VICTORIAN QUALIFICATIONS AUTHORITY

CREDIT MATRIX Draft Model

Final report:
Volume One
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1 Background

The Victorian Qualifications Authority commissioned Peter Noonan Consulting, in association with Andrea Bateman from the University of Ballarat and Dr Shelley Gillis from the University of Melbourne, to undertake the development of the draft model for the Credit Matrix, a major initiative of the VQA. Dr Jack Keating from University of Melbourne acted as a specialist adviser to the project.

The project brief was to prepare a detailed model, encompassing:

1. The number of levels;
2. The descriptors for each level;
3. A method of quantifying volume;
4. A process for application of the model; and
5. Principles and definitions to support the model.

The brief also required an overview of strategic and tactical advice for the implementation of the Credit Matrix, particularly in relation to and compatibility with the AQF.

The brief also required the consultants to have regard to Credit Matrix Initial Design, a report on the initial design of the Credit Matrix undertaken by members of the consulting team for the VQA in September 2003. The initial design report provides an overview of the international literature, analysis and discussion, as well as recommendations for the initial Credit Matrix design. The VQA also released The Credit Matrix Building Bridges Between Qualifications, a consultation paper dated June 2003 which sets out the purpose and key features of the Credit Matrix. This report should be considered against the background of those documents and the outcomes of consultations conducted by the VQA.

During the course of the project, a project variation was initiated by the project team and agreed by the VQA to allow for a survey of the draft complexity model to be undertaken rather than testing only through modeling projects which the VQA had established, or was establishing. The results of this survey are outlined in this report, and a detailed analysis of the survey methodology and findings are contained in Volume 2 of this report.

As only limited testing was then available through the modeling projects, and because of the different and innovative nature of the complexity model compared to other international models, it was agreed between the consultants and the VQA that this report should outline the proposed model in detail, including options that had been considered during the developmental process, but that the Report’s recommendations to the June meeting of the VQA allow for further testing and validation to take place with a broader range of potential users. This is an important part of the next stage of the developmental process as there is a difference between an empirical testing of the key elements of the model to assist in its design
and ‘going live’ with full application having regard to the different needs of potential users.

A summary of the outcomes of testing that was undertaken with two modeling projects is contained at section four of this report with full reports to be available at the Board meeting.

1.1 Complexity

1.1.1 Findings from the initial report

Complexity – or the level of difficulty of a unit, subject or module - is one key element of the Credit Matrix. Complexity is based on ordered levels of difficulty, or demands on learners, within broad domains of learning outcomes, such as knowledge and autonomy. Descriptors are developed for each level within each domain. The Credit Matrix Initial Design report made the following recommendations in relation to complexity:

a. That for the development of the descriptors the two traditional domains – cognitive and application – should be employed, at least as a starting point.

b. The use of 8-10 levels is favoured, recognising that there is scope for compression of the current implied AQF levels if the top and bottom levels are open ended and that there is probably substantial overlap in the areas encompassed by middle level qualifications.

c. The design of the Credit Matrix should allow for units to be aligned at levels based on either integrated taxonomies drawing on the two domains, or drawing on separate taxonomies reflecting the two domains. This was considered the most conceptually challenging issue in the credit matrix design.

1.1.2 Process for the development of the domains

Following this initial design report, a further analysis of the existing models was undertaken to inform the development of three potential domains:

- Cognitive: Knowledge (depth and breadth);
- Psychomotor: Skills (depth and breadth); and
- Autonomy and/or level of accountability.

The following table represents the synthesis of relevant international credit models against these potential domains.
Following this analysis, a standard setting process was utilised (an iterative process and an expert panel) to develop the proposed indicators for the level descriptors.

In the preliminary stages of the development, the following assumptions were made:

1. Not all indicators had equal level of difficulty across domains, nor were there an equal number of indicators for each domain. The ‘inherent’ level of difficulty of the indicators would be determined through an analysis of the amount of complexity required to demonstrate the indicator and would require the comparison to other indicators within and across domains. This is different to all other models that have been analysed where each indicator had a presumed equivalent indicator for another domain.

2. Each of the domains were independent of each other.

3. The indicators would be neutral, that is, they did not identify the learning or the workplace context.

The final ‘first’ draft of the indicators included the following domains:

- Knowledge type;
- Application of skills and knowledge;
- Autonomy;


- Accountability; and
- Problem solving (which was the essence of cognitive processes).

These domains were an extension of the broad cognitive and application domains referred to in the initial design report. The project team, in cooperation with those involved in the panelling process, found it necessary to break these two initial broad domains out into more specific and coherent strands.

The ‘final first’ draft of the domain indicators was circulated and panelled with VCAA and VQA representatives, modelling project participants, international experts and industry representatives. The indicators are presented in Table 1 below.

**Table 1: Domains and indicators**

<table>
<thead>
<tr>
<th>Domain (item)</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain 1: Application The context in which the skills and knowledge are to be applied.</td>
<td>1.1. The skills and knowledge to be acquired are to be applied in stable contexts involving defined and predictable variables.</td>
</tr>
<tr>
<td></td>
<td>1.2. The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.</td>
</tr>
<tr>
<td></td>
<td>1.3. The skills and knowledge to be acquired are to be applied and contextualised in changing contexts, involving defined but unpredictable variables.</td>
</tr>
<tr>
<td></td>
<td>1.4. The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.</td>
</tr>
<tr>
<td></td>
<td>1.5. The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.</td>
</tr>
<tr>
<td>Domain 2: Autonomy The amount of guidance and the clarity of parameters in which individual or group activities are to be performed.</td>
<td>2.1. Individual or group activities are undertaken within clearly defined parameters performed with minimal discretion under close guidance.</td>
</tr>
<tr>
<td></td>
<td>2.2. Individual or group activities are undertaken within clearly defined parameters performed with some discretion under frequent guidance.</td>
</tr>
<tr>
<td></td>
<td>2.3. Individual or group activities are undertaken within clearly defined parameters performed with a significant degree of discretion under general guidance.</td>
</tr>
<tr>
<td></td>
<td>2.4. Individual or group activities are undertaken within broad parameters performed with minimal guidance.</td>
</tr>
<tr>
<td></td>
<td>2.5. Individual or group activities are self-directed and are undertaken within few parameters, performed with minimal guidance.</td>
</tr>
<tr>
<td>Domain 3: Accountability The degree of accountability for the</td>
<td>3.1. Activities are undertaken with minimum accountability for own processes and outputs, within clearly defined parameters.</td>
</tr>
<tr>
<td></td>
<td>3.2. Activities are undertaken with some accountability for own processes and outputs, within clearly defined parameters.</td>
</tr>
<tr>
<td></td>
<td>3.3. Activities are undertaken with full accountability for own processes and...</td>
</tr>
<tr>
<td>Domain (item)</td>
<td>Indicator</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>processes and outputs of oneself and others</td>
<td>3.4. Activities are undertaken with <em>full</em> accountability for <em>own</em> processes and outputs, and <em>some</em> accountability for processes and outputs of <em>others</em>, within <em>defined</em> parameters.</td>
</tr>
<tr>
<td></td>
<td>3.5. Activities are undertaken with <em>full</em> accountability for <em>own</em> processes and outputs, and <em>full</em> accountability for processes and outputs of <em>others</em>, within <em>broad</em> parameters.</td>
</tr>
<tr>
<td></td>
<td>3.6. Activities are undertaken with <em>full</em> accountability for <em>own</em> processes and outputs and <em>full</em> accountability for processes and outputs of <em>others</em>, with <em>few established</em> parameters.</td>
</tr>
<tr>
<td>Domain 4: Problem Solving</td>
<td>4.1. <em>Established</em> guidelines and processes and past precedents are <em>used</em> to address <em>routine</em> problems.</td>
</tr>
<tr>
<td>The type of problems to be solved and the strategies to be employed</td>
<td>4.2. <em>Established</em> guidelines are <em>interpreted</em> and <em>applied</em> with minor variations to processes, to address <em>routine</em> problems.</td>
</tr>
<tr>
<td></td>
<td>4.3. <em>New</em> guidelines are <em>developed</em> individually or in collaboration with <em>others</em>, to address <em>non-routine</em> problems.</td>
</tr>
<tr>
<td></td>
<td>4.4. New guidelines and processes are <em>identified</em> and <em>developed</em> to predict and/or address significant, <em>complex</em> or <em>emergent</em> problems.</td>
</tr>
<tr>
<td></td>
<td>4.5. Conceptual frameworks are used to formulate and test <em>problems</em> that make a <em>significant contribution</em> to theory, method or practice.</td>
</tr>
<tr>
<td>Domain 5: Knowledge</td>
<td>5.1. <em>Concrete or factual</em> in reference, and basic in comprehension.</td>
</tr>
<tr>
<td>The kind of knowledge involved (ranging from concrete to abstract to metacognitive to strategic to new)</td>
<td>5.2. <em>Concrete</em> in reference, with <em>some comprehension</em> of relationships between knowledge elements.</td>
</tr>
<tr>
<td></td>
<td>5.3. <em>Concrete</em>, with <em>some elements of abstraction</em> or <em>theory</em>.</td>
</tr>
<tr>
<td></td>
<td>5.4. <em>Theoretical</em> and abstract, with significant <em>depth</em> in a number of areas.</td>
</tr>
<tr>
<td></td>
<td>5.5. <em>Theoretical</em> and abstract, with significant <em>underpinning theory</em>.</td>
</tr>
<tr>
<td></td>
<td>5.6. <em>Metacognitive</em>, in that learners must recognize limitations of current knowledge and have familiarity with sources of new information and integration of concepts across a variety of areas.</td>
</tr>
<tr>
<td></td>
<td>5.7. <em>Strategic</em>, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning.</td>
</tr>
<tr>
<td></td>
<td>5.8. <em>New knowledge</em>, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review.</td>
</tr>
</tbody>
</table>

### 1.1.3 Survey process and findings

#### 1.1.3.1 Survey process

As indicated in the introduction to this report, the VQA Credit Matrix Board Working Party agreed to a proposal from the project team that the most effective
way to test the strength of the domains and the indicators contained in them was to undertake a survey of individuals familiar with units of learning across the levels contained in the domains and to subject the outcomes to a detailed statistical analysis using Rasch methodology in order to:

- Investigate the ordered nature of the indicators within each domain, as well as the identification of redundancy and non discriminating indicators;
- Calibrate the items on a single continuum, thus enabling the relative difficulty of each indicator to be determined not only within the domain, but across domains. This will assist with determining whether the domains are underpinned by an overarching single dimension and, if so, will enable the development of a single set of band level descriptors to define the model;
- Determine relationships between the five domains to be determined; and
- Explore typical patterns of domain ratings within and across the three educational sectors.

