

# The Future of Higher Education in the Knowledge-based Economy: Developing Innovative Approaches to Integrated Articulation and Credit Transfer in Australia

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**Abstract**

The Integrated Articulation and Credit Transfer project (IACT) is an action research project which is developing innovative strategies and models which may overcome the barriers to articulation pathways, partnerships and agreements between the education and training sectors in Australia. The project seeks to improve the level of industry input into articulation pathway development, and to improve the levels of transferability and sustainability of articulation models and pathways between stakeholders. Ultimately, the project seeks to make articulation pathways easier to establish for stakeholders and more seamless for students.

A key area of the connectivity essential to the success of an articulation pathway that is given little attention in the articulation pathway debate is the role of industry and the potential for an articulation pathway to meet, at least to some degree, the workforce requirements and skills shortages of the industry. The IACT project is exploring not only the level of connectivity that currently exists between industry and the education and training sectors for the purpose of the development of articulation and credit transfer pathways, but also how industry determines its role.

An 'industry-determined' articulation pathway model involves consulting with industry to gather their views on what articulation pathway model/s would assist their industry in meeting their current and anticipated workforce requirements, before consulting with education and training providers. Once the workforce requirements of the industry have been firmly established, interested education and training providers develop solutions to meet this industry need. The research is investigating what factors and processes are crucial to the development of 'industry-determined' pathway models. It is also testing whether these factors can be used as a model of engagement between industry, Vocational Education and Training (VET) and Higher Education (HE) leading to the development of articulation pathways that can be duplicated by these three sectors in a range of industry areas. The study is significant because, in this model, industry is not only participating in the process as an equal partner but, for the first time, is in a prominent negotiating role from the outset of the articulation pathway development journey.

The project commenced in May 2009 and will conclude in May 2011. As such it is approximately half completed at this stage. This report describes and discusses the research results to date, but the authors wish to point out that it is not complete and the findings are tentative. More information about the project can be found at [www.usq.edu.au/iactproject](http://www.usq.edu.au/iactproject).

## Introduction

Many recent studies on workforce planning in Australia predict a serious shortfall in qualified employees in the next few years which will have, and is already having, a negative impact on the growth potential of Australian industry (Australian Industry Group, 2006, ElectroComms and Energy Utilities Industry Skills Council, 2010, Skills Australia, 2010, Training and Skills Commission, 2009, Australian Industry Group, 2007, Australian Industry Group and Deloitte, 2008). The Council of Australian Governments (COAG) in 2008 set the following targets for education and training:

- Halving the proportion of Australians aged 20-64 without qualifications at Certificate 3 level or above between 2009 and 2020; and
- Doubling the number of higher [VET] qualification completions (Diploma and Advanced Diploma) between 2009 and 2020 (Council of Australian Governments, 2008).

Access Economics (2009), however, estimates that an additional 3.6 million qualifications will be required nationally by 2020 to meet the COAG target. Middle level skills in the technical, paraprofessional and trade areas are in high demand relative to supply (Australian Industry Group, 2006). This situation is compounded by poor education completion rates: in HE the completion rate is about 72% nationally, but in VET it is only approximately 20-30% (Training and Skills Commission, 2009).

Australian Industry Group (2006) point out that employees are one of a firm's most important competitive advantages, and that building their employees' skill base is a key element of productivity growth strategies. In a 2005 survey of employers, nonetheless, 'inability to secure skilled staff' was cited as the main barrier to company success (Australian Industry Group, 2006).

The characteristics of 'world class' companies are described as follows:

- The workforce is more highly skilled;
- There is a systematic approach to skills assessment and planning;
- A wide range of recruitment and learning options are employed; and
- There is a close relationship with education and training providers (Australian Industry Group, 2006).

Achieving 'world class' companies is difficult, however, and requires a partnership between companies, education providers and (ideally) government. Consultations with Industry (Training and Skills Commission, 2009) indicate that Australian employers are concerned about the following issues:

- The quality and relevance of training provided in preparing individuals for specific jobs;
- The lack of responsiveness of education and training suppliers to industry needs;
- The need for an improved interface between industry and providers across all sectors including school, VET and HE;
- The need for better linkages between the education and training sectors;
- Lack of work placement opportunities for students;
- The need for increased collaboration between stakeholders in developing workforce planning solutions;

- The need for clearly articulated career paths and career advice for school-leavers and others looking for career information as a basis for making education and training choices.

