
3. LITERATURE REVIEW

Summary of Key Points:

New pressures are being placed on institutions and their leaders to be more accountable. There is greater importance attached to the data collections provided by educational institutions for central analysis and comparison. These collections can provide a knowledge base in order that senior managers and the responsible authorities can understand their organisations and in particular improve their understanding regarding the input-output relationships. But does the centralised model really work? Is a central authority going to be able to decipher and act on all the data provided? Will their decisions be sufficiently informed through the data, adequately justified and properly accounted for?

The modern educational decision-maker lives in a complex environment. Data modelling simplifies this environment to such an extent that there is a perception that information systems built to such standards provide little help to the educational manager. The data provided are often not sufficiently meaningful and in many cases obscure the true nature of the organisation.

Educational institutions generally have missions which cover a broad range of activities with diverse, and often conflicting, values e.g., preservation and transmission of knowledge. In a competitive funding environment, which value is more important? In a very extensive and diverse training enterprise, there is little consistency in the way these values are prioritised, yet, through the national data collection, organisations are evaluated and compared on measures which assume a degree of commonality across all institutions. The key performance measures established through the AVETMISS collection are in fact partial measures, are not common to all institutions and do not reveal the true nature and extent of the educational enterprise.

Despite the possibilities emerging for a new emphasis on outcomes-based reporting, the AVETMISS performance measurement programme is still aimed primarily at activity-level measures. In many respects, the rhetoric and actions used by the authorities reveal an underlying conflict between operational models which are at times both centralised and decentralised as they "administer" the vocational education and training system in Western Australia. There are many questions which require further clarification for those engaged in publicly funded vocational education and training activity, which relate to the administration of the national training agenda at the state level and the extent to which the AVETMISS data reported by institutions engaged in TAFE-level training can be used to assist ANTA evaluate progress towards its stated objectives.

3.1 A NEW APPROACH TO INSTITUTIONAL MANAGEMENT

The 1980s and early 1990s will be remembered by at least some tertiary institutions as a decade and a half of the most difficult and troubled times in their institutional history. During this period, these large and basically conservative organisations were subjected to forces for change of a magnitude and diversity unparalleled in their past (Pennington, 1991). The more significant of these forces have been the reforms of the Hawke Government which aimed to improve organisational effectiveness, resource efficiency and accountability (see Hughes, 1995), resulting in institutions during the 1990s recovering from the effects of

- (a) significantly increasing in size as smaller institutions amalgamated (consequently for these institutions, administrative and academic structures were required to deal with property, staff and students in numbers which exceeded the bounds for which the existing systems had been designed to accommodate);

- (b) managing multicampus networks (the difficulty of such an enterprise is discussed by Meek, 1992);
- (c) adopting new corporate identities as former organisational cultures merged (see Smith, 1992);
- (d) diversifying and improving a range of service functions as systems became more 'client centered';
- (e) infusing new sub-units into the organisational structure with the introduction of full fee-paying overseas students, equal opportunity officers and occupational health and safety procedures;
- (f) administering a 'user pays' system of higher education (the Higher Education Contribution Scheme); and
- (g) participating in a series of quality reviews (see Warren Piper, 1993).

There is evidence to suggest that the pressures on educational institutions will continue with relentless and increasing intensity. In June 1995, the Commonwealth Minister for Employment, Education and Training announced a review of the higher education system with the objective of developing excellence in managing and being accountable for the resources available to the sector. The review reported that, although management had improved in recent years, it was evident that the pressures on education will continue to force institutions to deal with change and manage the difficult task of refining and probably reformulating their missions (Higher Education Management Review Committee, 1995). Such pressures will include

- continuing demands from government and the community for more accountability and better performance;

- more direct competition with other educational providers, professional bodies, private organisations and workplace-based programmes;
- the expectation of more self-determination and flexibility in the learning environment;
- the end of assured government funded growth; and
- a teaching and learning environment which is rapidly being reshaped by new information technology and communications.

3.2 RESPONDING TO CHANGE

An essential task of modern management is to deal with these forces for change which have been acting consistently on the tertiary education sector since the 1960s, placing significant new demands on the organisational structures of these institutions. Hughes (1989: p20) quotes Mosher in 1978, who

.... mentioned a number of major social changes which significantly added to the complexity of the role of professional leadership. He drew attention particularly to the erosion of the line conventionally drawn between the roles of the professional expert and the politician acting as the people's representative, which he coupled with a growing demand for public involvement in making and executing domestic policy. Other significant factors, he suggested, were the greater concern within society for equal rights and opportunities, wherever disadvantage could be perceived, and the growing strength and militancy of unions in the public service, including those of the professionals themselves.

In the past, there appears to have been a general belief that the planning systems of universities have not been adequate to cope with these new demands.

Tolhurst (1985: p47) reports on the findings of the Jarrat Committee in the United Kingdom who concluded that, with respect to strategic and long term planning,

- objectives and aims of universities were defined only in very broad terms;
- long term planning was largely ignored;
- there were no corporate strategic plans which were regularly reviewed
- there was no evidence of a thorough consideration of options and of means to arrive at objectives;
- there was a reluctance to set priorities and even to discuss openly academic strengths and weaknesses.

In the early 1970s in Australia, it was recognised that there was a considerable mismatch between the educational service provided and that which was being demanded by students, teachers, employers, parents and communities who were beginning to expect new and different things from education (Emery, 1973). Emery proposed strategic planning within these affected organisations of a more disorderly, more participative and more decentralised style than what was currently the practice, drawing a distinction between the satisficing style of planning - to seek a statement of ends that will be as uncontroversial as possible and hence will be unlikely to result in dissatisfied parties engaging in their own counter-planning - and the optimising style of planning which is designed to be innovative in order to optimise outcomes.