The ‘inherent’ level of difficulty of each of the five domain indicators was to be determined on a single measurement scale through item response modelling procedures. This is different to all other models that have been analysed where each indicator had a presumed equivalent complexity indicator for another domain.

In addition, this process would also determine the number of levels that could clearly differentiate varying levels of complexity and would subsequently enable each level to be defined.

A sample was selected in order (a) to provide variability on the measures used to assess the domains of complexity, and (b) to provide a representative mixture of units or modules offered within senior secondary education, vocational education and higher education. A sample was drawn from the consultants, the Victorian Curriculum and Assessment Authority (VCAA) and the VQA’s network of contacts within schools, RTOs and university faculties to ensure representation of the defined ‘target population’. Two hundred and fifty four (n=254) survey responses were obtained. Of these, 31% represented senior secondary education, 43% represented the VET sector and 25% represented Higher Education. A range of learning areas was evaluated using the questionnaire.

The sample aimed to gather responses to order and evaluate the indicators and to determine the cut points for the levels of complexity. The sample was sufficient for these purposes. However, in a number of cases, the sample was small in terms of the number of surveyed units at some AQF level qualifications. Therefore, preliminary conclusions drawn in the survey report, which relate to units within AQF qualification, should be treated with caution and cannot necessarily be generalised to all units within an AQF qualification or to full AQF qualifications.
1.1.3.2 Findings of survey

As the report of the survey, analysis of the data and the findings is quite extensive, it has been prepared as Volume Two of this report.

A summary of key findings and methodology used include:

1. **Number of domains.** To examine the interrelationships among the five domains, Pearson’s product moment correlations were computed. Whilst all correlations were significant, they were only moderate (ranging from 0.44 to 0.64). The moderate correlations indicated that, although there was some common variance in the ratings, each domain explained some unique variance. As such, there were no two domains rated similar enough to warrant the merging of any two domains.

2. **The precision and accuracy of the domain measures** was determined through the examination of the fit of the five items to the Rasch Model. This provides a means of determining how accurately the domains described the complexity of the learning area. Each of the five domains produced acceptable fit estimates, thus providing evidence of construct validity. Furthermore, the scale had an internal consistency estimate of 0.83 (cronbach alpha), indicating high reliability.

3. **Indicator difficulty estimates.** Each of the indicators used to define the Application, Autonomy, Accountability, Problem Solving and Knowledge domains of complexity were calibrated using item response modelling (IRM) (Rasch, 1960). Through the use of a partial credit model, the same scale of measurement was developed for expressing both indicator difficulty and unit complexity. This resulted in a difficulty estimate being developed for each of the indicators within a Domain, as well as an overall complexity estimate being developed for each unit. The estimates for each indicator were expressed in a metric called a ‘logit’.

The results from the survey enabled each of the indicators to be ranked in terms of perceived complexity according to the following five domains: Application, Accountability, Autonomy, Problem Solving and Knowledge. In addition, a difficulty estimate was determined for each indicator, as well as its measurement error. This meant that the intervals between adjacent logit values were equal with respect to complexity (hence the difference between logit 1.2 and 1.4 is the same as the difference between 0.8 and 1.0 etc). As such, the difficulty estimate for each indicator (referred to as a logit score) could be used to determine precisely how much more difficult one indicator was to another. The analysis showed that the most difficult indicator to assign to a unit was from the Knowledge Domain, indicator 5.8, followed closely by indicators 2.5 and 3.6. Next, were indicators 1.5, 5.7, 4.5 and 3.5 etc.

As expected, the easiest indicators to assign to a unit of learning were the first indicators from each of the five domains of learning. In fact, all 254 units that were evaluated had a complexity level at or above the easiest indicator within
each domain. This illustrated that the first indicators on each domain were collectively easier than any of the units evaluated, even those that were related to Certificate I (e.g., work education units). At the other end of the scale, only two of the 254 units that were evaluated were rated at or above the most difficult indicator (i.e., 5.8). All other units had a complexity estimate that was within the range of the difficulty estimates of the domain indicators. Given the logit range and the relatively small measurement errors, it appeared as though the indicators permitted the reliable measurement of the domains over a broad span of unit complexity.

4 Units within qualifications difficulty estimates. The average logit estimate for each qualification was also produced from the complexity estimates of each unit, according to its relationship to a qualification. Too few units were reviewed within the VCAL program to determine whether there were significant differences between the mean (average) logit score for the VCAL and VCE subjects. However, a significant difference1 was found between the mean logit values for units within ‘Cert I & II’ and those within the ‘VCE’, with the former being perceived as significantly less complex.

Furthermore, the VCE subjects were also seen as equivalent in complexity to all units of competency that were to be packaged toward Certificate III-IV and the Diploma and Advanced Diploma. Similarly, there were no significant differences between the units of competencies that were packaged toward Certificate III right through to Diploma/Advanced Diploma in terms of overall perceived complexity. However, the Bachelor Degree subjects were judged, on average, as significantly more complex than units that packaged toward any of the qualifications offered in both Secondary and VET. Hence, the Certificate I-II, VCE, Cert III-IV and the Diploma/Advanced Diploma units were all perceived to be, on average, significantly less complex than subjects offered within the Bachelor Degree. As expected, the Master and Doctoral subjects were, on average, rated as significantly more complex than subjects within the Bachelor Degree.

Determining levels of complexity – cut-points. The survey report provides an extensive exploration of the issue of how many levels should be included in the overall Complexity Model, and where the cut points should be set. In summary, to determine how many levels and where the cut points should be within the model, the difficulty estimates of the indicators were plotted in decreasing order. The set of indicators were then examined to identify specific clusters or groupings to determine cut points for varying complexity levels within the model.

Six cut points were identified that showed clear groupings of indicators according to similar difficulty estimates. To further investigate the

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1 Mean logit scores for each qualification were tested for significant differences using a series of independent sample t-tests at the 0.05 level (equal variance not assumed).
appropriateness of the six cut points, the characteristics of the units of learning that were typically positioned at each level were examined according to:

- the unit’s relationship to a qualification (as determined by the average complexity estimates of the units within each qualification) and, secondly,
- the most frequently selected indicator per domain for that particular qualification (referred to as the modal response).

This process was repeated based on an \textit{a priori} decision of recognising eight levels within the model. Under this approach, although eight levels could be recognised, levels were not as clearly differentiated and with fewer tendencies for a band level to be characterized by certain qualifications and domain ratings.

Both the Six-Level and the Eight-Level Complexity Models produced significantly different average unit difficulty estimates for each level. This indicates that each level was clearly distinguishable from the next in terms of complexity.

### 1.1.3.3 Survey Report Recommendations

The recommendations from the survey report which form the basis of the issues for consideration in the following section of this report are:

1. \textit{Number of domains}. Each of the five domains should remain as separate within the overall model, as each provides some unique variance in explaining complexity.

2. \textit{Number of Levels}. If an overall level of complexity is to be made across the five domains (i.e., one overall judgement), it is recommended that the Six-Level Complexity Model be the preferred model. Six levels will ease holistic judgements of the overall level of complexity, as there will be less chance that an individual unit’s five domain ratings will be spread across many levels on the model. This is particularly the case for the units that related to Certificate III to Diploma. These units showed a great deal of variation in ratings across the five domains (e.g. Certificate III on the Eight-Level Model spread across six of the eight levels). Variation of ratings across domains makes it difficult to make an overall judgement of a unit’s complexity level, and the introduction of more levels increases this difficulty.

   If, however, a separate rating on each domain is to be reported within the Credit Matrix Model, it is recommended that the Eight-Level Complexity Model be used. This will provide more information concerning the level of complexity within a domain.

3. Modifications to the written statements for each indicator. The following changes are recommended that are consistent with the qualitative feedback and data analysis:
### Domain 1 Application

No changes

### Domain 2 Autonomy

- Indicators 2.2 and 2.3, the word *clearly* be removed

### Domain 3 Accountability

- Reduced to 5 indicators from 6
- Indicator 3.1 (minimum accountability) deleted and replaced with 3.2 (some accountability) as the majority of the units packaged toward Certificate I were being judged at indicator 2.

