

# Relationship between Course Design, Delivery & Course Outcomes

**Dr Janelle Moy, Janelle Moy & Associates**  
**Presenter: George Campbell, Project Manager**  
**Coordinator Research, Planning, Quality & Customer Service**  
**NSW Department of Education & Training, Educational Services Divisions TAFE NSW**

## PROJECT OVERVIEW

This research project sought to improve course and module outcomes through the identification of course and module design and delivery elements considered critical to successful course and module outcomes. This study has examined both course outputs, such as high module pass rates, low module attrition rates and low module fail rates and, to a limited extent, course completion. Course outcomes investigated during the project have included student and staff satisfaction, progression to further study and employment and the achievement of personal objectives.

The project has been a complex and challenging one, involving the collaboration of many people. Completed between January and June 1999, the project involved three phases.

Phase 1 of the project focused on a review of relevant literature. A literature search was completed, using five data bases, a range of web sites and other information sources. Following examination of 65 references, a comprehensive review of the literature was completed. The literature review assisted in clarifying project objectives and has informed subsequent project phases.

Phase 2 involved analysis of statistical data and course and module descriptors. Using a common set of criteria, each of the seven TAFE NSW Educational Services Divisions (ESDs) nominated three to four courses for the project. This resulted in the selection of 25 mainstream courses, covering a diverse range of industries, qualification levels, course types, target groups and delivery modes. The report details the findings from a range of exploratory research activities and presents conclusions relevant to this phase of the project.

Phase 3 of the project focused on qualitative and quantitative research involving key stakeholders and supplementary document analysis. From the 25 courses selected for Phase 2, ESDs identified eight courses for Phase 3. Again, the courses represented a range of vocational and general education areas, qualification levels and target groups. In total, 294 informants contributed to Phase 3 as representatives of the following stakeholder groups: students; teachers; senior faculty staff; and course designers. The report also provides a series of seven course-specific case studies and provides information on the elements of course design and delivery considered critical by each of the stakeholder groups in achieving positive course outcomes. Conclusions relevant to this phase of the research are presented also.

## SUMMARY OF FINDINGS

### Introduction

The project has demonstrated the complex range of variables, and clusters of variables, which impact on course outcomes and the difficulties of attempting to correlate outcomes with particular variables. The project has focused on identifying those aspects of course design and delivery which stakeholders consider to have an impact on the achievement of positive course and module outputs and outcomes. As noted above, the project involved a diverse array of TAFE NSW courses and this has highlighted the need for design and delivery elements to be addressed within the context of industry requirements, licensing requirements, target group characteristics, qualification levels and course demand.

Findings and conclusions presented in the report are synthesised below. Recommendations, designed to assist TAFE NSW in improving course outputs and course outcomes, are not included in this paper. Three headings have been used to structure this section of the report:

- General observations and conclusions
- Improving course and module design
- Improving course and module design and delivery

### **General observations and conclusions**

This project has involved staff from a wide range of Educational Divisions and Institutes in TAFE NSW. The project has demonstrated the benefits of collaborative research which accesses a broad cross-section of expertise and insights.

While common issues and ways of initiating improvements may be identified, they need to be applied using approaches which address unique combinations of design, delivery and contextual issues. A single course design model or checklist is unlikely to address the challenges faced by TAFE NSW course designers. Significantly, the case studies reveal that TAFE NSW is already applying a range of course design and delivery strategies, in recognition of the range of factors which need to be addressed in particular suites of courses. Other course designers may be informed by these case studies, which overview approaches used to address particular challenges, challenges which remain and highlight future improvements.

The report, also provides insights on some of the difficulties encountered in using TAFE NSW statistical data for research purposes. It reinforces the importance of balancing the use of quantitative data with broader stakeholder consultation and contextual information. This is particularly important in interpreting module and course output data.

Finally, the project demonstrates the difficulty of distinguishing course design from delivery issues, particularly when obtaining input from teachers and students.

### **Improving course and module design**

During this project a list of 19 course and module design elements was developed as a result of an extensive literature review and input from the Reference Group. This project suggests that:

- all of these elements should be considered by course designers, so that successful course and module outputs and outcomes are maximised
- different elements and combinations of elements will be more critical to particular courses or suites of courses, depending on factors such as industry requirements, licensing requirements, characteristics of the target group, level of course demand and qualification level.

More detailed advice relating to specific course and module design elements is provided below.

#### *ACHIEVING COURSE OUTCOMES*

All stakeholder groups indicated that the structure and content of the course must enable course outcomes to be achieved. In particular, modules need to form a coherent course, rather than being viewed primarily as a group of discrete modules. Students and teachers also highlighted the importance of continuous improvement processes to obtain feedback from stakeholders on the extent of outcome achievement.

