VQA Qualifications Framework for Design
Issues Paper

1. Background to the project

The development of a qualifications framework for design is being funded through the Victorian Qualifications Authority (VQA) as part of the Victorian Government’s commitment to “Developing Victoria’s Design Capabilities”. Design has been identified as one of five strategic capabilities essential to Victoria’s emergence as an Innovation Economy.

The government has a vision of a creative, innovative and enterprising state, and aims to position Victoria as a leading international centre of design. With design highlighted as a strategic capability, it is the government’s intention to foster a design culture within Victoria. Initiatives are underway to:

- improve linkages across design, industry, education and research
- enhance the quantity and quality of design education; and
- promote the value of design to industry and the community.

Design is viewed as being of fundamental importance to an innovation economy. It is inherent to the form, functionality and interface of products and services. It is a vital step in transforming ideas into practical and commercial realities, and plays a critical role in shaping the underlying competitiveness across a range of industry sectors.

This project aims to develop a comprehensive framework offering a range of design-related qualifications, pathways and job related outcomes. The framework will provide an overarching context for design-related education and training programs across diverse industry sectors in the Vocational Education and Training (VET) sector in Victoria. The framework will draw on existing design related units and competencies across post-compulsory education and training, including senior secondary that can be selected and structured in accordance with qualification requirements from the Australian Qualifications Framework (AQF) from levels I to VI. The framework will enable a diverse set of combinations of competencies, permitting learners to select or to customise a design-related qualification or pathway specific to their interests and needs. It is envisaged that some new competencies and qualifications specific to the framework itself may also need to be developed.

URCOT’s approach to this project is based on the recognition that that a significant amount of knowledge relating to design education and the development of design capabilities in vocational settings already exists, nationally and internationally. This knowledge is situated in a body of literature, in comparative practice within Australia and worldwide, in current research and development activities, particularly those underway in Victoria and specifically in the practice and experiences of those Victorians involved in design education and the application of design in vocational
settings. Our approach to this research and development project aims to draw on existing knowledge that is derived from different sources, to bring it together in a meaningful way and to interpret it in terms of the outcomes the VQA requires of this project. Our approach is consultative and aims to involve those who have a stake in the outcomes of the project in the design and development of the framework in order that the meaning, intention and implementation of the framework are shared with and relevant to the needs of the Victorian community.

Specifically, the project involves two primary stages. The first involves identifying and researching a range of issues in relation to the framework, identifying potential models and selecting the most appropriate. The second involves developing the framework and supplementary materials that will support its implementation and ongoing use in Victoria.

2. Progress to date

The early part of the work of the project aims to identify key issues confronting the project and develop a shared understanding of project directions on which future actions can be based. Specifically in this phase of the project, we set out to:

- review the literature relating to the pedagogy of design in schools, VET and Higher Education (HE);
- review a range of models of design education that are current in Australia;
- review a range of existing initiatives and associated projects that relate to the development of design skills in Victoria, and
- interview a range of key informants to design education in VET in Victoria, including practitioners, policy makers and educators from all sectors.

At this stage, we have been able to undertake a partial review of the literature relating to design pedagogy. This revealed a large body of work relating to HE, but little relating to schools or VET. In part, the literature review remains incomplete because we were anxious not to duplicate the work undertaken in the Design Qualifications Scoping Project (Scoping Project) Research Report (also managed by the VQA), which has only just being completed. Further investigation will take place during the next phase of the work, based on priorities identified following a consideration of the issues raised in this paper.

We have been able to review existing models, including the Certificate IV in Applied Design for Industry, the Victorian Certificate of Applied Learning (VCAL), the South Australian Curriculum Standards Authority (SACSA) model for design education in upper secondary school and the Bachelor of Design at RMIT. We are also considering a credit matrix model, and will examine the New Zealand Credit Matrix and the model being proposed here in Victoria. Once again, consideration of the Victorian Credit Matrix will be ongoing during the life of the project, as it is in development itself.
Key informant interviews have been completed, and form a large part of the evidence on which this paper is based. Interviewees participated with enthusiasm for the project and were generous with the data they offered. This has enabled us to develop a rich picture of the issues and context for the project. The interviews revealed a range of initiatives currently underway in Victoria that need further consideration. One way of tapping into the richness and diversity of these is through the consultations in the next phase of the work. Finally, further work needs to be undertaken to examine the outcomes of the Scoping Project. It has not been possible to do this prior to the development of the issues paper, since the Scoping Project has only just been completed and final documentation made available to this project.

The next phase of the project involves consultation with a broad range of stakeholders to test out issues raised and to explore the feasibility of different models and options for the framework, as well as issues relating to its implementation. This following phase will provide an opportunity to target remaining research and investigation specifically to the project direction that is established through the Steering Committee’s consideration of the issues raised in this paper.

3. Aim of the paper

The main aim of this paper is to enable the Steering Committee to provide guidance to the project team on the next stage of the project. It doesn’t aim to present definitive statements or a resolved position, but aims to open up discussion relating to the scope of the framework.

This paper presents the issues that have emerged from the data that has been available to the project team to date. The initial investigation is not yet complete, but this provides the Steering Committee with the opportunity to work with us to identify what most usefully remains to be examined. Moreover, we are confident that the issues presented within this paper provide a full and complete picture of what needs to be considered at this stage of the work.