### Domain 4 Problem Solving

No changes

### Domain 5 Knowledge

- Reduced to six indicators (as opposed to eight)
  - Indicator 5.4 removed from Level 3 and Indicator 5.5 simplified to just ‘abstract and theory’
  - Indicator 5.6 metacognitive removed (qualitative feedback suggested that this should be encouraged and taught at all levels of education and therefore may not indicate increasing complexity of the knowledge required)

Note that this change also reflects Recommendation 2: Number of Levels.

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**1.1.4 Issues for Consideration**

**1.1.4.1 Descriptors**

Based on the survey outcomes and the feedback during the consultation process, we believe that the level descriptors should be based on the five domains and descriptors outlined in the draft model, with the amendments referred to above. The survey outcomes indicated that each domain was seen as relevant and independent of the others. It also indicated that there was a logical progression and internal consistency within the domains. There is, however, scope for further refinement of the specific wording of the descriptors.

This is particularly the case in considering the nature of the descriptors. During the consultation process following the survey report, participants were asked to consider three options in relation to the descriptors:

1. The descriptors would be presented on a full grid depending on the final number of levels;
2. The descriptors would be presented as consolidated points taken from the relevant domain indicators; and
3. The descriptors would be presented as a succinct paragraph or gist statement based on the relevant indicators.

These options can be easily considered in the material presented in Appendix One of this report.

However, in reality, these options are not mutually exclusive; the descriptors could be presented in different ways for different audiences. For example, the succinct statement may be more appropriate for general audiences, but specialists undertaking a credit rating process may prefer to use the full complexity grid to make detailed comparative judgements between units at different levels.

We suggest that these options be further considered during the next phase of development of the Credit Matrix. The specific needs of students, parents and employers will need to be considered in this context.

1.1.4.2 Number of Levels

Based on the findings of the survey, we believe that the Authority should consider a model that contains either six or eight levels but that this decision should be based on further trialling than was possible in the time available following the decision to adjust the project methodology to allow the survey to take place. Appendix One outlines levels and descriptors for both options.

During the consultation process, the advantages and disadvantages of each option were presented in the following terms.

**Six levels**

The implementation of a six level model would:

- Ease the determination of complexity of units;
- Ease the interpretation for end users;
- Allow holistic judgement; and
- Not be seen to be a replacement of the AQF, but instead something different.

However, this number of levels may mean that there could be reliance on volume (that is, more learning rather than greater complexity of learning as a distinguishing factor) for some units at levels 3 and 4 (eg. Cert III to Diploma). In addition, with a lesser number of levels it would be seen to be different from other international models.

**Eight levels**

The implementation of an eight level model would:

- Provide more levels for determining complexity; and
- More closely reflect perceived levels of AQF.
However, this model may mean that there would be greater variation of domain levels within units and might require more detailed decision making rules and definitions to make overall judgements. This model is ideal for recognising and reporting individual domain ratings, but less ideal for overall judgements across domains.

We recognise that these options, particularly of six levels, are at variance with other international models which contain more levels. However, we believe that this difference can be explained by differences in the developmental process, in that other models worked from the number of existing qualification titles that had to be accommodated within the framework, whereas the process followed for this project was to identify domains, possible points of progression and differentiation in the domains, panelling of the outcomes and then a full survey to test its validity.

Issues related to the relationship between these potential levels and the Australian Qualifications Framework are explored at section five of this report.
2 Volume

2.1 Findings from the initial report

The Credit Matrix Initial Design Report noted that volume - or the amount of learning - is a common parameter in all other frameworks and cannot be avoided, even in an outcomes oriented system. ‘Estimated average learning time’ would appear to be the most commonly accepted parameter and one that can be most easily applied to existing qualifications. However, it was clear that estimated time should encompass the entire learning process, not just ‘delivery hours’ by an institution.

The process for assigning volume was also discussed in the report. It was noted that the process involved in assigning volume to existing qualifications is potentially the most administratively difficult and complex process for the development and implementation of the Credit Matrix given the substantial differences in the size of units across the sectors, the different basis upon which volume is determined in the different sectors and the number of units and qualifications involved.

2.2 Process for development of volume

The process for developing a working definition for volume of learning was undertaken utilising a desktop audit of the international literature, the Australian VET literature, VET processes related to funding (implementation guides within Victoria), and VCAA documentation, as well as university information pertaining to the credit point systems and to student workload.

2.3 Findings

In general, other national frameworks use delivery or learning hours as the determination of the volume of learning. In essence, these are notional learning time or the anticipated time required for an average learner to achieve competence. Both the Scottish and UK models ascribe credit points to a component (unit/module) or a qualification to describe, as well as to define, the packaging of a qualification type.

Both the Scottish and UK models are based on the premise that a full-time year in school/further/higher education is typically around 1200 hours of learning activity (SCQF 2001). Credit is also proposed to be ‘expressed in a quantified form so that learning can be compared in terms of relative volume (number of credits)’ (SCQF 2001, p. 24). One credit point equates to 10 hours and relates to the expected number of hours for a learner to achieve the specified learning. However, in Ireland, the National Framework of Qualifications indicates that volume of standards of knowledge, skill and competence refers to the amount of knowledge, skill and competence at a particular level or levels. The Framework is keen to clarify that the

2 La Trobe University, University of Melbourne, University of Ballarat, Monash University.
The essential meaning of the concept of volume is not that of notional learning time. Volume refers to the outcomes and the standards required. For award-type descriptors, volume is simply defined as ‘small, medium and large’.

In Australia, the different sectors retain their separate ‘outcomes’ and ‘process’ based approaches (see Young 2001). Essentially, however, because it is qualifications based, the AQF, or the processes that surround it, implicitly use time based measures of volume, but these are derived from fundamentally different methodologies.

In the secondary and higher education sectors, a system of describing credit points and workload already exists.

In the higher education sector, the notion of contact and non-contact time, workload and difficulty of assessment pervade the concept of their use of the credit point system. The credit point system is based on the expected workload or time commitment for an average student, which is approximately 1200 hours of contact (and non-contact time) per year. In addition, the AQF refers to three and four year degrees, and the higher education and schools sectors ‘units’ are commonly organised around years or semesters, reflecting more institutional organisational requirements than notions of ‘average learning time’.

In the secondary sector, the notion of volume is less obvious; the VCAA study designs only indicate ‘duration’ which equates to ‘scheduled hours’, an allocation of approximately 50 hours. However, the focus in both the higher education and secondary sectors is the notional time expected by the learner; this is opposed to the nominal hours expected of the trainer in the VET sector.

In the VET sector, the estimated volume of learning does not equate to nominal hours, which is related to estimated training and assessment time required by the trainer. In VET, the guidance given is that the calculation of nominal hours is that it is the amount of face-to-face delivery, classroom activities (not necessarily monitored) and the time taken to assess. The focus is on the ‘trainer time’ rather than the learning time. However, there does not appear to be a definition for ‘nominal hours’ in recent VET literature. Nominal hours are used for the purposes of course planning and/or the provision of funding.

There are no specific time requirements for VET certificates within the AQF, which acknowledges that people will take different periods of time to achieve the competencies. In addition, VET units in effect are derived from analysis of work tasks in different industries and occupations, the size of units may be influenced by industrial issues and outcomes and Registered Training Organisations are required to recognise qualifications and statements of attainment issued by other RTOs.

However, the States and Territories assign nominal hours to whole VET qualifications and to units of competency for funding and performance reporting purposes. The initial design report also noted that some Training Package developers have attached point values to units of competence, but these are
primarily for industrial purposes and are relevant only within the package concerned - they have no exchange value even in the VET sector.

The initial report stated that measurement of volume cannot be avoided and that there is little alternative to the concept of average or notional learning time as a parameter as long as it is understood and applied in the terms outlined in the VQA discussion paper. Both the UK and Scottish models are closely aligned to the accepted notion of contact and non-contact time, workload and difficulty of assessment in the school and higher education sector within Australia. The Irish model, however, refers more to the amount of knowledge, skill and competence which is not directly compatible with that of these two Australian sectors. Regardless, either model’s application of volume could be applied to the Credit Matrix and hence will invariably be directly opposed to the notion of ‘nominal hours’ in VET.

As the agreed definition of notional learning time within the UK and Scottish models is more closely aligned to the Australian higher education credit point system and will provide the ‘least point of resistance’, it is proposed that the Credit Matrix application of credit points (volume) be similar to that of these models.

In essence, an agreed definition for volume of learning is required to ‘balance’ the notion of complexity and demand of a unit of learning. These two parameters, complexity and volume, can help define and provide a common understanding of the outcomes of a unit of learning. In the Credit Matrix model, ‘complexity/difficulty’ of learning’ is addressed by the domains and their indicators as well as the subsequent ‘levels’; the notion of volume, on the other hand, provides another parameter to assist the description of a learning outcome. This parameter should be distinct from that of complexity, as to merge the two parameters does not provide for a clear and justifiable additional aspect to the model.

From the international definitions and from the desktop analysis of a selected number of Australian university websites, the following definition has been developed:

> Volume of learning is the expected notional average number of hours required by the learner to achieve the specified learning outcomes. It is the average estimated learning time, which encompasses the entire learning process, regardless of the context.

The definition of volume of learning does not conflict with the accepted understanding within documentation of the sampled Australian universities. It should also be considered in terms of all of the learning pathways available under the AQF.

In addition, for reasons of simplicity, and to accommodate the variation in the potential volume of existing units, modules and subjects, it is suggested that a measure of 10 hours equating to one credit point be applied for the Credit Matrix model.
The following information is provided in the draft guidelines referred to below to assist in the determination of volume:

The estimation of volume learning time should take into consideration all learning and assessment activities required for the achievement of the learning including, e.g.