#### *EXIT POINTS, ARTICULATION AND CREDIT TRANSFER*

TAFE staff highlighted the need to develop suites of courses, which maximised entry and exit opportunities, rather than single, isolated courses (see, for example, case studies for the Certificate IV in Information Technology and the Diploma in Hospitality Management). TAFE staff and students also sought clear and detailed articulation information in course documents. Significantly, the item on articulation received the highest rating (59.4%) from students who participated in this study. The Tertiary Preparation Certificate (TPC) case study also demonstrates the merits of reviewing non-completions, so that all successful exit pathways are recognised and formalised.

#### *COURSE STRUCTURES*

Flexible course structures with a common core and elective strands or modules were favoured, with the exception of Certificate II in National Maritime Operations, where stakeholders felt that the six compulsory modules enabled course outcomes to be met. Course structures should not be too complex, due to difficulties this creates in marketing the course and a need to "case manage" course completions (the Electrical Technology and Electrical Engineering case study).

#### *ALIGNMENT WITH INDUSTRY COMPETENCY STANDARDS AND USE OF NATIONAL MODULES*

Students considered the alignment of vocational courses with Industry Competency Standards as critical. Similarly, statistical and document analysis indicates more successful outputs for modules based on Industry Competency Standards and national curriculum modules. In a number of the case studies, however, course designers and teachers identified difficulties in designing and delivering courses, particularly those based on national modules. Most of these difficulties appeared to result from modules having been developed in isolation from other modules and the subsequent impact on course coherence. Suggested improvements included:

- that a single reviewer, or review team, review all modules in a course or suite of courses, so that issues associated with duplication of content and inconsistencies in pre-requisites and co-requisites are resolved
- increased input from teachers and industry practitioners (as opposed to more senior industry representatives) at the design and review stages.

#### *INTEGRATION OF VOCATIONAL AND GENERIC COMPETENCIES IN COURSE DESIGNS*

While students, teachers, senior faculty members and curriculum designers generally favoured the integration of vocational and generic competencies in course designs, a number of issues were evident in translating curriculum into delivery. Teachers in some areas also identified a need to ensure that the National Communication module included in the course design is appropriate to the qualification level and relevant to the occupational outcomes the course is designed to meet. Other issues are discussed under course and module delivery.

#### *PROVISION FOR A RANGE OF DELIVERY MODES*

TAFE NSW stakeholders regarded provision for a range of delivery modes in course and module documents as essential. While statistical and document analysis indicates that this is occurring, there is a need to ensure that assessment events are relevant to a range of delivery modes. As will be shown below, this study suggests that while provision may be made in course documents for a range of delivery modes, translations into practice was not occurring to the extent sought by students and teachers.

#### *MODULE DURATION*

While the findings from statistical and document analysis suggested that shorter module duration may contribute to increased module pass rates, consultation with stakeholders indicates that "shorter is not better", educationally or administratively. TAFE staff generally preferred modules of 36 to 54 hours, to provide a longer period for the development and consolidation of knowledge and skills, prior to summative assessment. In the case of the Certificate III in Tertiary Preparation (TPC), 72 hour modules were considered critical in providing learners with opportunities to develop confidence and skills.

#### *COURSE AND MODULE ASSESSMENT*

A need to balance learning and assessment has been highlighted in the research, with stakeholders identifying a need for:

- a limited number of holistic assessment events within and across modules
- closer scrutiny of assessment criteria during module design, to facilitate integrated assessment events
- a focus on assessment advice in module descriptors and/or assessment guides.

Graded assessment: All stakeholder groups favoured the use of graded assessment, to improve student motivation, foster attitudes of excellence and meet industry expectations. In particular, the desirability of graded assessment was highlighted for:

- modules in the final stage of courses
- summative modules which demonstrate the integration of competencies from a number of modules, such as project modules
- other key modules, such as those likely to be used in employee selection processes.

Categories of assessment and maintenance of standards: Analysis of course and module statistics and documents suggests that the use of assessment, requiring a class mark or locally set and marked assessment events, improved module pass rates. While this may be the case, use of these

assessment methods has resulted in issues of consistency of standards and equity within and across delivery sites. In some areas, increased use of statewide assessments or item banks was favoured (see, for example the Real Estate, Horse Industry Practices and Electrical Engineering and Electrical Technology case studies). However, this issue and a number of associated issues may be addressed by exploring other approaches. For example, the TPC assessment and verification process enables consistent standards to be addressed while also assisting in addressing professional development needs, development, performance measurement and quality improvement processes.

