework; the other provides the focus for the designs of an accompanying course.

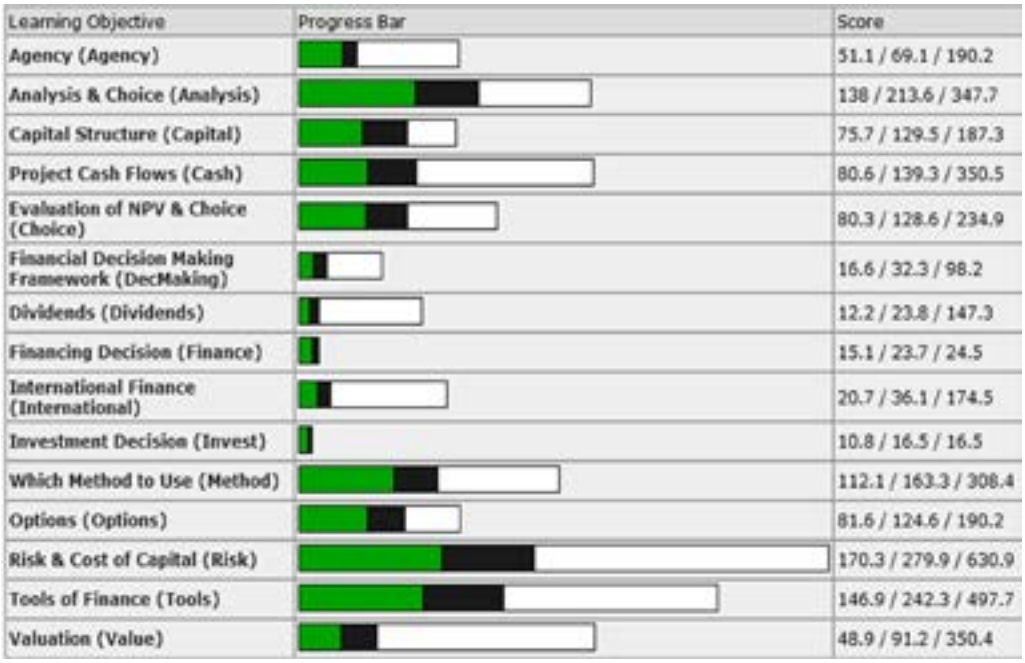
This on its own is probably not sufficient to truly map a framework to the learning materials for a course, but it is a useful starting point. There is one obvious flaw, namely that a Learning Objective may not conveniently map onto a chapter (or similar structure element) of an accompanying publication. However the hooks are there to provide a bridge.

In the MCSE world – and probably true for many business learning courses – Specialisations and Skills tend to map to specific sections of the study materials developed for the course. The design probably and deliberately reflects this. In this example we were able to map:

- Specialisations to Chapters (which themselves mapped to individual Learning Objectives);
- Skills to chapter-based learning objectives – a lower level of objective – which in turn relate to specific sections within the chapter.

What this does allow is a Profile & Training Report to be generated that concentrates on weaknesses, as calculated from the inputs to the competencies and skills ratings. This report can then be mapped directly on to specific chapters and sections, drawing the student's attention to these particular areas.

In effect this is producing a **targeted study plan**, where the areas of focus are listed and where estimated study times can be depicted[1]. Since we manage and publish integrated domains of information this study plan can be directly linked – from the electronic form to the web-based study texts – to the actual chapters and sections in question.



Learning Objective	Progress Bar	Score
Agency (Agency)		51.1 / 69.1 / 190.2
Analysis & Choice (Analysis)		138 / 213.6 / 347.7
Capital Structure (Capital)		75.7 / 129.5 / 187.3
Project Cash Flows (Cash)		80.6 / 139.3 / 350.5
Evaluation of NPV & Choice (Choice)		80.3 / 128.6 / 234.9
Financial Decision Making Framework (DecMaking)		16.6 / 32.3 / 98.2
Dividends (Dividends)		12.2 / 23.8 / 147.3
Financing Decision (Finance)		15.1 / 23.7 / 24.5
International Finance (International)		20.7 / 36.1 / 174.5
Investment Decision (Invest)		10.8 / 16.5 / 16.5
Which Method to Use (Method)		112.1 / 163.3 / 308.4
Options (Options)		81.6 / 124.6 / 190.2
Risk & Cost of Capital (Risk)		170.3 / 279.9 / 630.9
Tools of Finance (Tools)		146.9 / 242.3 / 497.7
Valuation (Value)		48.9 / 91.2 / 350.4

Figure 1: Personalised student progress report

For the student and the tutor/ manager

This coupling of competency framework to the course design has obvious benefits for the student. The Skills Assessment report can actually be re-presented to show exactly the same profile as the Progress Reports reproduced in Figure 1. This then provides the student with a pre-study profile of their competencies. As they work through the course materials and the Learning Objective-focussed assessments, they should see their progress building up to – hopefully – exceed that of the pre-study profile.

However the student's tutor (who presumably has many students), or learning manager within a corporate setting, can also accrue benefit. The tutor can look at this same mapping of pre-study competency ratings to end-of-study profiles to see how the students progressed, but in the corporate environment the training manager can get a valuable indication of where his/her training budget should be targeted. After learning delivery the manager can see some measures of effectiveness of this delivery and expenditure.

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[1] Our meta-data for each chapter level learning objective contains an estimate of the required study time. In essence it is acting as a lesson.

Conclusion

Understanding the significance of, and using, Learning Objectives can offer significant benefits, as shown in both this and the "Key Learning Objectives" Briefing Paper. In this paper we moved away from assessments to show how LOs can be directly linked to a Competency Framework – for a specific subject area – and how this Competency Framework can be directly related back to the underlying learning materials. We recognise that this is not suitable for all subjects, but where it is applicable there is value to be gained.

We have implemented a quite generic system for one major commercial learning provider in a well defined domain, but we have learned much about how to map the framework onto the domain of learning materials. This will be applied to other domains in the near future and we will feed back the results.

Further Information

See:

- the Microsoft MCSE Competency Framework;
- the The European e-Competence Framework.

The three reports were:

1. A sample Self Assessment Report, showing the basic input from the student but with ratings generated by the governing algorithm for this domain;
2. A sample Profile & Training Report, which shows the inputs from the student and how they relate to areas of weakness which in turn are mapped to Learning Objectives and sections of content in the course;
3. A sample Roll-up Report, which would be used by the Business Learning Manager, or equivalent, to pinpoint areas of learning need and hence, potentially, expenditure.

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