Strategic innovations are going to require strategic planning. Only by considering whole sets of inter-related decisions can we expect to induce the required pattern of pressures and inducements to change over extended institutions and long periods of time The idea that will be pursued in this paper is that one of the critical innovations we need is in planning itself. (Emery, 1973: p244)

Has the education sector responded to this suggestion? Is there evidence of a more systematic and informed approach to management than was perceived to be the case a decade or more ago? The fact that the Commonwealth Government, in 1995,

commissioned a review of management in higher education would indicate the educational sector is still perceived to be in need of some assistance in managing the significant resources at its disposal. It is quite tenable that the shape of the post-secondary education sector, having undergone considerable change in the latter part of the twentieth century, will change even further as education is required to respond to social changes, changes in industry and changes in the skills base of the workforce in the early parts of the twenty-first century.

3.3 CHANGE MANAGEMENT

Theories regarding policy development, planning and the management of change are not new to the education sector. There is in fact a growing quantity of literature which has been circulating within the educational sector now for some time relating to the management of change specific to educational institutions. As far back as the 1960s, Bennis (1966) maintained that planned change should be

- problem centered;
- emphasise improvement and optimisation of performance;
- rely on empirical evidence; and
- rely on valid communication with clients.

This ideological position has not changed in the intervening period. Over the last decade and a half, change has been most evident in the higher education sector. It would appear through the published literature that, despite the availability of adequate and reliable data, and an awareness of the benefits of adopting an empirical approach to planning educational change, in this sector the Commonwealth has in many instances been prepared to make one-sided appraisals of the situation to fit in with

prior Ministerial decisions (Williams, 1988). There is a belief within the literature that Commonwealth Government's "track record" on policy development is that

- (a) it has not been problem centred i.e., although quantities of literature are devoted to a discussion of the problems perceived within the education sector, the connection between the solution proposed and the problem is not always made obvious;
- (b) it has not relied on empirical evidence; and
- (c) it has not been ably communicated to its clients.

The Government has been criticised on the basis of the empirical validity of the arguments it puts forward. Meek and Goedegebuure (1989) argue that 'economic rationalisation' is behind many of the changes in the relationships between governments and higher education institutions. By increasing the competitiveness between institutions, market forces, rather than government control, will encourage institutions to be more cost effective and better managed. Despite an abundance of data available from this sector, there appears to be a lack (and in fact, an ignorance) of empirical evidence to add credibility and cohesion to Government policy. For example,

- (a) Credit Transfer: Williams (1988) cites evidence that the effect on the graduate population would be small.

It is important to improve credit transfer arrangements even though studies such as WAPSEC's Opportunities for Transfer from TAFE to Degree Courses do not indicate that this would lead to a considerable increase in the graduate population. There is more to be hoped for from increases in completion rates in secondary schools. (Williams, 1988: p147)

- (b) Education vs Training: Gilbert (1991) asserts that the authors of the Finn Report have misunderstood the essential distinction between 'education' and 'training'. Jones (in Nolan, 1989), in contrast with the assumptions of the Finn Report, believes that in the future there will need to be a reduced emphasis on vocational training (to be replaced by a more general education). He asserts that

..... the paradox between demand for higher skills and more specialisation will need to be solved and there will be less correlation between specific vocational training and actual work experience. (Nolan, 1989: p62)

- (c) Institutional Amalgamations: Empirical evidence gathered regarding institutional amalgamations would not support the argument that institutional amalgamations would increased the diversity of institutions, make cost savings or greatly benefit the students (Williams, 1988; Pennington, 1991). Williams (1988) in particular, has this to say:

The case made in the Green and White papers for smaller number of larger institutions, whether achieved through amalgamations, affiliations or associations, whether in adjoining or far-apart sites, is so weak that the most charitable explanation is that it was merely an attempt to rationalise a political decision. (Williams, 1988: p148)

Trow (1992) questions whether there is any evidence to support the popular belief within Government circles that there is a link between institutional size and academic quality. He further asks whether, after a new policy has been put in place, there is any follow-up analysis to see if the outcomes coincide with the intention of the policy.

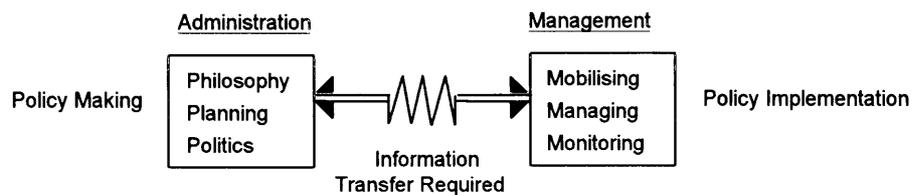
Currently, the British Government speaks somewhat vaguely of moving toward increased enrolments in higher education if it is not to drastically affect quality. In the absence of solid data and a tradition of analysis which links resources to educational goals, aims and processes ... academics discuss issues on a relatively abstract plane of principle and policy ... (Trow, 1992: p9)

Meyer and Rowan (1988) have used the term "loosely coupled" to describe training systems which lack close internal coordination. By this, they mean that

.... structure is disconnected from technical (work) activity and activity is disconnected from its effects. (Meyer and Rowan, 1988: p87)

They point out that these systems make the assumption that what is going on at the activity level makes sense and conforms to rules, but that this activity is rarely inspected to discover inconsistencies and assume responsibility for the service provided (see Figure 3-1). Large sums of money are thus allocated to education in a great act of "ritual faith". More specific and meaningful descriptions of the entire process of education than has in the past been available, are now required. Inputs, process variables and the outputs of the educational curriculum need to be seen as related parts of a whole in order to achieve new insights and understandings of how the contributions and activities of education may be shaped, modified, re-directed or improved through intelligent decision-making and informed allocation of resources (Tasmanian Government, 1993).

Figure 3-1
Integrated Information Requirements



3.4 PUBLIC SECTOR ADMINISTRATION

Hughes (1995) maintains that in the past decade in Australia, the traditional model of public sector administration has changed to a new form of public sector management which emphasises the achievement of pre-determined levels of performance. The intention is to remove the traditional emphasis on fixed and bureaucratic structures which evade responsibility and are unresponsive to market influences. In this new model, agencies are expected to develop indicators of performance that go some way

towards measuring the progress that the organisation has made towards achieving declared objectives.