A key area of the connectivity essential to the success of an articulation pathway is the role of industry and the potential for an articulation pathway to meet the workforce requirements and skills shortages of industry. The IACT project is exploring not only the level of connectivity that currently exists between industry and the education and training sectors (for the purpose of the development of articulation and credit transfer pathways) but also how industry determines its role.

There are many barriers to seamless articulation and credit transfer between VET and HE as discussed in the Literature Review of the IACT Project (Byrnes J et al., 2010a). Adding industry to the mix potentially adds an additional barrier but also adds relevance to the articulation process by putting the end point (that is, employment) into the equation.

The IACT project is using an action research approach to developing a framework for inter-institutional co-operation and communication between industry and the education and training sectors. The project seeks to improve the level of industry input into articulation pathway development, and to improve the levels of transferability and sustainability of articulation models and pathways between stakeholders. Ultimately, the project seeks to make articulation pathways easier to establish for stakeholders and more seamless for students.

Using Action Research methodology to develop an industry-determined tripartite model for articulation pathway development, the IACT project is exploring the following key topics:

- Definition and understandings of ‘industry’ in the context of articulation pathways;
- Key roles that industry can play in the development and sustainability of articulation pathways;
- The role of articulation pathways in workforce planning and building a sustainable workforce;
- The education and training sector’s level of understanding around workforce planning and development;
- Barriers and enablers to industry having a greater role in the development of articulation pathways;
- Mechanisms required to be in place to enable the sustainability of an articulation arrangement;
- Potential role of professional organisations in the endorsement, sustainability and promotion of the articulation pathways;
- Tripartite linkage and governance models.

For the purpose of this paper some commonly used terms are defined as follows:

- *Industry area* refers to a holistic grouping of like disciplines e.g. Health Industry;
- *Industry sector* refers to a specific sub-group or discipline of that industry e.g. Pathology, Pharmacy, or Psychiatry;
- *Occupation* refers to a specific occupation or job role within an industry sector e.g. Medical Scientist, Pharmacy Assistant;
- *Industry* refers to stakeholders within the industry sector who are actively and directly engaged in an occupation (that is they are either employed in or employing people in that occupation);

- *Education and training providers* refers to both the VET and HE sectors.

In accordance with this terminology, education and training organisations, professional and regulatory bodies, and workforce planning/development organisations are not considered to be ‘industry’. These organisations provide a professional service to industry and contribute significantly to the ‘industry’ as a whole, but are not industry themselves.

## Background

Traditionally the development of credit transfer arrangements and agreements have been between a single registered training organisation in the VET sector (public or private), and a university in the higher education sector. While there has been some movement toward agreements that cross organisations, such as TAFE Queensland with one university, they remain education and training provider-centred. That is, they are initiated by, and directed by, education and training providers.

Both education and training sectors have connections with industry, but for different reasons, and therefore view industry differently. While VET providers look to industry for endorsement of delivery and/or assessment regimes, on-the-job opportunities for practicing competency, or employment opportunities for graduates, HE look to professional bodies for advice, validation and accreditation of their programmes. The result is that each sector resonates with values and ultimately connects with the different types of industry organisations – each of whom may or may not represent industry needs at the occupational, workforce issues and business practice ('grass roots') level.

There is limited use of information, data, or research about national and local skills shortages, industry career pathways, future workforce planning and development, educational products that align with skills gaps and what organisations represent the workforce needs of that industry; ‘Employers also highlight their need for workers to have a mix of skills that include vocational and technical elements in addition to higher levels of critical thinking and theoretical understanding. Increasingly, career pathways will require a mix of educational backgrounds and experience’ (PhillipsKPA, 2006). PhillipsKPA (2006) states that this demand from employers for new skill mixes is a driver and catalyst for credit transfer arrangements.