#### *INTEGRATION OF SUPPORT SYSTEMS INTO THE COURSE DESIGN TO MAXIMISE MODULE AND COURSE COMPLETIONS*

All but one of the 25 courses analysed included Tutorial Support in the course structure and 12 included additional support mechanisms, such as Technical Tutorial Support and provision of course co-ordination hours. Similarly, stakeholders involved with courses in Information Technology, Electrical Technology and Tertiary Preparation highlighted the importance of support mechanisms in achieving course outcomes.

Completion of the case studies in also revealed a recurrent need for an initial module or orientation program for learners without recent experience of TAFE, learning, and/or competency based assessment. This need has been addressed through the Professional Development module in the Diploma of Hospitality Management and, to some extent, through Language and Learning Skills A in the TPC course. Local programs, involving delivery sections and counselling units, had been offered at some colleges. This project suggests that there is a widespread need for course designers to address the needs of recent school leavers and mature age learners for an orientation program covering:

- an introduction to the course and course assessment
- learning styles and learning management (learning to learn, time management, study skills, creating study groups and finding study partners)
- access to support services.

Course designers need to assess the needs of their target group and ensure that appropriate support systems are integrated into course designs. This may involve the integration of support modules, or the provision of advice on options which may be implemented by colleges, if required.

#### *EXPOSURE TO WORK AND EMPLOYMENT EXPERIENCES*

Findings from this research indicate that vocational courses delivered by TAFE NSW must maximise learner opportunities for relevant exposure to work and employment experiences, through concurrent employment, work placements, work based projects and fieldwork. Where courses do not complement relevant concurrent employment, student motivation, ability to grasp and apply theoretical concepts, satisfaction and employment prospects appear to be enhanced by the provision of work experience and work based projects. Simulations assist in achieving some, but not all, of these outcomes. Significantly, in courses such as the Diploma of Hospitality Management, Certificate IV in Information Technology and Certificate III in Horse Industry Practice, the inclusion of work experience and work projects appears closely linked with maintaining the industry currency of teachers and the quality of partnership arrangements with industry.

#### *COURSE ENTRY AND SELECTION REQUIREMENTS*

Clear specification and application of entry requirements, together with selection requirements for high demand courses, were highlighted as significant by TAFE staff. In particular, those associated with courses in Information Technology, Hospitality Management and Electrical Engineering suggested that the selection requirements for those courses contributed to very successful course outcomes. Staff involved with a number of courses, including Hospitality Management and TPC, also highlighted the importance of multiple entry pathways and the value of providing students with advice on bridging courses and other options so that they might achieve the outcomes they sought by the most appropriate pathway.

### **Course and module delivery elements**

The findings of this project are broadly consistent with the findings of previous projects, as stakeholders:

- considered course delivery factors as more critical than course design in the achievement of course outcomes
- rated a larger number of delivery elements as critical and a smaller number as unimportant, than for course design elements
- repeatedly and consistently highlighted the pivotal role of skilful, flexible and dedicated teachers in the achievement of successful course outcomes.

For any course, or suite of courses some delivery elements, or clusters of elements, will be more important than others. Findings relating to particular delivery elements are provided below.

#### *COURSE PROVISION USING A RANGE OF DELIVERY OPTIONS*

Students and staff highlighted a need for increased provision of delivery which focused on flexible, learner centred approaches. There is a need for TAFE NSW to identify and resource priority areas for the establishment of mixed mode delivery, targeting areas which will improve student satisfaction, provision of elective modules and course completion. Repeatedly, staff in colleges highlighted the incongruence between the rhetoric to provide flexible, innovative delivery and the limitations and hindrances of TAFE administrative policies and information systems. This project suggests that, in a number of areas where innovative, learner centred practices have been implemented for the benefit of students, staff are actually operating outside, or pushing the limits of TAFE NSW policies and procedures. While staff feel immense satisfaction as a result of customer focused delivery, they also feel vulnerable and frustrated as a result of these inconsistencies. Increased flexibility in delivery would increase learner access to elective modules, which has been a significant issue in a number of customer satisfaction studies and would assist in making mixed mode delivery a mainstream, rather than a peripheral delivery mode.

#### *COURSE DEVELOPMENT, RE-ACCREDITATION AND IMPLEMENTATION PROCESSES*

Teachers and senior faculty staff sought improvements in ESD course implementation practices. They highlighted the need for increased consultation during course development and review processes and improved information dissemination on proposed developments. Timeframes for the implementation of new courses were often considered unreasonable. Both senior faculty staff and teachers requested adequate notice, to enable planning and resource allocation for professional development and course implementation. Complete, quality documentation and support resources were also sought prior to implementation.