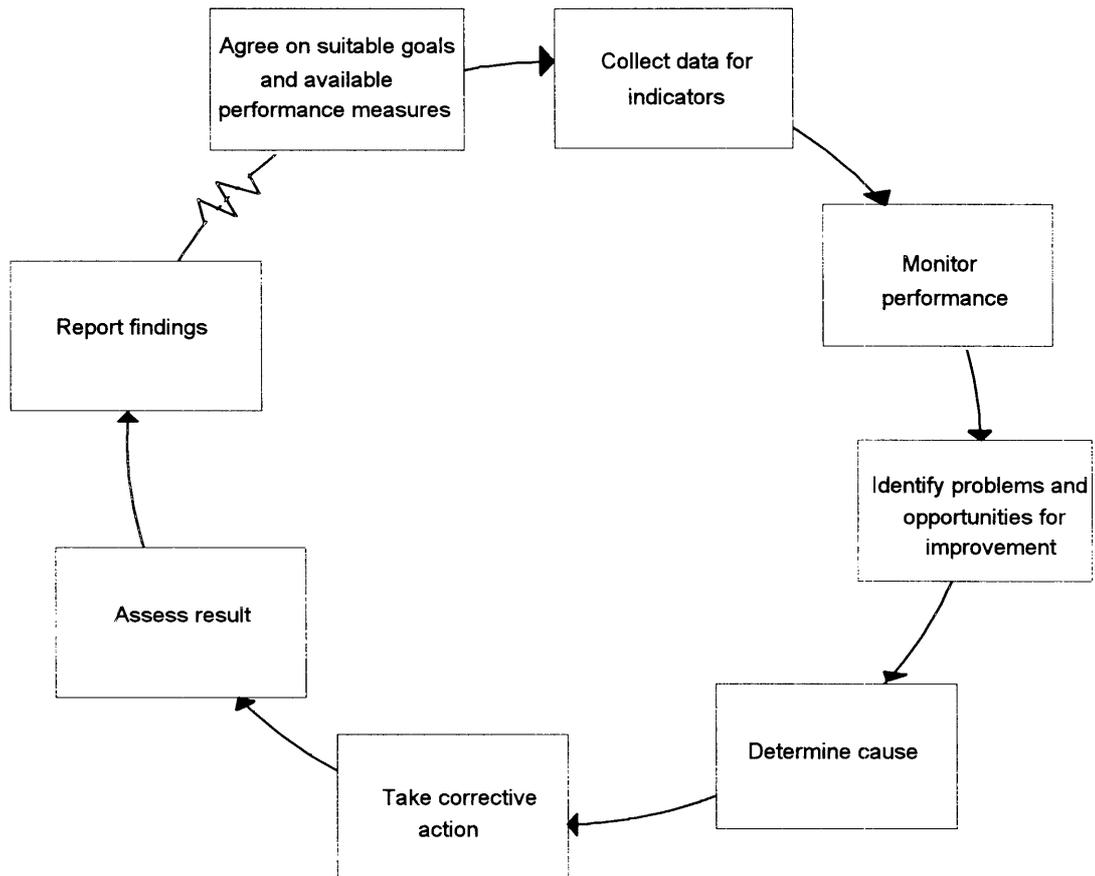
Altering the focus of the organisations from inputs to outputs has several linked steps - determining strategy and setting objectives, devising programs to meet objectives, setting structure and funding by program, measuring performance and evaluating achievements. The steps follow each other in logical progression (Hughes, 1995: p16)

Performance management is used by governments as a systematic process of aligning the needs and expectations of individual departments with the larger priorities of the State, and to ensure excellence in services provided. The components include

- securing agreement on performance outcomes;
- securing agreement on performance measures;
- determining the degree to which standards are to be met; and
- introducing changes based on information supplied by measurement, with an aim towards improvement.

The traditional outcomes-improvement cycle consists of a self-evident series of activities, each of which are fundamental and integrated with the performance management process (see Figure 3-2).