During October and November of 2009, the IACT project team conducted in-depth interviews with education and training providers in both the VET and HE sectors in Queensland. The interviews drew on findings of the IACT project literature review (Byrnes J et al., 2010a), and explored attitudes that Queensland VET and HE education providers have to working across sectors, and what factors are required for cross-sectoral partnerships to be successful. Respondents were asked whether they include industry or employers in the development of articulation arrangements with HE/VET providers. Responses indicate that industry involvement in the development of *articulation arrangements* is low in both sectors (Byrnes J et al., 2010b).

The IACT project team has also conducted consultations with industry and workforce planning organisations, results of which support the conclusion that there has been limited involvement of industry and employer groups in the development of articulation arrangements to date. The consultation with industry representatives for this project supports the conclusion that the involvement of industry in curriculum development and delivery are ad hoc and at best fragmentary (Byrnes J et al., 2010b).

## **The Industry-Determined Articulation Model**

The overall aim of this model is the development of a process for tripartite agreements which includes not only new industry-determined articulation pathways, but a model of engagement, future governance and sustainability.

### **Initial Assumptions**

At the outset of the development of an ‘industry-determined’ articulation model, the IACT project had assumptions regarding the capacity of workforce planning organisations to engage with the articulation pathway development process. It was assumed that they would be in a position to be able to:

1. Provide evidence of current and future skills shortages for their industry area;
2. Map out career planning and upskilling points for their industry area (and particularly where an articulation pathway could support this);
3. Identify industry partners essential to an articulation partnership;
4. Provide advice on qualifications to target for the articulation pathway;
5. Have a working knowledge of the key education and training providers involved in the delivery of qualifications;
6. Be willing to provide advice, input, and guidance to the articulation model.

The IACT project undertook consultation with five organisations that have as their key role workforce planning and development for their industry area. The above assumptions have proven to be correct in the majority of consultations to date. In cases where this was not the case, assumption 5 above was the most lacking, indicating that in some industry areas there is a gap in connectivity between workforce planning and the qualification delivery.

### **Methodology for development of the model**

The methodology is divided into the following four key phases:

- Phase 1: Identifying an Occupation;
- Phase 2: Industry focus;
- Phase 3: Education and training focus;
- Phase 4: Tripartite agreement.

### **Phase 1: Identifying an Occupation**

The overall aim of this stage is to work through a consultation process with the intent of identifying an occupation where an ‘industry-determined’ articulation pathway would have a significant impact on their skill shortages.

For this reason, this stage has a ‘funnelling’ approach, where consultation initially is focused at the ‘whole of industry’ level, with the aim to quickly ‘funnel’ the focus down to a discrete occupation for which an articulation pathway model can be developed. Throughout these steps, criteria are applied as a way of determining which occupations have the potential for the development of an industry-determined articulation pathway. The criteria are:

- occupation identified as a skills shortage area;
- viable student demand for the identified qualification;
- existing VET and/or higher education product relating to the identified occupation;
- potential for ‘transferability’ of the proposed articulation model;
- identified career pathways and the relevant VET and higher education qualifications;

- capacity to commit resources to progressing the development of the articulation pathway;
- no industrial or regulatory issues which could hinder the development of articulation arrangements;
- key corporations/enterprises within the industry which are proactive in furthering career opportunities for their staff and which support articulation pathways;
- recognized professional organisation for the occupation which has a membership category for VET and/or higher education qualified members.

In addition, due to the time restraints, the IACT included the following additional criteria:

- a new articulation model to be negotiated and implemented within the IACT project timeframes.

### **Phase 2: Industry Focus**

It is the intent that industry is the sole focus of this phase and the education and training sector is not involved until the industry is at the stage of identifying their workforce requirements for the identified occupation.

The role for industry is to collate key industry workforce information that will assist in informing the development of an articulation pathway model for the identified occupation. The industry is considered to be in a prime position to provide the required level of information:

- scope of their occupation;
- current and future workforce planning and development needs;
- career and education pathways (including movement between the VET and higher education sectors);
- existing qualifications (VET and higher education);
- existing articulation pathways.