The paper is intended to inform, and whilst it doesn’t provide a comprehensive discussion of each issue or model, it raises the complexities facing the project. We hope that these can be discussed in depth in the next Steering Committee meeting in order that the project can move forward based on a shared understanding of what the framework is attempting to do.
4. Issues emerging

The following section of this paper outlines the major issues confronting the project that have been identified through the interviews, the review of associated projects, the literature review and the review of comparative models.

a) Definition of design

Interviews revealed that a range of understandings of ‘design’ exist, and that there seems to be slippage between notions of ‘design’, ‘innovation’ and ‘problem-solving’, as well as a lack of distinction between ‘trade’, ‘craft’ and ‘design’. In terms of ‘design’ two basic positions were expressed. The first is that design is a highly specified conceptual process, which comes out of the specific training that the individual has received, and which aims to stretch the boundaries of meaning in the exterior, political and commercial world and the inner emotional world. The second is that everyone is a designer by virtue of being able to have an idea and realise it in some kind of tangible form. The energy with which definitions were articulated suggests that these definitions are not neutral, but reflect underlying beliefs about the way that the work of designing and/or making (or implementing) is structured and how it should occur. The first position sees a high level of distinction between design and related areas, whilst the second sees a more inclusive relationship.

The lack of a single, clearly accepted notion of what design is and who it’s done by needs to be considered in the light of the framework and what it is aiming to achieve. The earlier Scoping Project encountered difficulties with definition, and resolved these by developing notions of ‘designerly thinking’ as the intention for the curricula with which they were dealing. In other words, VET curricula are not trying to produce designers, but people who are capable of designerly thinking and have an awareness of the value of good design. The ‘starting point definition’ they offered read:

Design involves the transfer of ideas or intent into reality. It encompasses: outcomes (products) and processes; aesthetics, function and performance; planning and problem solving; crossing traditional industry boundaries and materials boundaries, and the human interface. The stages of designing include the brief, research, concept solutions, design development, documentation and implementation.¹

‘Designerly thinking’ can occur in any of the five areas mentioned above. A sixth area in which designerly thinking applies was identified: strategic development/thinking (innovation). This definition applies to the scope of design work in a way that would allow an extremely broad range of activities occur under its banner and does not make any attempt to place design in a social, political, commercial or environmental context.

¹ Design Qualifications Scoping Report
It is possible to select a definition which functions as a statement of the values relating to design that the framework upholds, in the manner of the SACSA curriculum framework. This can provide for a broad range of outcomes that are measurable in terms of that particular definition. In this way, the definition will drive the intent of the framework and will shape the learners who enter and emerge from it. A notion of design driving the framework which is socially, economically, environmentally and responsive and responsible offers Victoria an opportunity to make a strong statement about the value and place of design in the community:

Design is a compelling and strategic transformative force in providing solutions to the social, technological, economic, political and cultural issues that are impacting our world…It provides a fusion of innovation, beauty, function and responsibility that leads to an enhanced quality of life for all human kind…It is the physical manifestation of change.²

The Scoping Project Research Report identified the ‘ethical design movement’ as a significant global trend. This movement supports the notion of responsible design and questions the contribution to society and the political issues associated with design work, raising concerns that designers’ roles are currently too bound in the promotion of consumerism and manufacturing demand.³

A number of interview participants pointed out that design was a process that was laden with responsibility to self (through one’s own professional practice) and others, where design is:

…a dynamic process which enables all people to realise their potential and improve their quality of life in ways which simultaneously protect and enhance the Earth’s life support systems.⁴

In developing a definition of design to guide the framework, it is important that it provides clarity relating to design education in VET in Victoria. This means that it will be important to differentiate what happens in VET and the type of vocational outcomes provided for from design education in HE. In other words, potential competition or overlap with HE needs to be identified, at the same time as ensuring that there are linkages between VET and HE, as well as between schools and VET. A clear definition will inform the basis of difference between designers, those who undertake components of design work (ie ‘designerly thinkers’) or work with designers to enable them to realise and implement their designs and those who desire to consume good design. A general raising of standards in relation to design education will be helpful (to Victoria), but it needs to be established on a shared understanding of what design is and how different people contribute to it. It is also important that the scope of the framework is defined and realistic and that it does not attempt to become ‘all things to all people’.

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² Pelly, C.W.
³ Design Qualifications Research Report
⁴ Forum for the Future
b) The intentions of the framework

Interviews indicated strong support for an initiative which would strengthen design education in the VET sector in Victoria. However, there were different positions relating to how this might happen and what the result might look like. In particular, the balance between structural change and professional development needs to be considered, and how the framework might engage both with the structures and systems for design education and the teacher skills. Perhaps the foremost issue raised in relation to the framework was its relationship with what already exists, in particular, its relationship with trade-related vocational qualifications in National Training Packages. Concerns included the:

- level of industry support that would be possible for qualifications that sit outside the National Training Package system;
- identification of appropriate vocational outcomes for qualifications within the framework;
- entry level for design capability (consistent with the Design Qualifications Scoping Project, which identified most design components at Certificate III and above);
- potential overlap with upper secondary education and with the VCE, and
- need to provide for new forms of work and combinations of skills that have yet to be identified as traditional vocational outcomes.