Figure 3-2
Performance Evaluation Cycle

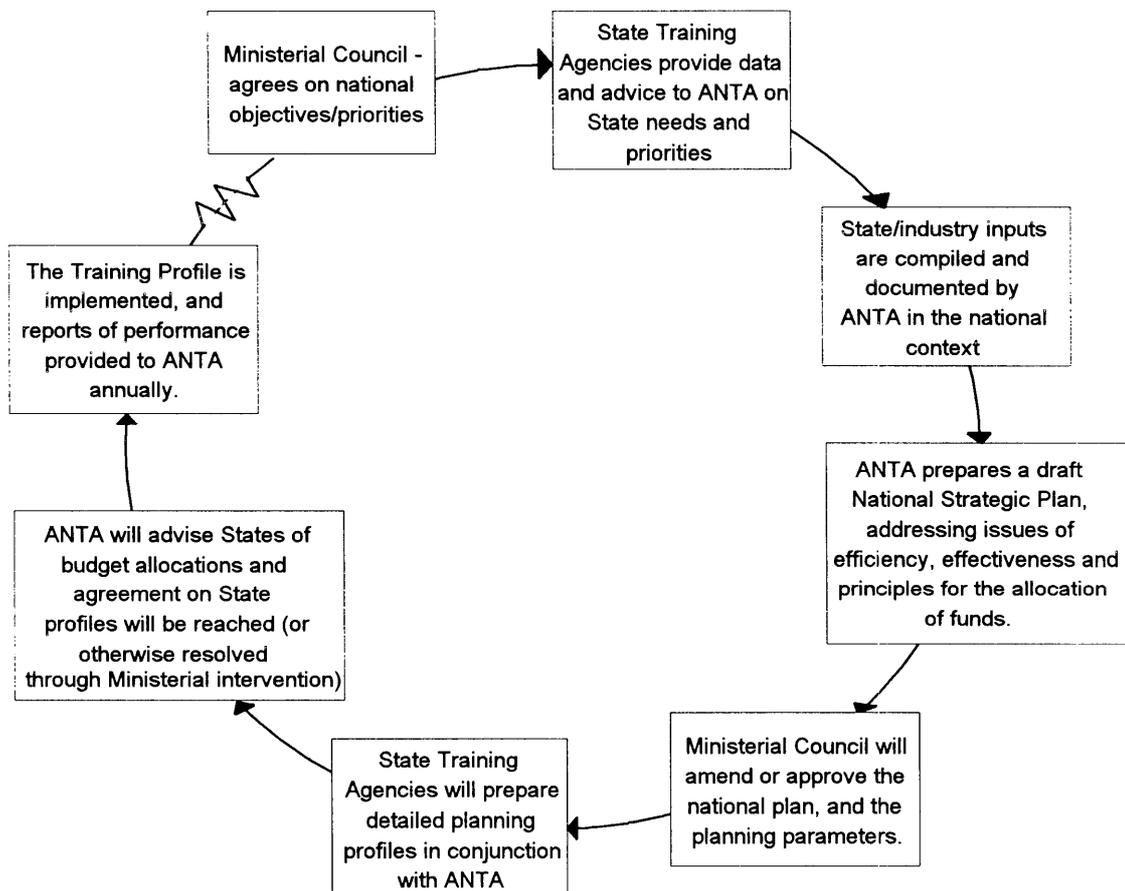


In recent years, this model has been applied to the education sector.

Performance appraisal in higher education has become a matter of increasing importance over the past twenty years or so not only in Australia but throughout the developed world. The trend in Australia derives mainly from pressures for expansion of higher education institutions and systems together with associated funding constraints. Increased participation and more flexible entry provisions have combined to make greater demands on the quality of teaching ... At the same time general economic constraints have progressively reduced the time and resources available to adequately meet these increasing demands. (DEET, 1991: p1)

The Commonwealth Government, through the ANTA Act (1992), has incorporated a performance management cycle as an integral part of its larger planning and resource utilisation cycle. The Act establishes a State Training Agency in each State with responsibility for managing all vocational education and training activity within its boundaries (see Chapter 1 "National VET Decision-Making Bodies") and requires that goals to be set, resources to be committed for the purpose of achieving these goals, and committed resources to be expended to achieve these goals across all activities in all states. A performance management cycle shown in Figure 3-3 has been established.

Figure 3-3
ANTA Decision Making Processes



(ANTA, 1992: pp23-24)

3.5 PERFORMANCE MONITORING

The evaluation of performance information relating to outcomes is seen by governments as the means by which public sector agencies can be monitored and held accountable for the achievement of agreed objectives. It can also be a tool to improve outcomes and make processes more efficient and effective (Bartos, 1995). Effective performance monitoring requires clarity in the statement of the institution's objectives and progressive improvement over time, ensuring that feedback and evaluation are taken into account in the decision-making processes, along with discernment in gathering the information (Bartos, 1995).

In a performance management model, institutions are expected to develop key performance indicators that will validate progress towards stated objectives. These indicators consist of statistically valid information, and provide a benchmark for measuring trends over time or differences between institutions at a given point in time. They should be easily interpreted and inherently meaningful. Hattie *et al* (1991: p15) advocate the following definition of performance indicators:

Performance indicators are comparative measures which allow you to say that a certain level of activity is more or less (better or worse) than another (from Franklin JJ, 1988. Performance Indicators in Education and the Participatory Approach).

Performance indicators, properly defined and properly interpreted, can play a useful role in the determination of policy, the management of an institution and the optimisation of educational quality. A major problem with the practical application of these indicators is to focus on absolute measurements and to ignore improvement aspects.

In the absence of absolute frames of reference, higher education has no choice but to rely on relative standards to some extent. The situation is in some respects analogous to that in the cosmos, where temporal and spatial location can be expressed only in relational terms. (Brinkman and Krakower, 1983:p6)

Hattie *et al* (1991) report that research efforts and resources are being channelled into improving the use of performance indicators and refining procedures for linking funding and resource allocation to agreed outcomes. Developments in the use of performance indicators include extending their range (to include quality) and objectivity; and improving procedures for measuring, weighting and combining indicators. Have institutions functioned well? Have they done the right thing? To answer these questions, one must not only apply the more traditional tests of legitimacy and efficiency, but also assess the performance and standards obtained, where possible, in the context of the individual institution's own objectives and ambitions (Goedegebuure *et al* 1990).

3.6 GOALS IN THE USE OF PERFORMANCE INDICATORS

Performance indicators can be used to monitor progress towards objectives. Through their use as a management tool to monitor feedback on performance activity by decision-makers who are prepared to act on this information, it is possible to optimise the achievement of stated goals such as

- improving public accountability of educational institutions;
- improving the diversity of educational institutions in Australia;
- enhancing the quality of teaching;
- broadening of access in education to disadvantaged groups in the community;
- encouraging collaboration between higher education providers and with industry;

- increasing efficiency (including the use of information technology and new communications to improve efficiency and effectiveness of educational processes); and
- reducing waste, providing value for money and maximising benefit.

In establishing the use of a performance indicator, it must be determined however that the object is measurable, accurate and complete data is available, the indicator will measure the right things, and the measurement scale is understood by all.

Performance indicators can be effectively used for management purposes provided also that the indicators become part of the system (i.e., as opposed to "driving" the system); that the evaluation enhances (or at least, does not detract from) the activity it endeavours to measure; and the measures are not used to punish those who try to be innovative or different from the norm.

Performance indicators which supply basic information regarding the operation, function and performance of an educational institution are fundamental to many quality initiatives fast becoming a feature of the educational landscape. The selection of suitable indicators of performance is obviously critical to the management process. However, what aspects of educational and institutional activity are most relevant with respect to accountability measures? Are they similar for all institutions? How should these be reported? Are our information systems capable of providing the level of integrated performance measures required by planners and managers of educational activity? These are questions of concern to many educational institutions as they adapt to new accountability measures and formula-driven resource allocation models. For the large part, these questions remain unanswered.

Sizer (1982, p38) introduces a note of caution when selecting performance measures.