### **Phase 3: Education and training focus**

The aim of this phase is to provide an opportunity for the education and training sectors to problem-solve potential education and training solutions to present to the industry for their consideration. This may include:

- qualification/delivery options;
- articulation pathway model options;
- shared delivery options.

While the intent of this stage is for the focus to be solely on the education and training providers, discussions with industry also play a key role.

### **Phase 4: Tripartite agreement**

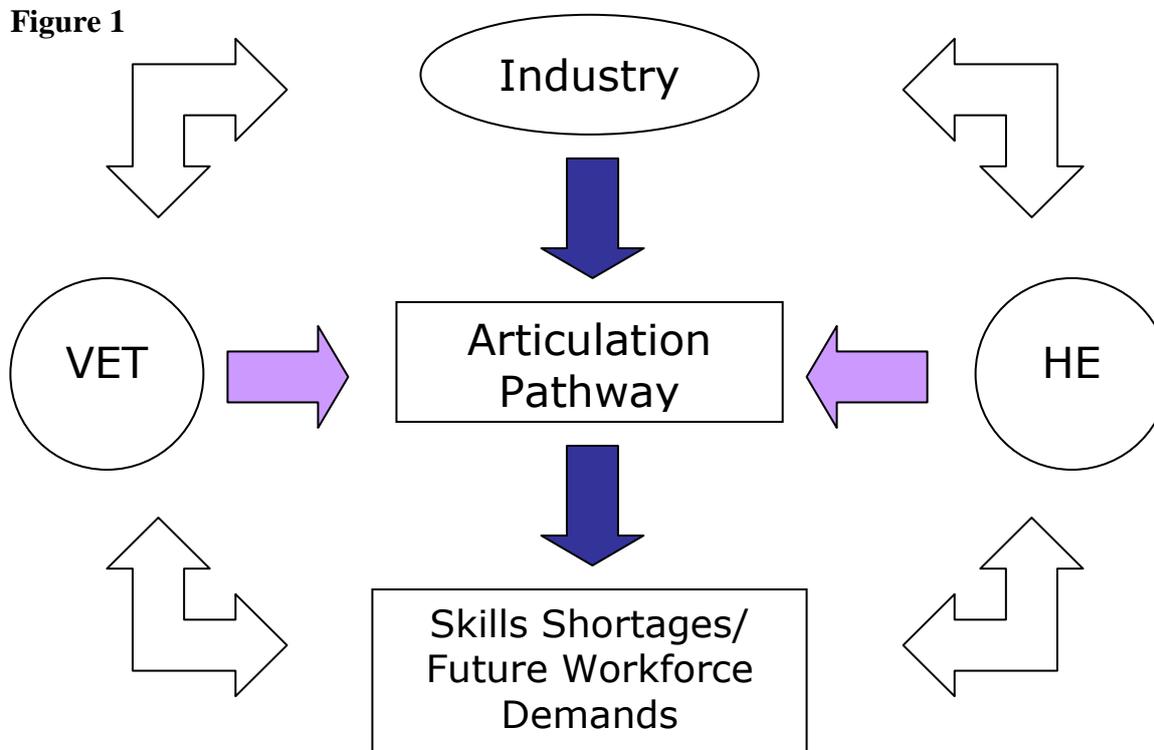
The aim is to develop a tripartite agreement between the industry sector, VET partner/s and HE partner/s and the development of an agreement which may include:

- agreed content delivery;
- shared delivery models;
- articulation pathways;
- agreed credit transfer arrangements;
- marketing and promotion strategies;
- governance and sustainability arrangements.

## The Model

The following model (Figure 1) represents the concept that – in order to address skill shortages and influence workforce planning – there are three stakeholders who are (or should be) essential partners in an articulation pathway – Industry, VET and HE.

Figure 1



## Findings to date

As previously indicated, the IACT project is part-way through the action research project and therefore the following findings are only representative of work undertaken to date in Phase 1-2 (and part of Phase 3).