#### *ACCESS TO QUALITY TEACHING, LEARNING AND ASSESSMENT RESOURCES*

Access to resources was rated highly. In a number of case studies staff commented on the apparent tendency for national and state developed module resources to be repetitive and inconsistent, suggesting that individuals or teams had developed resources independently of those developing material for other modules. Some resources are also tailored to particular delivery modes. There is a need to ensure that resource development processes result in user friendly products, relevant to a range of delivery modes. Where appropriate, resources should be provided on disk, to enable local customisation and updating.

#### *INDUSTRY CURRENCY OF TEACHERS*

Issues associated with the industry currency of teachers was raised. Informants felt that improved opportunities for return to industry and partnerships with industry would improve course outcomes.

#### *AVAILABILITY OF HUMAN RESOURCE REQUIREMENTS*

The importance of technical support staff in achieving successful course outcomes was noted in the Information Technology and Electrical Engineering/Technology case studies, together with the difficulties of recruiting appropriately qualified Information Technology staff. Senior college staff also highlighted the need to ensure that human resource requirements were specified realistically and consistently in course and module descriptors.

#### *INTEGRATED DELIVERY OF VOCATIONAL AND GENERIC COMPETENCIES*

The case studies suggest that generic competencies are most successfully integrated when generic modules, such as Communication modules and Management modules, are contextualised and taught as part of an integrated cluster of modules, as students consider the modules more relevant and practical. The findings of this study indicate a need for strategies that encourage vocational teachers to obtain qualifications or recognition enabling them to deliver generic modules and for team based delivery of clusters of modules. This study has also identified a need for customisation of module

length for mature age learners and increased mixed mode delivery of National Communication modules, facilitated by more flexible allocation of hours for part-time Communication teachers.

#### *APPLICATION OF QUALITY IMPROVEMENT, BENCHMARKING AND MODERATION PRACTICES FOR COURSE DELIVERY TEAMS*

Most of the delivery sites had piloted, and where successful, implemented innovative delivery approaches and several monitored customer satisfaction. In focus group sessions teachers and senior faculty staff raised concerns about the lack of opportunities for networking, benchmarking and moderation. As a result staff frequently expressed concerns about the lack of consistent TAFE-wide course assessment standards. Frequently, students also commented on inconsistent assessment standards for modules delivered to different classes, by different teachers, at single locations. As noted earlier, some staff members favoured a return to statewide assessments, while others favoured the use of other approaches. However, all agreed that there was a need to ensure equity and consistency of outcomes across delivery sites if TAFE NSW is to be viewed as a statewide provider of VET, rather than a loosely affiliated network of delivery sites.

#### *IMPROVING COURSE AND MODULE DOCUMENTATION*

Senior faculty staff and curriculum designers considered course and module documentation critical, particularly the supplementary components developed for TAFE NSW. However, teachers frequently considered the descriptors "repetitive", "cumbersome" and "unmarketable". Delivery sections frequently re-wrote and summarised course documentation to make it "user friendly". Of particular concern is that a number of full-time and part-time teachers considered course and module documentation "unimportant" or had no opinion on it at all. Recommendations for improving course and module documentation included:

- a reduction in the duplication of information. When headings in different parts of course and module descriptors are identical, TAFE NSW staff expect the supplementary sections to provide more detailed, insightful information which supports delivery and assessment practices and explains the underpinning course philosophy, rather than repeating information provided in a previous section
- a review of the course and module descriptors to ensure cohesion and consistency and minimal unnecessary overlap in content and assessment events
- increased involvement of practising teachers in review processes
- providing detailed resource schedules in the implementation advice of the course descriptor, especially for courses which are resource intensive and costly to deliver
- increased attention to implementation advice of the module descriptor which provides information on advanced standings and standard exemptions, as poor or incomplete attention to this area results in an increased administrative workload for senior faculty staff. This issue is particularly significant when courses are revised several times in a short period and transition arrangements become complex
- ensuring that the specification of pre-requisites and co-requisites is realistic within the course structure and suggested enrolment options
- ensuring that human resource requirements are realistic and consistent across modules.

Senior faculty staff also suggested that standardised course and module summary information should be developed as part of the implementation package, to minimise the duplication of effort across TAFE NSW and assist with course marketing.

Senior faculty staff would also value the provision of timely summary information which highlights course and module changes and overviews the nature of those changes.