- formal learning, including classes, training sessions, coaching, mentoring, seminars, lectures and tutorials
- doing practical work in laboratories, workshops or other locations
- information retrieval, eg in libraries, web
- private study, revision and self-directed time
- work-based activities which lead to assessment
- practice – gaining, applying and refining skills
- undertaking all forms of assessment

---

3 Adapted from SQA 2001
3 Guidelines and Process for Application

The Guidelines for applying the Credit Matrix are part of the project deliverables. They were designed to define the key aspects of the model, as well as the basis for further development. In the limited time available after the completion of the survey and refinement of the model, two modelling projects were requested to test the model on a limited basis.

To assist in this process, guidelines (one for an eight level model and one for a six level model) were provided, along with the gist statements for each level. In addition, supplementary support material was provided by the VQA on the process of credit rating. This advice was operational only and not included here in this report. These guidelines (using the ‘eight level’ model only) and the process for application are at Appendix Two.

The guidelines provided to the modelling projects defined the:

1. Purpose of the Credit Matrix;
2. Operational definitions;
3. Key components; and

The operational definitions and the key components of the guidelines define the essential aspects of the Credit Matrix, especially ‘assessable unit’, ‘complexity’ (credit level) and ‘volume’ (credit point). The process for application outlines the key purposes of the Credit Matrix (credit rating as well as determining credit and RPL) and initial guidance on applying the Credit Matrix in these circumstances.

There are a number of specific comments and issues arising from feedback about the draft guidelines from the modelling projects and from the broader consultation process.

Consequently, the draft guidelines at attachment two are those that were provided to the modelling projects. While they provide the basis of the final guidelines, they will require further revision and testing, having regard to the range of potential users and the different purposes of the Credit Matrix. Specifically the Credit Matrix Board Working Group asked that the purpose of the Credit Matrix outlined in the draft guidelines be limited to the specific purposes outlined in the consultation paper.

Note that this advice recommended that the raters use the level descriptors as the first point of reference and refer to the individual domain descriptors if the level was difficult to determine.
4 Modelling Projects

Full reports from the two modelling project reports will be available to the VQA Board as separate reports and will need to be fully considered in the next stage of development. These summary findings are presented here only as they relate to the model (six and eight levels\(^5\)) and in terms of feedback on the guidelines.

The two modelling projects included the IT Skills Hub and the Gippsland Education Precinct. The IT Skills Hub trialled the eight level model and the Gippsland Education Precinct trialled the six level model, that is, the only variable between the projects was the number of complexity levels.

The IT Skills Hub report noted that the information relating to volume (including the definitions and guidance) were adequate for their purposes, with comments from some participants emphasising that the approach used had to take into account issues such as variation in learner ability and resource availability. The report indicated that the levels of complexity appeared appropriate and that they ‘gave a clear snapshot’.

The Gippsland Education Precinct report noted that the definition of volume was adequate to yield reasonable estimates of volume of learning. However, it is worth noting that for the process for determining volume, especially in the VET sector, the rater did not necessarily apply the design principles, as the rater added an additional 50% of the nominal hours to determine volume. Raters in this modelling project also used decimal points of whole numbers in recording volume. The possibility of this aspect of the model needs further consideration in the finalisation of the model. The report indicated that there appeared to be satisfaction with the applicability of the levels of complexity, with the comment that the higher education sector indicated a need for another level between level five and level six.

The modelling projects were also asked to provide advice on the relevance and usability of the guidelines. In general, they were positive. It should again be emphasised that further development of the guidelines will be influenced by decisions on the final model. Whilst feedback from the modelling projects will undoubtedly be helpful, further feedback would need to be sought once the guidelines are refined in line with the final model.

\(^5\) It is worth noting that, regardless of which model (6 or 8 level) is used, the top two levels and the bottom two levels of the 6/8 level model are identical in either model. The variation between the two models is in the middle levels.
5 Relationship and Compatibility with the Australian Qualifications Framework

The consultant’s brief also requested advice on the relationship between the emerging Credit Matrix model and the current Australian Qualifications Framework (AQF).

The Report on the Initial Design of the Credit Matrix identified the relationship between the AQF and the Credit Matrix as being more complex and potentially problematic than may have been assumed in the Authority’s initial thinking about the development and use of the Matrix. The Report noted that the AQF is based on descriptions of the qualifications it was designed to encompass, rather than a consistent and coherent set of descriptors based on common learning domains.

This is a fundamental issue as there is an intrinsic difference between the AQF and the Credit Matrix. In essence, the AQF is a qualifications framework rather than a unit based model; that is, the levels relate to qualification outcomes, rather than to unit/module outcomes. The Credit Matrix has focussed on the need to attach levels to units of learning, not to full qualifications. The initial design report noted that the AQF has no formal levels; there are 11 potential levels across its spectrum of qualifications.

However, we believe that the survey process, which asked respondents to identify a unit or module taken from an AQF qualification for survey purposes, demonstrates that it is possible to use the Credit Matrix in conjunction with the AQF, even if the number of levels in the Credit Matrix is less than the potential levels in the AQF. In the future, it will also be necessary to examine how units at different levels of complexity might align to the AQF qualification descriptors or indeed how units are to be packaged to align with AQF qualifications.

This could be achieved by developing profiles for qualifications; for example, a level one certificate could have a profile comprised entirely of level one units, whereas a level two certificate could draw on a defined number of level one and two units and so on.

This process was assessed on a preliminary basis as part of the survey analysis and reporting, but would require far more detailed consideration than is possible in this report. It is suggested that the eight level model would be best suited to explore the clustering of units of learning (at different AQF levels) at levels 3 and 4 of the complexity grid. This is especially the case for units that related to Certificate III to Diploma. These units showed a great deal of variation in ratings across the five domains (e.g. Certificate III on the Eight-Level Model spread across six of the eight levels).

However, this finding does not overcome the fundamental problem that users of the Credit Matrix may find it confusing to work to frameworks even if they are aligned. While a number of participants in the consultation process expressed support for the development of a more consistent and integrated set of descriptors to underpin
the AQF, they also queried the extent to which a credit rating process would add value, if in fact the AQF was based on a new and more robust set of descriptors.

In that regard, it is both encouraging and significant that respondents across the span of units and modules recognised the importance of each of the domains, demonstrating in our view that it is possible to develop descriptors which encompass learning outcomes at different levels and in different sectors. We believe that this is an important finding which the VQA should, through the appropriate representatives, pursue in national forums, including the Australian Qualifications Framework and Advisory Board. We noticed a growing interest in this aspect of the work of the development of the Credit Matrix over the course of the project in Victoria and in other States.

The Authority might consider a two stream approach to the further development of the Credit Matrix, further developing and testing the model in Victoria and advising AQFAB and other jurisdictions of the outcomes of the developmental work to date to assess the level of interest in collaborative development of the model and to strengthen the AQF.
6 Conclusion and Recommendations

We believe that the key elements of the Credit Matrix model have now been developed and, in the case of the complexity element, empirically tested to the point where the VQA can confidently test the elements, including the options for the number of levels, the nature of the descriptors and the language of the descriptors with a broad range of potential users over a longer period of time than has been possible in this phase of the project. The draft definitions and guidelines can also be tested through this process.

Accordingly, we recommend that the VQA:

1. Note the findings contained in this report;

2. Endorse the approach to the determination of complexity and volume outlined in the report as the basis of the Credit Matrix Model;

3. Agree to full testing of the Model with a broad range of stakeholders through further consultation and modelling projects, specifically:
   a. options for the final number of levels;
   b. the nature of the descriptors;
   c. how the descriptors are best applied to determine the level of complexity;
   d. the draft definitions and guidelines; and

4. Convey the outcomes of this phase of the project, including the survey report and outcomes to the Australian Qualifications Framework Advisory Board and to other jurisdictions.

In conclusion, we would like to thank the many participants in the survey, panelling and consultation process for their valuable input and advice, officers of the VQA, and in particular the members of the VQA Stakeholder Reference Group and the VQA Credit Matrix Board Working Party.
Bibliography

Peter Noonan Consulting 2003, Credit Matrix Initial Design Report to Victorian Qualifications Authority VQA Melbourne


Victorian Qualifications Authority 2003 The Credit Matrix building bridges between qualifications VQA Melbourne

Young, Michael, 2001, The role of national qualifications systems in promoting lifelong learning, background paper to the OECD country representatives meeting, March, Paris.
## Appendix One: Complexity levels

### Complexity grid – 6 levels

<table>
<thead>
<tr>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 6</strong></td>
<td>Individual or group activities are self-directed and are undertaken within few parameters, performed with minimal guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, with few established parameters</td>
<td></td>
<td>New knowledge, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review.</td>
</tr>
<tr>
<td><strong>Level 5</strong></td>
<td>The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.</td>
<td>Activities are undertaken with full accountability for own processes and outputs, and full accountability for processes and outputs of others, within broad parameters.</td>
<td>Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.</td>
<td>Strategic, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning.</td>
</tr>
<tr>
<td><strong>Level 4</strong></td>
<td>The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.</td>
<td>Individual or group activities are undertaken within broad parameters performed with minimal guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.</td>
<td>New guidelines and processes are identified and developed to predict and/or address significant, complex or emergent problems.</td>
</tr>
<tr>
<td>Level 3</td>
<td>Application</td>
<td>Autonomy</td>
<td>Accountability</td>
<td>Problem solving</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>The skills and knowledge to be acquired are to be applied and contextualised in changing contexts, involving defined but unpredictable variables.</td>
<td>Individual or group activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs, within defined parameters</td>
<td>New guidelines are developed individually or in collaboration with others, to address non-routine problems.</td>
</tr>
<tr>
<td>Level 2</td>
<td>The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.</td>
<td>Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.</td>
<td>Established guidelines are interpreted and applied with variations to processes, to address routine problems.</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>The skills and knowledge to be acquired are to be applied in stable contexts involving defined and predictable variables.</td>
<td>Individual or group activities are undertaken within clearly defined parameters performed with minimal discretion under close guidance.</td>
<td>Activities are undertaken with some accountability for own processes and outputs, within defined parameters.</td>
<td>Established guidelines and processes and past precedents are used to address routine problems.</td>
</tr>
</tbody>
</table>
### Level descriptors – 6 levels