Ensuing sections of this paper deal with these items in more detail. In conceptualising the framework, it is clear that something needs to be developed which is not seen to replicate what already exists, and which in fact adds to and builds on what is currently available. At this point in the project it is not possible to say whether the structural elements (ie units and modules) are available to enable people (be they individuals, providers of design education and training or industry players) to access what they want. Once the Design Qualifications Scoping Report has been released in final draft, further investigation can take place to examine the applicability of what exists and determine the need for development. Obviously the agreement of particular a particular definition for the framework will impact on this process, and agreement needs to be reached on this before it is possible to evaluate the suitability of what currently exists. From the interviews, however, what appears to be lacking is the flexibility required to respond to local needs as they arise and to be able to diverge from the national ‘super-structures’ where appropriate. Additionally, more liberal approach to what makes a good vocational outcome, and a means of developing a qualification-based solution that reflects teaching and learning rather than assessment were also strongly supported.

The implications of this thinking suggest that the Framework needs to be conceptually driven and underpinned by a clear rationale governing its intentions and what makes good design education. It needs to identify desired outcomes and enable a pedagogy that will deliver its intentions and to be driven firstly by the process of teaching and learning, and secondly by the need to provide a particular vocational outcome. This was strongly supported in the interviews, particularly by educators, although it was clear that the vocational aspect of VET is important both in differentiating it from VCE and in ensuring continued industry support. However, some review of how these are achieved is clearly necessary.
Today’s new designers require a new kind of training that goes beyond the traditional apprenticeship and practice-based programs associated with most academic design programs in the past…Until recently these programs tended to emphasise original creativity and processes of trial and error characteristic of arts and crafts traditions rather than research, methodological reflection, and publication central to most contemporary professions.\(^5\)

The shift is driven by advances in the discipline of design which is now ranked on a par with other scientific and scholarly disciplines. If VET is to retain its currency and relevance, a similar shift needs to happen in the vocational sector. Obviously, the intention is not to create mini-versions of HE programs in VET, but to examine the ways in which VET qualifications need to change, both in terms of what they contain and how they are delivered, in order to remain relevant. In particular, this is impacted by

...the amount of available information, greater understanding of how to use that information and advancements in technology. When people make things using information, know how and technology, they begin to design. Designing is the planning required in making a final product. You can see it in blueprints of buildings, schema of electrical circuits, and the outlines of teachers’ lesson plans. Design is making. Design is imagining. Design is applying knowledge and skills.\(^6\)

This is important because it indicates the nature of design work in a vocational context and points to the need for a particular pedagogy that will bring about different outcomes from traditionally structured programs which focus on the techniques of making, rather than the manipulation of information in applied ways.

c) Culture

The Scoping Project Research Report states that one of the characteristics of the Australian design industry is the ‘lack of entrepreneurship that is prepared to take risks and accept that not every idea will be successful.’ It goes on to claim that, for there to be greater calculated risk investment in Australian design, a cultural shift in necessary to enable a higher regard for Australian design. The shift in culture cannot be achieved though action within the VET sector alone, and must be accompanied by a re-focussing of design in general education in the primary and secondary curriculum. Moreover, there is a very real question about the readiness of Australian enterprises to utilise individuals who have enhanced design skills. This was supported in numerous interviews, where participants questioned the extent to which employers want employees to think and act in a ‘designerly’ way. It is also borne out in the difficulties the Certificate IV in Applied Design for Industry has encountered in gaining industry support in some sectors for the new qualification.

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\(^5\) University of California

\(^6\) Designing and making across the curriculum
Further to this, interview data suggests that work related to design is currently characterised by high levels of demarcation and stratification between sectors and between those who undertake the conceptual tasks of design and those whose work involves the realisation of others’ designs or styling and modification of existing design to improve some aspects, for instance functionality, aesthetics or safety. Where this demarcation is most obvious is in the traditional trade areas. Tradespeople typically see design work as the territory of others, or they consign it to ‘art and craft’. They do not expect to be consulted in the designing and planning stages of work and see their role as sorting out the problems caused by the designer’s lack of practical knowledge about the production/construction process. A number of the interview participants expressed the need for a different approach to design work that draws more on consultation and team-based problem-solving.

The implications of this include the need to move away from elitist notions of design that are about highly visible, high-end commodities to being able to see the value of good design in a range of outputs, including process and strategy development, and how individuals with different roles contribute to achieving this. The cultural shift to something that is more inclusive will need to be handled with deliberation and sensitivity to the Victorian context.

d) Pedagogy

The interviews present a clear case for a framework which is founded on a strong pedagogic base that links teaching, learning and assessment to the desired outcomes for the learners. During the interviews, participants presented a number of examples of successful and innovative programs. These had a range of features in common, including a focus on problem-based learning and a clear focus on design (rather than production) where technology is seen as a tool in the design process, rather than an end in itself. These findings were supported by the Scoping Project Research Report, which highlighted the importance of:

- teaching centred around ‘iterative processes’ involving doing and reflection on doing, with technology kept as one of many tools rather than a particular area of emphasis;
- learning design which acknowledges the social processes of learning (embedded in methodologies such as action learning and communities of practice) and which imply a shift of responsibility for learning from the teacher to the learner, and
- assessment processes which are able to cope with the particular demands of assessing design capability, including its creative and innovative aspects.7

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7 Design Qualifications Research Report
The value of designing and making to learning in general is expressed as follows:

*Students develop skills when they design and make. Design is about creating something from an idea. Designing and making requires the “designer” to understand what needs to be done and why, to research possibilities, to know limitations and criteria for successful designs, to generate ideas, to plan how to do the work, to make something (artefact, system or environment), test, modify, evaluate and communicate.*

In this way, design value-adds to the curriculum wherever it is integrated. The most successful programs appear to operate where groups or teams of teachers have been able to work together on the design of a learning and assessment program which meets the needs of a particular group of learners, both in terms of their learning needs and the outcomes they want to achieve. Through such collegial design activity, teachers are able to come up with a coherent, thought-out approach which links philosophy to practice and enables learners to develop both skills and a deeper understanding of the process and practice of design.