While it may not prove possible to agree on objectives, measure outcomes and develop performance indicators for an institution as a whole, it often proves possible to do so for parts of the organisation: i.e., to develop performance indicators that relate to physical and monetary inputs, to physical and monetary outputs and outcomes, and to build these into the planning and recording system. However, do those who develop or employ such partial or performance indicators remember that optimising the paths does not necessarily optimise the whole?

Traditional process measures of institutional performance, such as staff/student ratios and cost per full-time equivalent member of staff, are in fact partial measures and do not substantiate progress towards achieving objectives. Furthermore, Sizer (1982) reports that there is a danger that using short-term input indicators of performance might result in the loss of long-term measures of effectiveness and efficiency of institutions i.e., their contributions to the needs of society.

Perhaps too much can be claimed for the use of performance indicators. Rather than being performance measures, they are really indicators of performance, which are simply pointers to good or bad performance, and do not try to measure it precisely. (Hughes, 1995: p17)

Wyatt (1995) questions whether, given the widespread investment in performance measurement, anything beneficial has been achieved as a result.

... there appear to be few published evaluations of the effectiveness of performance indicators in terms of their impact on decision making, particularly in the education sector. Kaagan and Coley (1989) provide a strong critique of state education indicator systems in the US up to the end of the 1980s - concluding that indicator results were being used prematurely to hold local schools accountable; that there was insufficient investment to ensure high-quality measurement of the variables that became part of the state indicator system; and that there was a reluctance to understand the indicators, that is to postulate a relationship between inputs and outcomes for the purpose of recommending policy action. Wyatt (1995, p157)

Wyatt (1995) extends this argument to conclude that, in the public sector generally, most reviews of performance indicator systems have ignored the key issue of their impact on decision making.

Botsman (1993) and Guthrie (1993) have sought to explain this lack of success in using performance indicators. They argue that it is the conceptual basis of the performance indicator movement that is at fault ... too much attention has been concentrated on indicators as concrete entities in themselves, and too little emphasis given to the big picture, that is, the role of indicators as information systems ... As Boston (1992) noted, schools are data rich but information poor. Wyatt (1995, p157)

3.7 QUALITY IMPROVEMENT THROUGH PERFORMANCE MONITORING

Programme management models assume that an outcomes-improvement cycle will be established. Frazer (1992, p9) suggests that the 1990s may become known as ‘the decade of quality’, with terms such as ‘quality control’, ‘quality assurance’, ‘quality circles’ and ‘total quality management’ on most institutional agendas, and makes a distinction between quality control systems and quality assurance. Quality control systems require that institutions are able to check whether the raw materials it uses, the products it makes or the services it provides reach minimum (pre-determined) standards. Quality assurance goes one step further and requires that the institution functions as a self-critical community, with each member contributing to and striving for continued improvement.

Cullen (1992, p5) discusses two models for achieving quality outcomes in educational management. Although both models require institutions to be accountable, they differ in their approach towards reporting structures which are traditional, centralised and hierarchical, as opposed to those which are decentralised, flexible and differentiated (see Figure 3-4).

Figure 3-4
Common Educational Dichotomies

Centralised Systems	vs	Decentralised Systems
1. Inspection, reporting		improvement, planned change
2. Quantitative, centralised performance indicators		vs qualitative locally determined facts and opinions
3. Governments needs and priorities		vs institution's needs and goals
4. External inspection of facts		vs self assessment and peer review.

In very simple terms, it is possible to relate the centralised system with a quality control process, whilst the decentralised system is more akin to a quality assurance process. Goedegebuure, Maasen and Westerheijden (1990) point out in their editorial commentary that, within the British system of quality assessment, there is not a clear tendency for quality care systems in higher education to be predominantly either centralised or decentralised. Rather, they maintain that balances between the two approaches are constantly changing as new dimensions emerge and re-emerge over time.

3.8 PROGRAMME IMPROVEMENT VS MINIMUM STANDARDS MODEL

Cullen (1992, p15) describes the centralised/decentralised educational dichotomy in terms of a programme improvement and a minimum standards model.

Programme improvement model operates within a decentralised environment and requires from each institution, a mission and a series of objectives. Performance is evaluated with due consideration given to both the Government's priorities and the institutions own goals and objectives. The model relies on comparisons of

performance within a system of semi-autonomous institutions. The focus for action is improvement. The model recognises the diversity which exists between institutions. Not all programmes are expected to be at the same level, different standards apply to different institutions and quality is defined from the client's perspective.

External validation or maintenance of minimum standards model operates within a more centralised environment and ensures minimum standards are met. It relies on external monitoring. Quality is presumed to exist in those institutions which meet the minimum standard.

Recognising that the two models must to some extent co-exist, Cullen further advocates five strategies in order to address relevance and quality in educational activity:

1. Emphasise the need for decentralised management i.e., oppose the idea of central systems and formalised indicators.
2. Ensure major programme initiatives agreed with institutions are resourced by Governments.
3. Monitor enrolment profiles to ensure that the collective enrolment decisions of institutions meet overall State needs.
4. Adjust programmes and access to meet the growing diversity of student needs.
5. Provide discretionary funding to ensure that institutions seeking to implement improvements are rewarded rather than penalised by the planning system.

To operate successfully in a programme improvement model, planning, quality and accountability models must understand and appreciate the vocational education and

training environment which exists at the local level. Reforms and priorities instituted at the national and state levels need to be developed within the context of the differences which exist, and are desirable to maintain, between local institutions. Performance management requires the development of benchmark standards of 'best practice', but also must recognise diversity amongst institutions. There is a dichotomy therefore to be faced by those who advocate minimal government interference in higher education, and those who advocate central efficiency and common standards. Cullen's (1992) solution requires government to see its role as encouraging and enabling rather than auditing and directing. The result would be an education system which is more accessible, flexible, accountable, and ready to undertake new and unfamiliar roles.