<table>
<thead>
<tr>
<th>Level</th>
<th>Learning outcome</th>
</tr>
</thead>
</table>
| 6     | - The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.  
|       | - Individual or group activities are self-directed and are undertaken within few parameters, performed with minimal guidance.  
|       | - Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, with few established parameters  
|       | - Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.  
|       | - Knowledge is new, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review.  |
| 5     | - The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.  
|       | - Individual or group activities are undertaken within broad parameters performed with minimal guidance.  
|       | - Activities are undertaken with full accountability for own processes and outputs, and full accountability for processes and outputs of others, within broad parameters.  
|       | - Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.  
|       | - Knowledge is strategic, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning.  |
| 4     | - The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.  
|       | - Individual or group activities are undertaken within broad parameters, performed with minimal guidance.  
|       | - Activities are undertaken with full accountability for own processes and outputs, and full accountability for processes and outputs of others, within broad parameters.  
|       | - New guidelines and processes are identified and developed to predict and/or address significant, complex or emergent problems.  
|       | - Knowledge is theoretical and abstract.  |
| 3     | - The skills and knowledge to be acquired are to be applied and contextualised in changing contexts, involving defined but unpredictable variables.  
|       | - Individual or group activities are undertaken within defined parameters, performed with a significant degree of discretion under general guidance.  
|       | - Activities are undertaken with full accountability for own processes and outputs, within defined parameters  
|       | - New guidelines are developed individually or in collaboration with others, to address non-routine problems.  
<p>|       | - Knowledge is concrete, with some elements of abstraction or theory.  |</p>
<table>
<thead>
<tr>
<th>Level</th>
<th>Learning outcome</th>
</tr>
</thead>
</table>
| 2     | o The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.  
|       | o Individual or group activities are undertaken within defined parameters, performed with some discretion under frequent guidance.  
|       | o Activities are undertaken with some accountability for own processes and outputs, within defined parameters.  
|       | o Established guidelines are interpreted and applied with variations to processes, to address routine problems.  
|       | o Knowledge is concrete in reference, with some comprehension of relationships between knowledge elements. |
| 1     | o The skills and knowledge to be acquired are to be applied in stable contexts involving defined and predictable variables.  
|       | o Individual or group activities are undertaken within clearly defined parameters, performed with minimal discretion under close guidance.  
|       | o Activities are undertaken with some accountability for own processes and outputs, within clearly defined parameters.  
|       | o Established guidelines and processes and past precedents are used to address routine problems.  
|       | o Knowledge is concrete or factual in reference, and basic in comprehension. |
### Complexity grid – 8 levels

<table>
<thead>
<tr>
<th>Level 8</th>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individual or group activities are self-directed and are undertaken within few parameters, performed with minimal guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, with few established parameters.</td>
<td></td>
<td>New knowledge, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review.</td>
<td></td>
</tr>
</tbody>
</table>

| Level 7 | The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts. | Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, within broad parameters. | Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice. | Strategic, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning. |

<p>| Level 6 | Individual or group activities are undertaken within broad parameters performed with minimal guidance. | New guidelines and processes are identified and developed to predict and/or address significant, complex or emergent problems. | Metacognitive, in that learners must recognize limitations of current knowledge and have familiarity with sources of new information and integration of concepts across a variety of areas. | |</p>
<table>
<thead>
<tr>
<th>Level 5</th>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.</td>
<td>Individual or group activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.</td>
<td>New guidelines are developed individually or in collaboration with others, to address non-routine problems.</td>
<td>Theoretical and abstract, with significant underpinning theory.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 4</th>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The skills and knowledge to be acquired are to be applied and contextualised in changing contexts, involving defined but unpredictable variables</td>
<td>Individual or group activities are undertaken within defined parameters</td>
<td>Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.</td>
<td>New guidelines are developed individually or in collaboration with others, to address non-routine problems.</td>
<td>Theoretical and abstract, with significant depth in a number of areas.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 3</th>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Concrete, with some elements of abstraction or theory.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 2</th>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.</td>
<td>Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.</td>
<td>Established guidelines are interpreted and applied with variations to processes to address routine problems.</td>
<td>Established guidelines and processes and past precedents are used to address routine problems.</td>
<td>Concrete in reference, with some comprehension of relationships between knowledge elements.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The skills and knowledge to be acquired are to be applied in stable contexts involving defined and predictable variables.</td>
<td>Individual or group activities are undertaken within clearly defined parameters performed with minimal discretion under close guidance.</td>
<td>Activities are undertaken with some accountability for own processes and outputs, within defined parameters.</td>
<td>Established guidelines and processes and past precedents are used to address routine problems.</td>
<td>Concrete or factual in reference, and basic in comprehension.</td>
</tr>
</tbody>
</table>
## Level descriptors – 8

<table>
<thead>
<tr>
<th>Level</th>
<th>Learning outcome</th>
</tr>
</thead>
</table>
| 8     | o The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.  
       | o Individual or group activities are self-directed and are undertaken within few parameters, performed with minimal guidance.  
       | o Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, with few established parameters  
       | o Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.  
       | o New knowledge, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review. |
| 7     | o The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.  
       | o Individual or group activities are undertaken within broad parameters performed with minimal guidance.  
       | o Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, within broad parameters  
       | o Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.  
       | o Strategic knowledge, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning. |
| 6     | o The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.  
       | o Individual or group activities are undertaken within broad parameters performed with minimal guidance.  
       | o Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.  
       | o New guidelines and processes are identified and developed to predict and/or address significant, complex or emergent problems.  
       | o Metacognitive knowledge, in that learners must recognize limitations of current knowledge and have familiarity with sources of new information and integration of concepts across a variety of areas. |
| 5     | o The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.  
       | o Individual or group activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance.  
       | o Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.  
       | o New guidelines are developed individually or in collaboration with others, to address non-routine problems.  
<pre><code>   | o Knowledge that is theoretical and abstract, with significant underpinning theory. |
</code></pre>
<table>
<thead>
<tr>
<th>Level</th>
<th>Learning outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>○ The skills and knowledge to be acquired are to be applied and contextualised in changing contexts, involving defined but unpredictable variables.  &lt;br&gt; ○ Individual or group activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance.  &lt;br&gt; ○ Activities are undertaken with full accountability for own processes and outputs, within defined parameters  &lt;br&gt; ○ New guidelines are developed individually or in collaboration with others, to address non-routine problems.  &lt;br&gt; ○ Knowledge that is theoretical and abstract, with significant depth in a number of areas.</td>
</tr>
<tr>
<td>3</td>
<td>○ The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.  &lt;br&gt; ○ Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.  &lt;br&gt; ○ Activities are undertaken with full accountability for own processes and outputs, within defined parameters  &lt;br&gt; ○ Established guidelines are interpreted and applied with variations to processes, to address routine problems.  &lt;br&gt; ○ Knowledge that is theoretical, with some elements of abstraction or theory.</td>
</tr>
<tr>
<td>2</td>
<td>○ The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.  &lt;br&gt; ○ Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.  &lt;br&gt; ○ Activities are undertaken with some accountability for own processes and outputs, within defined parameters.  &lt;br&gt; ○ Established guidelines are interpreted and applied with variations to processes, to address routine problems.  &lt;br&gt; ○ Knowledge that is concrete in reference, with some comprehension of relationships between knowledge elements.</td>
</tr>
<tr>
<td>1</td>
<td>○ The skills and knowledge to be acquired are to be applied in stable contexts involving defined and predictable variables.  &lt;br&gt; ○ Individual or group activities are undertaken within clearly defined parameters performed with minimal discretion under close guidance.  &lt;br&gt; ○ Activities are undertaken with some accountability for own processes and outputs, within clearly defined parameters.  &lt;br&gt; ○ Established guidelines and processes and past precedents are used to address routine problems.  &lt;br&gt; ○ Knowledge that is concrete or factual in reference, and basic in comprehension.</td>
</tr>
</tbody>
</table>
### Gist Statements Six levels

The learning at this level will reflect the ability to:

<table>
<thead>
<tr>
<th>Level</th>
<th>Learning outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Apply, integrate and contextualise skills and knowledge to influence future contexts. Activities are self-directed and are undertaken within few parameters, performed with minimal guidance; with full accountability for own and others processes and outputs, with few established parameters. The knowledge learnt is new, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review. Problems are tested and formulated using conceptual frameworks which make a significant contribution to theory, method or practice.</td>
</tr>
<tr>
<td>5</td>
<td>Apply, integrate and contextualise skills and knowledge to influence future contexts. Activities are undertaken within broad parameters performed with minimal guidance; with full accountability for own and others processes and outputs, and some accountability for others, within defined parameters. The knowledge learnt is strategic, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning. Problems are tested and formulated using conceptual frameworks which make a significant contribution to theory, method or practice.</td>
</tr>
<tr>
<td>4</td>
<td>Apply, integrate and contextualise skills and knowledge in complex and changing contexts, involving broadly defined and unpredictable variables. Activities are undertaken with full accountability for own and others, within broad parameters; with minimal guidance. The knowledge learnt is theoretical and abstract. Significant, complex or emergent problems are predicted and/or addressed using new identified and developed guidelines and processes.</td>
</tr>
<tr>
<td>3</td>
<td>Apply and contextualise skills and knowledge in changing contexts, involving defined but unpredictable variables. Activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance; with full accountability. The knowledge learnt is concrete, with some elements of abstraction or theory. Non-routine problems are addressed using new guidelines developed individually or in collaboration with others.</td>
</tr>
<tr>
<td>2</td>
<td>Apply skills and knowledge in changing contexts involving defined and predictable contexts. Activities are undertaken within defined parameters performed with some discretion and under frequent guidance; with some accountability within defined parameters. The knowledge learnt is concrete in reference, with some comprehension of relationships. Routine problems are addressed using established guidelines that are interpreted and applied with variations to processes.</td>
</tr>
<tr>
<td>1</td>
<td>Apply skills and knowledge in stable contexts involving defined and predictable variables. Activities are undertaken within clearly defined parameters with minimal discretion and under close guidance; with some accountability within defined parameters. The knowledge learnt is concrete or factual in reference, and basic in comprehension. Routine problems are addressed using established guidelines and processes and past precedents.</td>
</tr>
</tbody>
</table>
### Gist Statements Eight Levels

The learning at this level will reflect the ability to:

<table>
<thead>
<tr>
<th>Level</th>
<th>Learning outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Apply, integrate and contextualise skills and knowledge to influence future contexts. Activities are self-directed and are undertaken within few parameters, performed with minimal guidance; with full accountability for own and others processes and outputs, with few established parameters. The knowledge learnt is new, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review. Problems are tested and formulated using conceptual frameworks which make a significant contribution to theory, method or practice.</td>
</tr>
<tr>
<td>7</td>
<td>Apply, integrate and contextualise skills and knowledge to influence future contexts. Activities are undertaken within broad parameters performed with minimal guidance; with full accountability for own processes and outputs, and some accountability for others, within defined parameters. The knowledge learnt is strategic, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning. Problems are tested and formulated using conceptual frameworks which make a significant contribution to theory, method or practice.</td>
</tr>
<tr>
<td>6</td>
<td>Apply, integrate and contextualise skills and knowledge in complex and changing contexts, involving broadly defined and unpredictable variables. Activities are undertaken within broad parameters performed with minimal guidance; with full accountability for own processes and outputs, and some accountability for others, within defined parameters. The knowledge learnt is metacognitive, in that learners must recognize limitations of current knowledge and have familiarity with sources of new information and integration of concepts across a variety of areas. Significant, complex or emergent problems are predicted and/or addressed using new identified and developed guidelines and processes.</td>
</tr>
<tr>
<td>5</td>
<td>Apply, integrate and contextualise skills and knowledge in complex and changing contexts, involving broadly defined and unpredictable variables. Activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance; with full accountability for own processes and outputs, and some accountability for others, within defined parameters. The knowledge learnt is theoretical and abstract, with significant underpinning theory. Non-routine problems are addressed using new guidelines developed individually or in collaboration with others.</td>
</tr>
<tr>
<td>4</td>
<td>Apply and contextualise skills and knowledge in changing contexts, involving defined but unpredictable variables. Activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance; with full accountability for own processes and outputs, within defined parameters. The knowledge learnt is theoretical and abstract, with significant depth in a number of areas. Non-routine problems are addressed using new guidelines developed individually or in collaboration with others.</td>
</tr>
<tr>
<td>3</td>
<td>Apply skills and knowledge in changing contexts involving defined and predictable contexts. Activities are undertaken within defined parameters performed with some discretion under frequent guidance; with full accountability for own processes and outputs, within defined parameters. The knowledge learnt is concrete, with some elements of abstraction or theory. Routine problems are addressed using established guidelines that are interpreted and applied with variations to processes</td>
</tr>
<tr>
<td>Level</td>
<td>Learning outcome</td>
</tr>
<tr>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td>2</td>
<td>Apply skills and knowledge in changing contexts involving defined and predictable contexts. Activities are undertaken within defined parameters performed with some discretion and under frequent guidance; with some accountability within defined parameters. The knowledge learnt is concrete in reference, with some comprehension of relationships. Routine problems are addressed using established guidelines that are interpreted and applied with variations to processes.</td>
</tr>
<tr>
<td>1</td>
<td>Apply skills and knowledge in stable contexts involving defined and predictable variables. Activities are undertaken within clearly defined parameters with minimal discretion and under close guidance; with some accountability within defined parameters. The knowledge learnt is concrete or factual in reference, and basic in comprehension. Routine problems are addressed using established guidelines and processes and past precedents.</td>
</tr>
</tbody>
</table>
Appendix 2: Victorian Qualifications Authority: Credit Matrix: Principles, Definitions and Guidelines for Applying the Credit Matrix, Draft May 2004
VICTORIAN QUALIFICATIONS AUTHORITY

CREDIT MATRIX: PRINCIPLES, DEFINITIONS AND GUIDELINES FOR APPLYING THE CREDIT MATRIX

Draft May 2004
CONTENTS

Introduction 3
What is the Credit Matrix? 4
What is the purpose of the Credit Matrix? 4
Operational definitions 5
Key Components 6
Applying the Credit Matrix 13
Bibliography 18

Confidential Draft
Introduction

The Victoria Qualifications Authority (VQA) was established under the Victoria Qualifications Authority Act, 2000. It is responsible for recognizing post compulsory qualifications, with the exception of higher education qualifications.

The AQF provides an agreed framework for designing, developing and issuing recognised qualifications within Australia and for supporting linkages between these qualifications. Whilst the AQF describes qualification types offered in the three educational sectors (schools, VET and Higher Education), it does not provide standardised ranking or equivalencies between different qualifications in different sectors.

The Credit Matrix does not replace this framework. The Credit Matrix:

- Does not aim to redefine the AQF qualifications but aims to provide additional information for organisations
- Does not impose regulations or requirements for credit transfer or recognition of prior learning on accrediting authorities and/or organisations
- Does not impose requirements on the packaging arrangements for Training Packages qualifications.

The Credit Matrix provides a common measure to compare and to put value on learning in different kinds of qualifications. The Credit Matrix describes domains of learning outcomes that increase in complexity and demand through the levels. It aims to serve both horizontal and vertical articulation and to provide a common basis for the development and recognition of qualifications.

The Credit Matrix origins are linked to the VQA’s three legislative objectives:

- Develop and monitor standards for education and training normally undertaken in, or in the years after, Year 10
- Ensure and support appropriate linkages between qualifications
- Make it easier for people to re-enter education and training and acquire qualification throughout their lives.

A key aspect of the VQA’s work has been to examine the ‘ways in which the qualifications system can be organised so that people can build effectively on what they already and can do, and progress smoothly from one qualification to another – no matter where they are starting from, and no matter what combination of knowledge skills they may already have, or wish to gain’ (VQA 2003, p. 9).

This draft introductory guide provides an overview of the background of the Credit Matrix. In addition, it outlines its main features and application principles. It describes how the Credit Matrix may be used and provides guidance for applying the model.
What is the Credit Matrix?

The Credit Matrix is a system in which learning outcomes can be arranged and compared in levels of increased complexity based on standard learning units. In essence it is about describing and comparing achievement.

The Credit Matrix model comprises the following components:

- **Domains**: which are abstract groupings of learning outcomes (such as ‘knowledge type’, or ‘accountability’) that can be ordered across levels on the basis of their increased complexity or difficulty.
- **Domain descriptors**: which define the increasing complexity of a unit/module/subject at any given level.

In simple terms, these are the nuts and bolts behind the model.

In addition, the features of the matrix that are used to assign and award varying levels of credit are listed below. The award of credit means formally recognising learning achievement in possibly different contexts, which can be broadly compared to in terms of:

- Level of demand/complexity (credit level) of the learning outcomes of a unit
- Relative volume (credit points) of learning outcomes

What is the purpose of the Credit Matrix?

The purpose of the Credit Matrix is to:

...provide a common way of describing and comparing learning achieved, which could be applied across the different qualifications available in Victoria.

This would:

- make the whole system of qualifications easier to understand
- allow for the design of more flexible qualifications that could include new and different kinds and combinations of knowledge and skills
- provide a simple and uniform way of describing qualifications and recording achievement in them
- make it easier to keep track of learning achieved and to plan ahead – for individuals, providers and employers, as well as the system as a whole
- ensure learning already successfully achieved will not need to be repeated. (VQA, 2003, p.10).

While the principal purpose of the Credit Matrix is to provide a common way of describing and comparing learning outcomes between qualifications and units which will ultimately benefit individuals, it will also assist course and program developers by providing a common and transparent basis for course and program development.
Operational definitions

The following key operational definitions are defined below.