Interview participants from providers, industry and trade unions were critical of the current approach to skill development in VET and felt that Training Packages were inflexible and reduced the possibility of anything other than surface learning. A number of participants claimed that the qualifications had removed higher level skills and conceptual skills in trade areas where traditionally ‘master’ tradespeople have practiced at the junction between design and production, construction or implementation. There was a desire to move away from the fragmented and narrow focus that Training Package qualifications offer to something that offers opportunities for an approach which integrates conceptual and practical skills at all levels. The issue of not having to get it right was raised in a number of interviews along with the need to learn how to take risks. Participants felt that this is an important area in design education, which is not currently well treated in VET and experiences constraints in terms of the assessment focus and funding model related to Training Package qualifications.

Importantly, many different models of delivery abound which are able to demonstrate successful outcomes for learners. This includes those who are developing initial vocational skills and those who are already proficient in a particular trade who require a different approach to learning. It would seem sensible therefore that the framework is developed in such a way that individual groups of teachers are able to work with learners, industry and other educational partners (as appropriate) to design programs which meet local needs.
A highly specified approach to teaching and learning would not enable the linkages between program design and practice that make a successful program. However, this raises the question of how an integrated approach would be resourced, and highlights the need to provide some kind of acknowledgement of the time taken to develop and deliver problem-based approaches which integrate curriculum components and expertise from traditionally discrete areas of provider institutions. Likewise, the time taken to develop design skills needs to be acknowledged within the framework structure through horizontal pathways or some kind of nested qualification structure, at the same time as retaining the integrity of qualifications at different levels.

One of the difficulties for the framework is finding a way of taking up a pedagogy which relates to design which is at once capable of dealing with qualifications primarily focused on design and those where design forms a component or element of the qualification. If the framework is based on a pedagogy which is highly related to design education, it may be difficult to incorporate qualifications for which design is not the primary outcome.

e) Skills and capabilities

It was clear from the interviews that design comprises more than a set of technical skills relating to, for instance, drawing and making, and that the development of ideas, the ability to solve problems and work as part of a team are equally important. A number of participants talked about the need to develop particular attitudes which, in combination with particular skills, inform an individual’s practice in any given context. Whilst the context in which design activities take place varies from sector to sector and from company to company, some commonality in the areas of skill that are required. These include skills in:

- process and technique, including materials;
- information management, including its application in digital environments;
- work management, planning and problem solving;
- research;
- team work;
- interaction and client management, and
- design business, management and strategy.

Shifts in the nature of the industry have seen an increasing emphasis on communication and collaboration skills and on the ability to act as facilitators and problem solvers9.

At the same time, these skills are applied with an understanding of:

- the fundamental principles of design, and what comprises good and bad design and why;
- the function of design in social, political, commercial, environmental contexts and the interaction between them, and
- knowledge theory.

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9 Design Qualifications Research Report
Successful models of design education, including the SACSA and the Italian school sector, prioritise the cultural and historical explorations and precedents for design in the curriculum because these form the basis for the critique of design that is essential to good, sustainable practice.

The work undertaken in the Scoping Project supports these findings. The growing acknowledgement of design as a discipline with its own unique knowledge base, philosophic methodology and research practices is impacting on the professionalisation of the occupation of design. The importance of this in terms of the structure of the framework and the skills context of the qualifications within it relates to ensuring the intellectual independence of design. This requires that some sense of knowledge theory as it relates to design overarches or guides all qualifications to protect the sense of design as something different, or else there is the danger that design will become another form of problem solving\(^{10}\). This will also have an impact on the skills and understanding that teachers of design require, once again to ensure that the correct focus and preservation of design as a discipline is upheld.

Design skills can be identified outside the context in which they are applied, but as the previous section made clear, their development and practice in different contexts is important. Kenji Ekuan proposes a model that identifies design capabilities that combine to produce ‘total design’\(^{11}\):

1. Eco-Designer: By building a view of life, and seeking the correlation between designs.
2. Material Designer: By building a view of materials, and seeking the correlation between material development and design.
3. Energy Designer: By building a view of energy, and seeking the correlation between sustainability and design.
4. Life Designer: By defining a view on death, for the beautiful end of human life, and seeking the correlation with the aged society in both mind and material.
5. Community Designer: By building a view on local communities, and seeking a way of managing creativity in the communities.
6. Global Designer: By building a view about the earth, seeking well-being for several billion people who have not benefited from modernisation.
7. Entertainment Designer: By building a view on entertainment and seeking entertainment for structuring young minds
8. Mechatronic Designer: By building a view of science and technology and seeking human evolution.
9. Human Designer: By building a view on humanity, and seeking the needs of human existence.
How the framework deals with the balance between design and its applications will have a significant impact on the outcomes that arise from it, which links to questions about the coverage, focus and structure of the Framework. One way of considering this is to examine the position of design in relation to work (or job), including work which:

- is primarily about design;
- involves a component of design or interaction with the design process, designers or consumers of design, and
- appears to be ignorant of the value of design.