### Phase 1

- Workforce planning and development organisations were the ideal first point of call to provide further advice, information, industry contacts and an overview of the industry area and the different industry sectors.
- The concept of ‘funnelling’ down to the level of an occupation (Phase 1), prior to any discussion about a pathway was essential in controlling the scope of the articulation pathway development work. The skills shortages and workforce planning requirements of an industry area are often complex, so focusing on one discrete occupation not only controls the scope of the work, but makes the negotiations with stakeholders more meaningful and relevant.
- The application of the criteria was beneficial in identifying industry areas where further discussions regarding the development of an articulation pathway was not warranted. The decision for not progressing further in some industry areas was based on the following situations:

- The complexity of the skill shortage needs at the time meant that workforce development needs emphasis and resources were focused more on immediate solutions e.g. trade training;
- Development of articulation pathways was planned as a future workforce development activity for the industry sector and outside the timeframes of the IACT project;
- There were not aspirations within the current industry workforce to obtain higher level qualifications, despite there being an industry need for higher level qualifications. This issue of ‘aspiration’ was viewed to be outside the scope of the IACT project;
- Career pathways for the industry were not detailed enough to substantiate the progression of work with regards to an articulation pathway in the identified occupation.

## **Phase 2**

- Industry demonstrated they were in a position to provide in-depth information on their current and future workforce needs and a willingness and motivation to work with the education and training sector on developing articulation pathways to meet these needs.
- This phase also highlighted that industry had limited success in engaging universities on matters relating to articulation pathways and curriculum content issues and welcomed guidance and information in this area. This indicates that in some instances education and training providers are not meeting the changing needs of industry by delivering industry-relevant and current qualifications.

## **Phase 3**

- Education and training providers did not have a comprehensive understanding of the complexity of the current and future workforce planning issues facing the industry which their qualification fed into and which their graduates enter.
- Education and training providers have demonstrated a genuine interest in the workforce needs of industry and have been proactive in developing solutions to meet the industry workforce needs. Solutions include the recognition that as individuals they are unable to provide the teaching and learning expertise required, but by collaborating with a VET/HE partner and industry the workforce needs can be met.
- The involvement of a high percentage of employers from the industry sector, including both private and public employer groups, provides an incentive for the education and training providers to put time and resources into the development of solutions for industry. Education and training is an expensive undertaking, so knowing that the solutions would potentially meet the needs of the majority of the industry provides a strong business case for the development of both new courses and articulation pathways.

Other findings to date which the IACT project will be continuing to explore in the remainder of the action research include the following:

- Industry-determined articulation pathways do have the potential to meet current and future workforce requirements for an identified occupation. Articulation pathways are viewed by the industry representatives consulted as being integral to the sustainability of their workforce;

- Industry is a willing partner in promoting the pathway both through their networks and existing workers, thus generating business for the education and training partners involved in the partnership;
- There are potential cost savings for the industry to get involved in articulation pathways as training costs to a business for a graduate without the right knowledge and skills is significant;
- Industry is very willing to participate in problem-solving and be partners, where relevant, in the development of future articulation arrangements;
- Industry value and require the knowledge and higher-level cognitive skills of university graduates. However, there is also a perceived gap in university graduates' ability to perform skill-based job roles which are also required in all professional positions. From this viewpoint, new graduates with learning from both sectors are highly valued and therefore becoming more sought after.

## Conclusions

Solving the skills shortage crisis in particular industry sectors is complex, and at times beyond the scope of the education and/or training sector. However, the existence of a link between skill shortages, the workforce planning and development needs of industry and the education and training sector delivery outcomes must be acknowledged.

While there are pockets where this acknowledgment is strong and work in this area is progressive, it appears more can be done to make the link stronger. If this is the case, who should really be talking about skills shortages? Our research indicates that it should be employers, industry organisations, and *then* VET and higher education providers.

It is not the intent of the IACT project to propose that the education and training sector is the total or sole solution to skill shortages or workforce planning and development issues that many industries are facing. Neither is the IACT project proposing that all articulation pathways should be industry-determined. However, the IACT project is challenging all key partners to start talking about skill shortages, industry needs and education solutions, with curriculum content and articulation pathways in the mix, and to observe what innovative solutions develop. The research to date suggests that stakeholders may be surprised by what new innovative models and business opportunities emerge – the only way to find out is to engage.

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