<table>
<thead>
<tr>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the purposes of the Credit Matrix, a unit of learning is a defined component of learning that is frequently described across the educational sectors as:</td>
</tr>
<tr>
<td>• Unit of competency</td>
</tr>
<tr>
<td>• Subject</td>
</tr>
<tr>
<td>• Module</td>
</tr>
<tr>
<td>• Unit.</td>
</tr>
<tr>
<td>It is the smallest part of a qualification that can be separately certified.</td>
</tr>
<tr>
<td>A unit of learning is documented in some form often as:</td>
</tr>
<tr>
<td>• Competency standards</td>
</tr>
<tr>
<td>• Curriculum outlines</td>
</tr>
<tr>
<td>• Module or subject outlines</td>
</tr>
<tr>
<td>• Study Guides.</td>
</tr>
<tr>
<td>For the purpose of the Credit Matrix, a unit is one that includes an assessment component that has been conducted under the requirements of the:</td>
</tr>
<tr>
<td>• VCAA</td>
</tr>
<tr>
<td>• AQTF</td>
</tr>
<tr>
<td>• Individual Universities</td>
</tr>
<tr>
<td>• Other quality assurance processes undertaken by other training organisations.</td>
</tr>
<tr>
<td>Authorities, institutions and training organisations develop quality assurance systems to ensure the quality of their teaching, learning and assessment. Quality assurance strategies could include:</td>
</tr>
<tr>
<td>• Defined qualifications and experience of teachers (including requirements for ongoing professional development and monitoring)</td>
</tr>
<tr>
<td>• Documented required learning to be achieved</td>
</tr>
<tr>
<td>• Documented and validated assessment tools and procedures to ensure the integrity of the assessments conducted</td>
</tr>
<tr>
<td>• Moderation processes to ensure validity and reliability of assessments across or within assessors</td>
</tr>
<tr>
<td>• Secure recording and reporting system.</td>
</tr>
<tr>
<td>The Credit Matrix only applies to units that meet these requirements. A unit should be identified by a unique title and code.</td>
</tr>
</tbody>
</table>

---

6 National Council – ELWa 2003a
## Key Components

### Credit

**Definition**
Credit is a quantified means of expressing learning outcomes. Credit is awarded in recognition of the verified achievement of designated learning outcomes at a specified level.

The award of credit means formally recognising learning outcome achievement in possibly different contexts, which can be broadly compared to in terms of:

- Level of demand/complexity (credit level) of the learning outcomes of a unit
- Relative volume (credit points) of learning outcomes.

### Credit points

Credit points provide a means of quantifying learning outcomes, achievable in notional average learning time\(^7\) (see Volume of learning).

### Credit level

Credit level is a means of quantifying achievement of learning outcomes at a given level of demand/complexity.

---

\(^7\) Adapted from SQA 2001
Volume of learning

*Definition (note that this is a interim definition)*

Volume of learning is the expected notional average number of hours required by the learner to achieve the specified learning outcomes. It is the average estimated learning time, which encompasses the entire learning process, regardless of the context.

Volume of learning contributes to the ‘credit’ of a unit.

*Principles*

Taught or contact time will vary, however average learning time will not. All learning relevant to the learning outcomes should be considered when average learning time is being estimated.

The volume of learning should be estimated on the learning that relates to the attributes of the unit, not to the individual learner. The estimation is based on the expected amount or workload to be undertaken. It is not necessarily related to time served.

In the VET sector the estimated volume of learning does not equate to nominal hours, which is related to estimated training and assessment time required by the trainer. Nominal hours are used for the purposes of course planning and/or the provision of funding.

In the secondary and higher education sectors a system of describing credit points and workload already exists. The credit point system is based on the expected workload or time commitment for an average student, which is approximately 1200 hours of contact (and non-contact time) per year. The definition of volume of learning does not conflict with this understanding.

Volume of learning is expressed as CREDIT POINTS. One Credit Point equates to 10 hours of learning. A minimum of one credit point can be assigned per unit.
**Credit Level**

*Definition (note that although this section is included the number of levels has as yet not been determined)*

Levels are the value placed on the relative level of demand/complexity of the learning documented in the unit.

Levels contribute to ‘credit’ based on the ‘complexity of learning’ associated with a unit.

Levels should be seen as ‘markers’ in a continuum of increasing capability. The purpose is to provide broad indications of learning challenge at points along a continuum.

*Principles*

A credit level relates to units rather than to whole qualifications.

Only one credit level can be attributed to any given unit.

Levels are not synonymous with qualifications titles or implied qualification levels.

Levels are not synonymous with years of full-time study.

Levels are not necessarily synonymous with implied levels of units (within AQF qualifications).

The positioning of a unit at a given level should be taken as a broad indication of the comparability of the general level of learning outcome. There is no implied relationship to subject specific content.

It is not necessary to identify or to observe all possible indicators in order to define the continuum and/or determine the level of complexity (i.e. the level descriptors).

The top and bottom levels are open ended.
### Credit level descriptors

**Definition**

Credit level descriptors are statements that describe the characteristics of learning demand/complexity that the learner will encounter at each credit level.

Descriptors are a guide to unit design, to allow units to be aligned and provide information for assessment processes and contexts.

They are derived from the detailed domain descriptors.

The level descriptors are designed to promote ‘vertical’ and ‘horizontal’ articulation between units/subjects/modules. For the purposes of these guidelines:

- **Vertical articulation** is linkages between qualifications or components of qualifications that involve a progression of learning through sequential levels. This can allow progression routes for individuals and, typically, is in the form of course entry based upon the recognition of foundation learning.

- **Horizontal articulation** is linkages between qualifications or components of qualifications at the same levels. Typically, it allows for credit transfer.

Both vertical and horizontal linkages can assist in course design.

**Principles**

Level descriptors describe the varying levels of complexity that underpin the unit of learning.

They are generic in nature and therefore, can be applied to all learning areas within and across educational and industrial settings.

Level descriptors should be seen as a developmental continuum in which each successive level implies a higher level of complexity.

Level descriptors provide guidance (rather than prescribe) as to the kind of demand/complexity of the learning.
<table>
<thead>
<tr>
<th>LEVEL DESCRIPTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>
| - The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.  
- Individual or group activities are self-directed and are undertaken within few parameters, performed with minimal guidance.  
- Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, with few established parameters.  
- Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.  
- New knowledge in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review. |
| **7** |
| - The skills and knowledge to be acquired are to be integrated, contextualised and applied to influence future contexts.  
- Individual or group activities are undertaken within broad parameters performed with minimal guidance.  
- Activities are undertaken with full accountability for own processes and outputs and full accountability for processes and outputs of others, within broad parameters.  
- Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.  
- Strategic knowledge, in that learners must demonstrate a critical awareness of current problems or insights generally agreed to be at the forefront of a field of learning. |
| **6** |
| - The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.  
- Individual or group activities are undertaken within broad parameters performed with minimal guidance.  
- Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.  
- New guidelines and processes are identified and developed to predict and/or address significant, complex or emergent problems.  
- Metacognitive knowledge, in that learners must recognize limitations of current knowledge and have familiarity with sources of new information and integration of concepts across a variety of areas. |
| **5** |
| - The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.  
- Individual or group activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance.  
- Activities are undertaken with full accountability for own processes and outputs, within defined parameters.  
- New guidelines are developed individually or in collaboration with others, to address non-routine problems.  
- Knowledge that is theoretical and abstract, with significant underpinning theory. |
| **4** |
| - The skills and knowledge to be acquired are to be applied and contextualised in changing contexts, involving defined but unpredictable variables.  
- Individual or group activities are undertaken within defined parameters performed with a significant degree of discretion under general guidance.  
- Activities are undertaken with full accountability for own processes and outputs, within defined parameters.  
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| **3** |
| - The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.  
- Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.  
- Activities are undertaken with full accountability for own processes and outputs, within defined parameters.  
- Established guidelines are interpreted and applied with variations to processes, to address routine problems.  
- Knowledge that is concrete, with some elements of abstraction or theory. |
| **2** |
| - The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.  
- Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.  
- Activities are undertaken with some accountability for own processes and outputs, within defined parameters.  
- Established guidelines are interpreted and applied with variations to processes, to address routine problems.  
- Knowledge that is concrete in reference, with some comprehension of relationships between knowledge elements. |
| **1** |
| - The skills and knowledge to be acquired are to be applied in stable contexts involving defined and predictable variables.  
- Individual or group activities are undertaken within clearly defined parameters performed with minimal discretion under close guidance.  
- Activities are undertaken with some accountability for own processes and outputs, within clearly defined parameters.  
- Established guidelines and processes and past precedents are used to address routine problems.  
- Knowledge that is concrete or factual in reference, and basic in comprehension. |
Domains

Definition
Domains are abstract groupings of learning outcomes (such as ‘knowledge type’, or ‘accountability’) that can be ordered across levels on the basis of their increased complexity or difficulty.

Principles
These generic domains and the associated domain descriptors are designed as a guide, against which units are evaluated. They are subject content and learning context free.

The characteristics describe the increasing levels of complexity that underpin a unit. Their purpose is to describe – at any one level – the complexity of learning that is required and has been successfully demonstrated.

Knowledge type refers to the kind of knowledge involved.

Application refers to the context in which the skills and knowledge are to be applied

Autonomy refers to the amount of guidance and the clarity of parameters in which individual or group activities are to be performed.

Accountability refers to the degree of accountability for the processes and outputs of oneself and others.

Problem solving refers to the type of problems to be solved and the strategies to be employed.

The domains have no intrinsic value but are used to:
- Define the continuum of increasingly complexity
- Inform the definition of the level descriptors
- Assist with the analysis and judgement of the unit.

The evaluation of the complexity of the learning outcomes within the unit may vary across domains, however the unit is to be ascribed an overall CREDIT LEVEL (see Credit Level).