On an individual basis, as well as providing for skill development for individuals who want to gain a total package of skills in which design forms the focus or a component, the framework needs to consider people who have specific skill development needs, including those who:

- already have vocational skills in a non-design area who want to gain some aspect of design skill to enhance their current practice, and
- people who are capable in one design area who want to gain skills that will enhance their current practice, perhaps in another technical area or perhaps in relation to the business of design.

The tricky question in terms of the framework relates to the determination of qualification level. To what extent does this rest with the level of design capability, and to what extent is it determined by the context in which designing is taking place? Is it possible to determine enough difference in design capability to structure qualifications at the six levels of the AQF, or should a set of capabilities which overarch all design activity be identified, with the difference in level established through some other mechanism? This latter position is evidenced in different ways in the VCAL and the Front-line Management Initiative (FMI). The VCAL is driven by common capabilities which are differentiated in terms of learning outcomes at three different levels, whereas the FMI repeats the same competencies at three different levels which are distinguished through their application and the context in which assessment takes place.

**f) Generic and applied design skills**

A number of interview participants talked about what characterises design education in the HE sector as distinct from the VET sector (where views about the occurrence of true design education were varied and depended on definitions of design that people hold). From their data, it appears that design education in HE is primarily concerned with learning a conceptual process which, at some point, is applied to a particular context. From the outset, students engage with design intellectually, and concept drives practice although the point at which learners move from the general to the specific, or vice versa, appears to vary from program to program. In developing the framework, it is helpful to consider what characterises design education in vocational education, and then to consider how the development of a qualification framework can strengthen current practice.
The Scoping Project Research Report offers an option for what VET and HE could usefully offer, based on VET developing the basic design skills and HE focussing on the disciplines of design and design research.12

Traditionally, tradespeople have learned design in the context of their trade or craft, evidenced through the Guilds in Europe and the progression from apprentice through journeyman to master craftsman. Mastery of a trade or craft has been associated with the ability to resolve complex design problems during their application and to come up with innovative solutions with knowledge based in experience and practice.13 In recent years, in terms of the position of design in relation to production/application, the Victorian State Training System has chosen to place the control of design to the industry sector in which it takes place via the Industry Training Boards and the Curriculum Maintenance Managers.

Interviews provide a consistent point of view concerning the relationship of design to its industry application. Firstly, the majority of students in VET have a practical orientation, both in terms of their learning style and in terms of their desired outcomes. VET students typically have an applied focus to their learning and want to learn to do something through doing something, where ‘doing’ comprises a practical or manual activity rather than a conceptual activity. One of the strengths of the VET system is its capacity to produce people who are expert in technique, whose practise is embedded in the technical aspects of what they do rather than the conceptual aspects. However, the higher value of skills which can be theorised and the value of thinking and ideas were also upheld as something which should be a component of vocational education. This is particularly important when we consider the impact of the information explosion on design.14

The view was generally expressed in the interviews that the separation of design from its application at the VET level is not helpful for design, and that what needs to be done is the strengthening of design thinking in the production (or applied) process. If this is the case, then the framework needs to find a way of integrating the conceptual and practical tools of design, and the design process with the manufacturing/making process in the context of particular industry knowledge (eg working with clients, teamwork). Contextual skills vary from industry to industry, as does the particular balance between the design element and the applied element, which requires internal flexibility in the framework to ensure that a range of outcomes can be met.

The recently developed Certificate IV in Applied Design for Industry is structured to provide this flexibility, and as such offers a good model for the framework. However, this qualification functions at one level only, and therefore does not deal with issues of horizontal transfer and equivalence of skills, or with the different foci on design (from central to role to tangential or over-arching) that have been identified earlier in this paper as possible outcomes for the framework.

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12 Design Qualifications Project Research Report
13 University of California
14 Designing and Making across the Curriculum
What is important is that design thinking underpins the qualifications in the framework and drives the teaching and learning that it delivers. Design orientation is not only provided by the type of qualifications, but rests in the stance and practice of those who teach within it. The capacity to ‘think outside the square’ and to think about one’s own practice applies to both the learners and to those who teach them.

Whilst it is possible to recognise design capabilities that are common to a range of industry sectors, in reality, the practice of design is highly knowledge-embedded. The extent to which people move between different design applications or contexts is not clear. The issue of at what point should generic skills be embedded in particular contexts remains: the point at which the embedding takes place will impact on the outcome in terms of student learning. Whether the framework prescribes this or leaves it up to the individual provider (since the interview evidence suggests that individual providers approach this differently with equal success in the market place and in terms of graduate destinations) needs consideration.

g) Industry Directions

The interviews present a picture of a design industry that is changing rapidly. Change is manifest in different ways in different sectors, and it is not the intention of this paper to present a picture of what is happening in specific sectors. However, it has been possible, from the interview data and the literature, to identify certain elements of change that run throughout industry where design occurs.

Firstly, the relationship between technology and design needs to be considered in the context of rapid developments in the software with which designers articulate and realise their ideas and in the computer technology that drives production processes.