Determining which institutional characteristics are available, acceptable and relevant for state planning data, cross-institutional comparisons and institutional self-analysis is a question which should concern all senior managers. This thesis will clearly demonstrate that most of the data and key performance indicators currently compiled through the AVETMISS data returns at the institutional and State levels are directed towards resource utilisation which shed little light on the more significant aims, goals and objectives of each organisation in an extensive and diverse education and training sector. Under a minimum standards model, to emphasise benchmark standards and performance comparisons from the point of view of equalising available resources across the education and training sector will not develop each organisation's individual uniqueness, specialisations and competitive advantage. Of particular interest to contributors, managers and users of the educational services provided, are questions which address broader concepts of quality:-

Process quality: How does an institution determine minimum waste, while at the same time preserving the required quality of output?

Product quality: How does an institution ensure that the product meets the client's needs?

Benefit quality: A product is made available to a client who is persuaded of its benefit to his or her organisation/self. Each institution needs to ensure that it understands the client's requirements/ expectations, and then meets them consistently.

For performance monitoring systems to be useful as outcomes-improvement tools, data elements collected need to extend therefore beyond the traditional "process measures" to include, as Sizer (1982) suggests, measures relating to

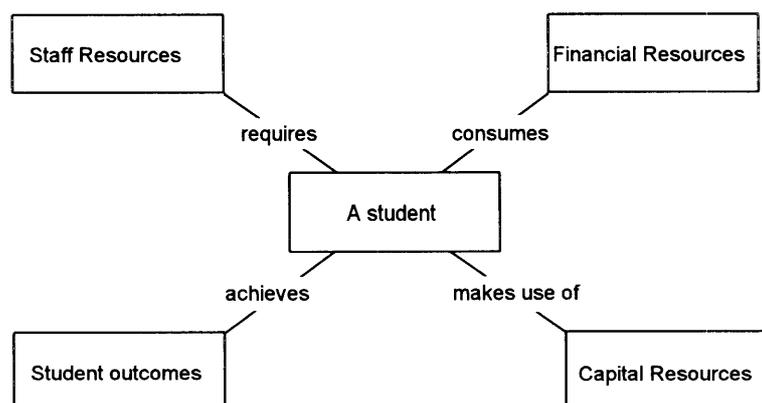
<i>Availability</i>	Amount and type of service provided.
<i>Awareness</i>	Knowledge of user population of existence; range and conditions for entry or use of services.
<i>Accessibility</i>	Indicates if services can be obtained by appropriate groups.
<i>Extensiveness</i>	Compares quantity of services rendered with capacity available and/or potential demand.
<i>Appropriateness</i>	Correct type and amount of service rendered.
<i>Efficiency</i>	Compares resource inputs with outputs.
<i>Effectiveness</i>	Compares accomplishment with objectives (or what was intended) - qualitative and comparative.
<i>Outcomes/benefits</i>	Identifies social or economic benefit.

Acceptability Assesses the match of service outcomes with user/participant preferences. (Sizer 1982 pp40-41)

3.9 PERFORMANCE MEASUREMENT IN THE EDUCATION SECTOR

In response to perceived statistical deficiencies in the performance indicators established under previous reporting standards, requirements for new, integrated information systems are emerging throughout the education sector, such as the AVETMISS data collection referred to in Chapter One and, in the university sector, the Core Australian Specification for Management and Administrative Computing (CASMAC). Fundamental to these new systems is the understanding that institutional data should be integrated across divisional boundaries and systems. Figure 3-5 shows how data from sources relating to finance, space, staffing and students should be able to be combined in meaningful ways to achieve new insights and understandings regarding educational systems, processes and outputs.

Figure 3-5
AVETMISS Data Integration Concept



Common data element definitions and business rules will provide comparable datasets which can be pooled nationally for across-institutional analysis and performance evaluation. In Western Australia, the State Training Agency responsible for all

vocational education and training delivery in the State has introduced a system of annual resource and performance agreements with each college as a practice aimed at improving planning and resource allocation across the various training providers. To develop accurate and meaningful planning and resource allocation models, the State Training Agency has adopted the AVETMISS framework as a fundamental instrument whereby institutions can

- agree on a detailed data element dictionary;
- agree on a methodology for collecting the data;
- calculate, tabulate and circulate input and output measures and performance indicators; and
- assist with interpreting this data.

The conceptual model used by AVETMISS as a framework for classifying various types of measurement is represented diagrammatically in Figure 3-6 below (AVETMISS, 1995 Volume 1: p15):

Inputs are the resources available to the system or provider. Input measures include number of enrolments, dollar amounts of grants and other income, numbers of staff, facilities and equipment.

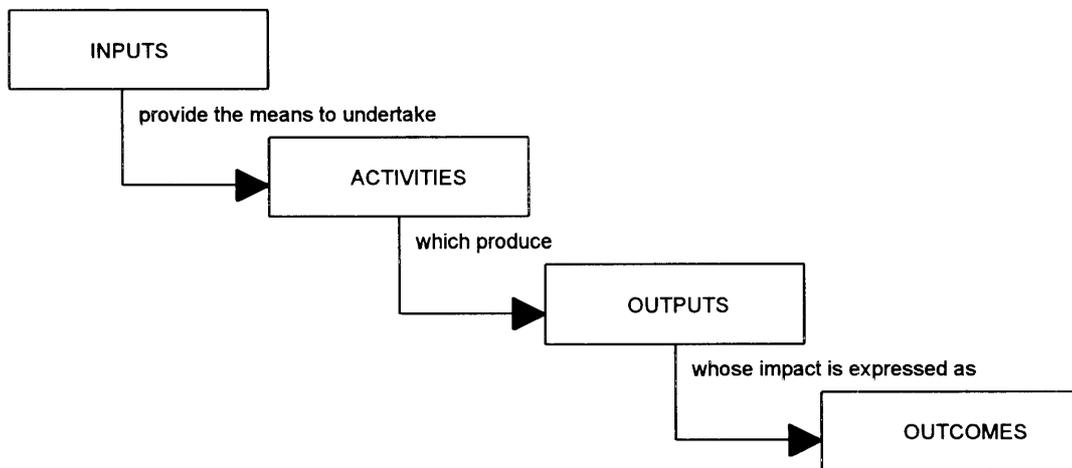
Activities are the processes by which inputs are transformed into outputs. Measures of activity levels include client hours, staff hours and facilities use.