---

* Adapted from the assumptions that underpin the development of learning scales (also referred to as profiles, standard referenced frameworks and progress maps) proposed by Griffin and other (1993, 2001).
## DOMAIN DESCRIPTORS

<table>
<thead>
<tr>
<th>Level</th>
<th>Application</th>
<th>Autonomy</th>
<th>Accountability</th>
<th>Problem solving</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>The skills and knowledge to be acquired are to be integrated, contextualised and applied to future contexts.</td>
<td>Individual or group activities are self-directed and undertaken within few parameters, performed with minimal guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs of others, with few established parameters.</td>
<td>Conceptual frameworks are used to formulate and test problems that make a significant contribution to theory, method or practice.</td>
<td>New knowledge, in that the learners must create and interpret new knowledge through original research, or other advanced scholarship of a quality to satisfy peer review.</td>
</tr>
<tr>
<td>7</td>
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<td>Individual or group activities are undertaken within broad parameters performed with minimal guidance.</td>
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<td>6</td>
<td>The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.</td>
<td>Individual or group activities are undertaken within broad parameters performed with minimal guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.</td>
<td>New guidelines and frameworks are developed and used to predict and/or address significant, complex or emergent problems.</td>
<td>Metacognitive, in that learners must recognize limitations of current knowledge and have familiarity with sources of new information and integration of concepts across a variety of areas.</td>
</tr>
<tr>
<td>5</td>
<td>The skills and knowledge to be acquired are to be integrated, contextualised and applied in complex and changing contexts, involving broadly defined and unpredictable variables.</td>
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<td>Activities are undertaken with full accountability for own processes and outputs, and some accountability for processes and outputs of others, within defined parameters.</td>
<td>New guidelines are developed individually or in collaboration with others, to address non-routine problems.</td>
<td>Theoretical and abstract, with significant underpinning theory.</td>
</tr>
<tr>
<td>4</td>
<td>The skills and knowledge to be acquired are to be applied and contextualised in changing contexts, involving defined but unpredictable variables.</td>
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<td>New guidelines are developed individually or in collaboration with others, to address non-routine problems.</td>
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<td>3</td>
<td>The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.</td>
<td>Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.</td>
<td>Activities are undertaken with full accountability for own processes and outputs, within defined parameters.</td>
<td>Established guidelines are interpreted and applied with variations to processes, to address routine problems.</td>
<td>Concrete, with some elements of abstraction or theory.</td>
</tr>
<tr>
<td>2</td>
<td>The skills and knowledge to be acquired are to be applied in changing contexts involving defined and predictable variables.</td>
<td>Individual or group activities are undertaken within defined parameters performed with some discretion under frequent guidance.</td>
<td>Activities are undertaken with some accountability for own processes and outputs, within defined parameters.</td>
<td>Established guidelines are interpreted and applied with variations to processes, to address routine problems.</td>
<td>Concrete in reference, with some comprehension of relationships between knowledge elements.</td>
</tr>
<tr>
<td>1</td>
<td>The skills and knowledge to be acquired are to be applied in stable contexts involving defined and predictable variables.</td>
<td>Individual or group activities are undertaken within clearly defined parameters performed with minimal discretion under close guidance.</td>
<td>Activities are undertaken with some accountability for own processes and outputs, within defined parameters.</td>
<td>Established guidelines and processes and past precedents are used to address routine problems.</td>
<td>Concrete or factual in reference, and basic in comprehension.</td>
</tr>
</tbody>
</table>
Applying the Credit Matrix

The Credit Matrix model aims to ensure consistency in the process of credit rating. The following pages outline the responsibilities and guidelines to be used for the application of the Credit Matrix.

Assigning credit points and credit levels (accredited only)

<table>
<thead>
<tr>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing accredited units</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agency responsible for accrediting the unit/qualification. The agency shall determine the process for assigning credit points and credit levels.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assigning Credit Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>To assign a credit level:</td>
</tr>
<tr>
<td>1. Gather the information pertaining to the unit, such as the unit of competency (standard), the module outline or the Study Design.</td>
</tr>
<tr>
<td>2. Review the documentation including the amount, type and nature of content to be learnt as well as assessment requirements.</td>
</tr>
<tr>
<td>3. Evaluate this information against the level descriptors; which describe in broad terms the level of difficulty/complexity of a unit (see Level descriptors for further advice).</td>
</tr>
<tr>
<td>4. Assign the level of the descriptor that best suits the unit. In attributing a level to a unit it is not necessary to demonstrate that all characteristics of the credit level descriptor are present. The relevant aspects of the descriptor are a matter for professional judgement.</td>
</tr>
<tr>
<td>5. Arabic numerals are to be used to assign (as well as record/report credit levels).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assigning volume of learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>To assign a credit points:</td>
</tr>
<tr>
<td>1. Gather all information pertaining to the unit, including content to be covered, delivery strategies to be used, expected time allocation for contact time.</td>
</tr>
<tr>
<td>2. Nominal hours may be a starting point for those in VET however, remember that this is only an indication of trainer time allocation for delivery and assessment.</td>
</tr>
<tr>
<td>3. Evaluate the amount of workload being cognisant of the following.</td>
</tr>
</tbody>
</table>

The estimation of volume learning time should take into consideration all learning and assessment activities required for the achievement of the learning including, e.g.

- formal learning, including classes, training sessions, coaching, mentoring, seminars, lectures and tutorials
- doing practical work in laboratories, workshops or other locations
- information retrieval, e.g in libraries, web
- private study, revision and self-directed time
- work-based activities which lead to assessment
• practice – gaining, applying and refining skills
• undertaking all forms of assessment⁹.

It is expected that the mix of the above will vary with variations in delivery mode and delivery strategies.

4. Estimate the total number of hours for the volume of learning. This needs to be only a broad estimate and people allocating these hours will need to use their professional judgement.

5. For purely pragmatic reasons (ease of recording and reporting), one credit point equates to 10 hours of average estimated learning time. This is the CREDIT POINT that is assigned to the unit.

---

### Assigning credit points and credit levels (non-accredited only)

<table>
<thead>
<tr>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-accredited units or informal learning, that has an assessable component, such as:</td>
</tr>
<tr>
<td>o Vendor programs</td>
</tr>
<tr>
<td>o Workplace learning</td>
</tr>
<tr>
<td>o Community programs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>The responsibility for credit rating of non-accredited programs is the accrediting agency that has authority over the unit that is to be aligned with the informal learning. Organisations seeking credit rating for their programs are required to follow the process for assigning credit and then approach the authority for confirmation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>The process for assigning credit points and credit levels shall be the same as for accredited units.</td>
</tr>
</tbody>
</table>

---

⁹ Adapted from SQA 2001, p. 23
### Developing new accredited units and qualifications

<table>
<thead>
<tr>
<th><strong>Scope</strong></th>
<th>New accredited units under the authority of the VQA.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Responsibility</strong></td>
<td>The agency responsible for accrediting the unit/qualification</td>
</tr>
</tbody>
</table>

The principles and application guidelines for assigning credit level and credit points previously mentioned apply to both the following applications.

#### Application (VET and ACE)
New qualifications, not covered by existing Training Packages and or course curriculum, can be developed and accredited under the VQA legislation.

1. In the development of courses, the course developer will for each unit:
   - Estimate the volume of learning
   - Determine the level of complexity.

2. Packaging information within the course documentation should clearly outline the number of units and their level of complexity that are required for each qualification. In addition, flexible packaging arrangement can assist in the determination block credit and specific credit.

3. Careful consideration should be given to determining the volume of learning as opposed to nominal hours which is related to course planning and/or the provision of funding.


#### Application (VCE)
The VCAA is responsible for the development of the VCE units.

1. In the development of courses, the course developer shall for each unit:
   - Estimate the volume of learning
   - Determine the level of complexity.
## Determining credit transfer

### Scope
Credit transfer arrangements allow status or credit to be given for satisfactory completion of equivalent subjects at another education or training institution such as some other VET provider, and secondary school, and is essentially an administrative process (AVETMIS Standard 2001).

### Responsibility
The agency that is responsible for the unit/qualification for which credit transfer is being sought.

### Application
1. Credit transfer is a determination of the equivalence of learning and is not a determination of competence.

2. Evaluators should review the information provided against the requirements of a unit (i.e. the specifications of a unit of competency). Unit documentation should include a review of the subject content as well as the credit level and the credit points.

   The information provided should indicate that the complexity of the learning achieved was broadly equivalent to the credit level assigned. The credit point of a unit can also assist in the determination of the amount of learning that was required by the learner. The evidence provided should substantiate these assumptions.

3. Determine equivalence. As with any determination of equivalence, evaluators will need to use their professional judgment.

4. Assign credit transfer.
Determining recognition of prior learning

Scope
Recognition of prior learning is the ‘determination on an individual basis of the competencies achieved by a person through previous formal or informal training, work experience and/or life experience’ (NTB 1992).

Responsibility
The agency that is responsible for the unit/qualification for which RPL is being sought.

Application
As this is an assessment of an individual’s prior learning and current competence it involves an evaluation of evidence provided by the applicant. The judgement is made on the evidence of the applicant’s skills and knowledge that they have previously learnt and that they are currently using.

1. Assessors should review evidence provided against the requirements of a unit (i.e. the specifications of a unit of competency). As is the case with any assessment the evidence can be varied and may include the ‘combination of formal or informal training and education, work experience or general life experience’ (ANTA 2001).

2. Assessors are also be required to review the evidence against the following additional information assigned to a unit:
   - Credit level
   - Credit points.

   The evidence provided should indicate that the complexity of the learning achieved was equivalent to the credit level assigned. The credit point of a unit can also assist in the determination of the amount of learning that would be required by the learner. The evidence provided should substantiate these assumptions.

3. Determine competence. As with any determination of competence, assessors will need to use their professional judgment.
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