The rapid development of technology will provide designers with new opportunities to study the relationship between man and the environment. The goal will be to combine human needs and technology in a new way. Miniaturisation and micro structures will lead to increasingly smaller and lighter products.\textsuperscript{15}

In manufacturing, there is the possibility of shortening the once lengthy prototyping stage through the use of design software and technology which is capable of testing designs at their conception, thus cutting out the need for drafting and pattern-making skills. In spatial design, it is now possible for people located in different countries to work together on the same design in real time through the use of high-end software. At the same time, unit labour costs have seen a great deal of manufacturing shift offshore, raising a real question about the location of the industry that Australians are designing for.

\textsuperscript{15}Imperiali, A.L.
Secondly, as industry in general and service industries in particular converge, the work of designers appears to be converging. Thus, visual communications moves into strategic marketing, architecture moves into construction project management, interior designers find themselves working alongside organisational change specialists to manipulate the relationship between space and culture and scriptwriters find themselves designing computer games.

The courage to do things that have not yet been done; to research, be inquisitive and direct their efforts in innovative ways. An ability to create innovative co-operation with manufacturers, address the marketing of objectives of design, and exploit the countless opportunities of communication.\(^\text{16}\)

This shift was noted in the Scoping Project Research Report, which identified design as a ‘way of thinking that allows ideas to be shifted and developed to bring together technical possibilities, market demand and business opportunities in a way that can not be achieved through any other skill set.’\(^\text{17}\) The relationship between design and strategic thinking and the increased prominence of design as a mechanism for the strategic development of an organisation was articulated in interviews and in the Scoping Project Research Report.

A third change relates to the interaction between technology and materials. Textile designers find themselves working with increasingly technologised fabrics to produce specialist clothing which has applications in the broader fashion market. In this, design joins the knowledge economy, and it is computer technology that has enabled the opening up of new paradigms, new ways of thinking and working that go beyond a specific set of skills in a particular context.

New materials will have a fundamental impact on design. Novel materials will be studied, developed and sought for within the various branches of technology, to be used in designing dwelling and work environments, clothing, and objects for leisure. The goal will be to promote well-being and to create a sustainable environment. The major task of designers within these preconditions will be to create objects that have soul.\(^\text{18}\)

The challenge for the framework is to find ways of remaining responsive to an industry that will always be ahead of VET providers (which relates in part to access to software and technology) through innovative processes and dynamism in the way in which the framework is articulated.

\(^\text{16}\) ibid
\(^\text{17}\) Design Qualifications Research Report
\(^\text{18}\) Imperiali, A.L.
h) Linkages, pathways and outcomes

The interviews raised a range of opportunities and questions relating to the manner of the links between VET qualifications and those in the school and HE sector. The extent to which the framework needs to be linked to those sectors, the pathways it provides and the range of outcomes it offers all require further exploration and debate.

Interview participants agreed that HE graduates often lack the work skills and understanding of techniques and processes, particularly relating to design in manufacturing and industrial contexts, although this was also raised in the context of fashion and graphic design. Whilst VET graduates may initially have better work ready skills, they are not likely to give the same long term value as HE graduates. In terms of articulation, there appear to be possibilities for HE graduates to undertake VET qualifications (or components) to gain specific skills, either in conjunction with the degree study or following it. Interview data also suggests that articulation from VET into HE varies from sector to sector, course to course and provider to provider. Some examples of formalised articulation pathways between VET and HE were presented, and in other cases, there is very little articulation, perhaps because students are not interested in the kind of learning that takes place in HE. The extent to which VET graduates take up HE study later in life was not clear from the interviews.

Design education in the school sector occurs through certain studies within the VCE and through relevant VET in VCE courses. According to the relevant ley learning area managers within the Victorian Curriculum and Assessment Authority (VCAA) VCE studies in art, and design & technology do not have strong links to industry outcomes (which are situated within VET in VCE studies) but focus more on design, designers, the process of design and the role of designers although the extent to which design is explicit in any given study is linked to the perceived extent to which it exists in industry. The extent to which design is explicit in VET in VCE courses depends on the curriculum for the course and the provider’s capacity to treat design.

A significant problem with design education in schools is related to the low weighting that the Design and Technology subjects are given in the VCE. This impacts negatively on TER scores and on the extent to which design subjects are resourced lower down the school.

Teachers from the two Year 13 Art and Design programs that exist in Melbourne suggest that a further problem for students is that they are required to select the context they want to design in at the end of Year 11 or 12. At this stage, many students haven’t had the experience or exposure to enable them to make a good decision. The additional time that Year 13 provides enables this.

There appear to be a set of pathways that link school and university or work via TAFE, where students exiting Year 12 who do not want to go into a trade area undertake non-trade related VET studies, for instance in automotive, engineering or furniture which enable them to enter work at a paraprofessional level. These courses are technology focused but provide some design understanding.
Interviews supported the argument for a broad interpretation of vocational outcome, an understanding that people combine components of qualifications in ways that may not be recognised by larger structures and the recognition that the skills gained in an applied design course are valuable in their own right and may enable an individual to progress to work or further study even if it is outside the area they have graduated from. This would suggest there is a need to provide VET qualifications which enable a range of outcomes, from the highly industry specific ones to broader ones which provide linkage between school and HE in different ways. A set of ‘design’ qualifications which function only as pathways may be one solution, although this clearly rests on a different understanding of ‘vocational outcome’. The level of these qualifications (or qualification) needs to be determined, because of the difficulty of determining qualification on the basis of design skill alone.