Outputs are the results of activities. Output measures include numbers of individuals completing modules or qualifying for awards and numbers of consultancies delivered or curriculum materials developed.

Outcomes are the impact of the activities and outputs with respect to the system objectives. Outcome measures must, therefore, be expressed in terms of specific objectives. For example, given the requirement to meet the training needs of industry, an appropriate measure may be the number of graduates with jobs which are relevant to their training.

Figure 3-6

AVETMISS Conceptual Framework for Performance Measurement



The AVETMISS data collection aims to assist with the implementation of national policy initiatives, improve decisions about education and training by providing clear and accurate information for the planning and promotion of vocational education and training at all levels, and increase the focus on outcomes rather than inputs. Key performance measures derived from this collection are shown at Table 3-1.

Table 3-1
AVETMISS Business Model Key Performance Measures

<i>Key Performance Measure</i>	<i>Description</i>
Actual vs Target Enrolments and Student Load	The number of individuals, training contracts, enrolments and student load compared with specified annual targets
Module Completion Rate	The proportion of module enrolments for which clients are awarded a completion grade or are assessed as achieving the specified skill levels.
Module Load Completion Rate	The proportion of module load for which clients are awarded a completion grade or are assessed as achieving the required skill levels.
Training Completion Numbers	The total number of individuals who have successfully completed all requirements of a course or contract of training.
Enrolments and Student Load in Competency Based Training	The number of individuals, enrolments and student load in programmes of training where competency based training (CBT) has been implemented.
Enrolments and Student Load in National Curriculum	The number of individuals, enrolments and student load in programmes of training using national curriculum.
Implementation of Competency Based Training	The number and extent of programmes of training being implemented through CBT.
Implementation of National Curriculum	The number of programmes and providers of training using national curriculum.
Participation in New Entry Level Training System	The number of individuals and training contracts/enrolments in programmes operating under the new entry level training system.
Participation in Vocational Education and Training vs Prior Education	The number of individuals/enrolments commencing programmes of training and total individuals and enrolments by highest level of prior education and training.
Private Provider Enrolments and Student Load	The number of individuals, enrolments and student load in accredited courses within the non-government sector.
Enrolments Involving Flexible Delivery	The number of individuals/enrolments in programmes of training using delivery strategies other than scheduled, teacher directed class organisation.
Proportion of Credits for Recognition of Prior Learning	The proportion of clients/enrolments gaining credit (advanced standing) and the student load saved on the basis of prior education, training and experience.
Industry Provision of Accredited Courses	The number of accredited courses offered by industry and private providers.

Adapted from AVETMISS (1995) Volume 1 pp33-48.

State funding agencies recognise that system-wide performance measures established for institutions within this framework will typically involve estimates of performance relating to a broad cross-section of activity. Colleges will be expected to

.... present a 'basket' of performance indicators intended to provide a comparative framework covering a broad spectrum of the desired characteristics of a successful and innovative VET college. It is envisaged that within a manageable number of indicators the basket would be broad

enough to fairly reflect the differences in the mission and orientation of each college. (WADOT, 1995b: p2)

Considerations of efficiency will generally be based upon activity level measures and an analysis of outputs against inputs, whilst considerations of effectiveness will involve the measurement of outcomes. Activity measures are an essential component in planning levels of training activity, including bidding for resources and profiling performance agreements (WADOT, 1995a).

However, the national key performance measures shown at Table 3-1 do little to assure one that there has been a shift in emphasis from inputs to outcomes reporting in the vocational education and training sector, or any attempt to record the some of the more fundamental activities relating to quality and level of service which lie outside the training provider's "delivery boundary" (see Figure 2-3). Are organisations developing appropriate products? Do they provide an appropriate level of customer service? If the AVETMISS data collection is to improve decisions about education and training, it is important that a more complete picture is provided. Issues such as competency-based training, new entry level training systems and recognition of prior learning have very little impact on the training outcomes in the visual and performing arts.

3.10 NATIONAL CONFORMITY

The Academy contends that the AVETMISS data is measuring only that which can be easily measured - a "looking under the lamppost" syndrome¹⁵. Despite assurances to the contrary, the Western Australian Department of Training performance indicators shown at Table 3-2 indicate that data measurement in the vocational education and training sector is still fundamentally an input and activity-level exercise. To date, the most widely used indicator of institutional performance at the TAFE level has been

¹⁵ *This syndrome refers to the old story of a person who dropped his keys outside his front door while attempting to enter his house. When asked why he was looking for them outside on the pavement, he replied that, because it was lighter under the lamppost, he'd be able to see much more clearly!*

the annual student contact hour, a measure which is based on the number of hours attended by each student in a given year in the course of an enrolment. Consistent with the concerns expressed by Wyatt (1995) earlier in this chapter, in Western Australia there has been much attention placed on these indicators as concrete entities in themselves. There appears to be little attempt to understand the indicators, or to postulate the relationships between inputs and outcomes for the purpose of recommending policy action. There is evidence that the indicators will be used prematurely to hold institutions accountable on a “minimum standards” basis, as opposed to investing in longer-term programme-improvement outcomes.

There are significant data issues which need to be addressed before any real use of these measures can be achieved. It would appear that the primary objective of the new AVETMISS collection, to increase the focus on outcomes rather than inputs and to relate each measurement level to a precisely formulated objective, has not in practise been achieved at the local level.