Another issue presented in a number of interviews relates to the raising of the bar in relation to entry level qualifications. In some sectors, for instance graphic design, the entry level is being pushed to above Certificate IV. This shift is connected to changes in the industry and a concern to protect professional standards. There are other problems associated with non-apprenticeship qualifications below Certificate III which relate to OHS. Industry players are not keen to have young people in workplaces at this level, which threatens to have a serious impact on the way that Certificate I and II VET qualifications are delivered. Thus some consideration of the nature of the design skills and their application in these qualifications is necessary to ensure that they are feasible in delivery terms. Contradictory positions regarding the difficulty of identifying the low end of the design skill continuum were presented in the interviews, and seem to be linked to the broader understanding of what design is. Whether it is seen to be a sophisticated process undertaken by highly trained individuals or whether it is seen to be a process of thinking and doing that is available to all has a significant impact on the extent to which it is possible to identify design skills in Certificates I and II qualifications. One possibility is to identify design capabilities that can be re-applied at different levels (like the FMI), and where the level of the qualification is then determined by the application, not the capability itself.

Finally, consideration needs to be given to the opportunities and need for horizontal pathways. To what extent do people actually move from one area of application to another, and therefore how flexible does the framework need to be? Interview data would seem to suggest that there is less lateral movement rather than more, although people combine individual components across lateral boundaries. With the convergence of industry sectors, the emergence of new sectors such as the gaming industry which draws on a range of disciplines and the emergence of new conceptualisations of work that are primarily available to young people, some means of combining components laterally to form qualifications needs to be considered. The major question here is to what extent do these need to be constrained by recognised vocational outcomes, and how should the integrity of a qualification be maintained in a freer conception of a valid outcome?
i) Professional Development

The issue of professional development and/or teacher skills was raised in a large number of interviews. A view was presented consistently that an improvement in design education in VET in Victoria is as much about teacher skills as it is about having appropriate qualification structures in place. However, there is evidence to suggest that capable teachers are able to assist learners develop and apply problem solving and innovation in the context of other skills, and this is linked to program design (at the provider level), individual teacher capability, collegiality, a team-based focus for delivery and favourable administrative arrangements within the delivering institution. What is problematic is that governments measure (and fund) outcomes in terms of quantifiable skills learned, which works against a model of skill development where design may integrate different areas of application and which is not based on narrowly defined ‘trade’ skills but a more holistic notion of development and vocational outcome.

Secondly, the professional development project for design teachers in upper secondary schools (which have a similar demographic to TAFE teachers) suggests that teachers currently are not well prepared for integrating design skills in to their programs. Many teachers are good at teaching in their trade area, but lack the skill or orientation to integrate design and designerly thinking into their practice. This relates to both knowledge of the design process and how it works in any given context and to culture: trade teachers do not necessarily see themselves as designers or as agents in the design process. They do not link their actions as designers of learning (which, in any case, is highly embedded in pedagogic practice, rather than the industry outcomes they teach towards) with design in other contexts. Moreover, the advent of Training Packages has seen the ‘dumbing down’ of teaching, rather than the flexibility of delivery and relevance of vocational outcomes to local needs within structures that protected the integrity of qualifications on a global level that they were intended to produce.

Thirdly, there is a need to prepare teachers for teaching and learning models which see a shift in focus from teacher to learner. Such a shift alters the traditional authority relationship between teacher and learner, and can be challenging for teachers and learners alike. Supporting models of learning where outcomes are less predictable and more risky needs to be considered in the context of an educational system and institutions which are more attuned to what is controlled and safe, and where risk in learning is minimised.

Finally, several interviewees from different sectors questioned where professional development would appropriately come from. It was suggested that the traditional instructional model that is delivered in schools of education in HE is not suitable for the kind of applied learning that needs to take place to realise design skills in vocational education, and that those people currently teaching in VET do not have the approach or mindset that is required either.

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5. Other models

This section provides a brief outline of a number of different models relevant to the project and uses these to identify structural issues that the project needs to consider. At this stage, we do not intend to present a detailed description and analysis of the models. A more detailed investigation will be presented in the report at the end of Stage One of the project.

Five models have been selected, as follows.

**Certificate IV in Applied Design for Industry**
This is a single qualification which integrates core design skills with generic work or organisational skills and industry specific skills. Flexibility is provided by the elective structure which is available across all three streams to enable differing amounts of design and non-design emphasis and the ability to apply the qualification to different industry sectors. Two design competencies form the only mandatory part of the qualification. The certificate is a post-trade qualification which provides for a single exit point. Whilst it is the model the draft Design Qualifications Scoping Project recommends, it is not clear how the model would work applied to a framework as a whole. In particular, the issue of determination of level is not dealt with.

**Bachelor of Design (RMIT)**
This again is a single qualification which draws on a matrix structure based around specific design subjects which are delivered within the context of a particular application in the early part of the program. Integration of subjects is achieved through a design studio. In the latter part of the program, students are able to select subjects from other design contexts and integrate them into their practice as designers in architecture, landscape architecture, fashion, communication design, interior or industrial design. Design projects and collaborations enable students to integrate these different elements into their practice in a real world environment. This program provides a good example of the relationship between a philosophy of design, curriculum structure and pedagogy.

**Victorian Certificate of Applied Learning (VCAL)**
This too is a matrix structure which provides for qualifications outcomes at three levels, based on four common curriculum strands. Curriculum components have been developed specifically for the VCAL for two of the strands at each of the three levels, and each level builds on the previous. Statements of intent drive selection of existing curriculum from VET, Adult and Community Education (ACE) and VCE units in the remaining two strands. The VCAL is driven by clear intentions and considerable internal flexibility through the selection of curriculum components from a broad range of areas. Thus, individual needs can be met whilst preserving the integrity of the qualification. Level is determined through the way units in the four strands are combined, which once again provides a high degree of internal flexibility.
South Australian Curriculum Standards Authority (SACSA)
This model provides for school education from birth to Year 12. Design has been situated in the technology stream to reinforce the notion that technologies don’t exist of and for themselves, but are created and designed and applied in particular purposes. Moreover, design was perceived to be about more than the aesthetics generally associated with studies in arts. The model has a strong focus on teaching and learning, and leaves teachers in control of the curriculum. It states what it intends students to develop, expressed as broad capabilities, rather than narrowly defined competencies.

The design and technology strand provides key ideas which guide the scope of learning, and specify related outcomes and performance levels. These specify the social context in which technology and design is practiced and exposes the values and politics involved in the processes and products. The model contains 5 levels over its entire scope, defined by the key ideas and associated aspects. The key ideas are expressed within three areas: critiquing, designing and making. Of the three, critiquing is the strongest because of its importance in shaping the design process. This strengthening of the conceptual component of the study is also a response to similar concerns with the low ranking in Tertiary Entrance Rank (TER) scores that design subjects receive in Victoria.

Frontline Management Initiative (FMI)
The FMI describes management competencies in generic terms. These can then be applied to management activities in different contexts. The same competencies are also applied at three different levels, differentiated on the basis of the scope of the work they are applied to, and reflected in the context for assessment. The FMI competencies can be combined to form whole qualifications, or integrated into existing qualifications to provide a management focus. In the latter case, the level is determined by the contextual competencies and FMI competencies selected and assessed at the appropriate level. The qualifications work well in industry environments, but are harder to apply in institute-based pathways. It is also important to note the long period of time and struggle that TAFE providers seemed to have in coming to terms with the generic nature of the FMI competencies.

In considering the suitability of each model to the framework, the following need to be considered:

- what is driving the composition of qualifications, the extent to which they focus on design and the extent to which they enable a supportive pedagogy;
- the nature of the outcomes provided by the qualifications in the framework and the extent to which they enable people to gain initial skills as well as add to existing skills;
- the flexibility of outcome;
- how the level of the qualification is determined, whether this resides in the design component, its application or a combination of both, and
- how designing is situated within the qualifications in relation to making and thinking about design.
6. Conclusions

Based on the data presented in this paper, it is possible to draw conclusions, some of which appear to be quite firm at this stage whilst others are tentative and require more investigation.

From the data available to date, we may conclude the following. Key questions have been included where appropriate.

- A structurally prescriptive framework will be less helpful and less acceptable than one which reflects clear conceptual thinking about the nature of the design outcomes and values it is aiming for.

- The scope or coverage of the framework needs to embrace qualifications which have design skills and outcomes as their primary focus. However, the extent to which it can capture qualifications in which design is a component of the outcome needs further clarification.

- The framework needs to provide for a range of individual needs and both enable the development of new skills and entry into the world of work as well as the possibility to build on existing skills or to combine skills in innovative and different ways to meet new and emerging vocations and conceptualisations of work. Thus, it needs to contain the possibility for horizontal and vertical movement.

- A dependence on the traditionally narrow definition of ‘vocational outcome’ is not likely to provide the improvement in design capability that the Victorian Government is seeking. Thus the framework should embrace a pedagogic focus on active learning and the development of design skills and knowledge and assessment that is capable of assessing design capability in a deep sense.

- Flexibility at the local level in terms of specifying the content of a qualification and the way it is delivered and assessed will provide for the linkage of philosophy, pedagogy and practice. However, attempts to enable local innovation must not be made at the expense of integrity and rigour in the qualifications and the framework as a whole.

- The basis for establishing level in the qualifications needs to be determined, with particular regard to the relationship between design capability and contextual skills and the weighting of each.

- Levels of qualification appear to occur at pre-vocational, entry level, post-entry (ie paraprofessional/technical) and one higher level that relates to design management and/or an articulation pathway. This needs further exploration and testing.

- The implementation of the framework will be tricky and would appear to benefit from the contiguous development of a strategy which embraces professional development for teachers and preparation for providing institutions and industry in the changes and benefits the framework can potentially bring.
7. **Next steps**

The remaining work for the research stage of this project involves:

- a series of consultations with stakeholders throughout Victoria to collect further data relating to outstanding issues and to test the feasibility of potential models for the framework;
- the completion of the literature review;
- investigation of other models, as determined by the Steering Committee, and
- development of a final report which outlines options and makes a recommendation to the Steering Committee, based on evidence, for the framework.

Following this, the framework will be developed.

The next immediate step is to have the Steering Committee meet to discuss the issues presented in this paper. The discussion is aimed at providing guidance to the project team to inform the consultations and research in the next phase of the project.

**URCOT**  
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