The main emphasis is on the capacity to measure outcomes and these can only be interpreted in the context of the objectives of the vocational education system. It has, therefore, been essential for AVETMISS to focus on the agreed national goals. However, it is also recognised that States/Territories and individual training organisations will develop additional objectives pertinent to their local needs and AVETMISS has been designed to accommodate a wide range of information requirements from specific local needs to international comparisons. (AVETMISS, 1995 Volume 1: p16)

Table 3-2
WADOT Performance Indicators

Type of Measure	Description	Classification ¹⁶
<i>Entrepreneurial Activities</i>	Non-profile funded activity	Activity
<i>Flexibility</i>	Non-traditional delivery	Activity
	Classes conducted outside business hours	Activity
<i>Efficiency</i>	Cost per output ("credit" hour)	Activity ¹⁷
	Capital utilisation	Activity
<i>Client Outcomes</i>	Module load completion rate	Activity
	Student/graduate satisfaction	Outcome. Not available through AVETMISS ¹⁸
<i>Currency</i>	Extent of competency-based training	Activity
	Currency of curriculum	Input
	Graduate destinations	Outcome. Not available through AVETMISS ¹⁹
	Employer satisfaction	Outcome. Not available through AVETMISS ²⁰
<i>Accessibility</i>	Course profile match	Input
	Access orientated delivery	Input
	Reskilling of paid workforce	Input
	Aboriginal students	Input
	Non-English speaking background students	Input
	Participation by unemployed people	Input
	Extent of recognition of prior learning	Input

3.11 CONCLUSION

The educational manager's dilemma is "Does performance assessment aim at control and measurement in order to take decisions about planning and allocation of funds, or is performance assessment used to influence and improve performance?"

(Goedegebuure, Maasen and Westerheijden, 1990). Goedegebuure et al (1990, p35)

¹⁶ Refer to Figure 6.

¹⁷ Although the description of this item refers to an "output", the measure refers to the cost per hour of teaching, which in reality is an activity level variable and bears no relationship to outputs or outcomes.

¹⁸ It is reported in WADOT (1995b) that the Western Australian Department of Training expects to conduct bi-annual surveys of students in order to determine a satisfaction rating for each College. At the time of writing, no such survey has been attempted for Academy students.

¹⁹ It is also reported in WADOT (1995b) that ACVETS (Australian Committee on Vocational Education and Training Statistics) will survey students annually to determine graduate destinations. In the higher education sector, the Graduate Destination Survey has been in operation for many years and achieved a notoriously poor response from students overall, and in particular from students in the performing and visual arts who find the traditional definitions of "employment" somewhat arbitrary and irrelevant to their professions.

²⁰ The comments above apply. Who is "the employer" in the visual and performing arts?

further suggest that “ ... *if they [performance indicators] are not handled as ‘dry facts’, but are considered and discussed contextually, they indeed can play a valuable role in institutional quality management.*” Quality outcomes does not necessarily imply that there is a level playing field. Questions of planning and resource allocation cannot be successfully resolved if they are based on principles of equal share, external inspection and centralised goal setting. Fundamental to planning and resource allocation must be a consideration and assessment of resources used on the basis of expected and desirable outcomes. However, in the absence of a contextual framework for reporting institutional-specific missions and values, what weighting should be given to different institutional outcomes, and how should relationships between different measures be resolved?

It is important that the rationale for external interventions is understood within institutions, and that such interventions act to encourage rather than discourage the internal processes and evaluation in those institutions.
(Cullen, 1992: p12)

It should be noted that there has been criticism of the level of consultation which has been entered into prior to the development of new education and training policy throughout the post-secondary education sector. Nolan (1989) cites some advice provided by a Japanese business executive who stated that the Industrial West was going to lose out because "Your bosses do the thinking while the workers wield the screwdrivers, and you're convinced deep down that this is the right way to run a business." Two groups whose input appear to be under-acknowledged by the Commonwealth Government are the higher education sector itself and the State Government.

The States have in fact found themselves forced to the periphery of the higher education policy process and wielding less influence that they did in the CTEC years ... One of the major differences between the DEET/NBEET structure and the preceding CTEC framework is that there are now fewer deliberative forums and contributing participants in the higher education policy arena. The new administrative structure may enhance hierarchical control and facilitate decisive decision-making, but it

is doubtful whether it makes for better policy formulation. (Marshall, 1992: pp52-57)

This position is supported by the Western Australian State Training Agency, who assert that ANTA's decision-making and planning frameworks have proved to be ineffective and inefficient, and have limited the ability of the States to operate within their own charter. Excessive demands placed on the States, and an increasingly "hands-on" role by ANTA further restrict the State's operation.

To date, the operation of the National Vocational Education Training System has not allowed State Training Agencies sufficient managerial responsibility for vocational education and training within their own borders, but rather has provided a restrictive environment driven by factors which often have little meaning or application at the local level. (Government of Western Australia, 1995: p2)

At the State level, the State Training Agency is advocating a national **framework** for vocational education and training rather than a national **system**. The State has found that the inflexibility of funding arrangements leave no opportunity for States to respond to local needs and provide no incentive for increases in efficiency.

What is needed now is the right balance between the desire for accountability for public funding and the recognition of the many and varied factors which influence the cost and effectiveness of delivery. It is necessary to ensure that KPI's [key performance indicators] and unit costs do not become ends in themselves, but rather serve to ensure a better quality training for those seeking to acquire skills. (Government of Western Australia, 1995: p19)

The rhetoric emerging from the Australian National Training Authority, and interpreted through the State Training Agency in Western Australia, incorporates elements of both centralised and decentralised management systems. It will be useful to evaluate the extent to which this educational dichotomy is resolved in the national training reform agenda, and whether this will contribute to a more effective, efficient and outcomes-focused training enterprise.

It is expected that this thesis will go some way towards providing a better understanding of the extent to which institutional data provided in AVETMISS formats can (or cannot) provide a conduit along which the essential elements of an organisation can be passed to an administering agency for central analysis and comparison. It will help to clarify the role the AVETMISS information framework can play both in assisting senior managers “manage” and monitor their own performance and, more broadly, in managing institutional performance at the state and national level i.e., in measuring or observing the effective and efficient accomplishment of the expectations of an institution in the context of agreed objectives.

4. RESEARCH METHODOLOGY

4.1 BACKGROUND

It has been argued in previous chapters that the Commonwealth Government is now a significant force in what has traditionally been a State-controlled vocational education and training system. It is exerting its influence in an effort to improve the educational outcomes of these systems and focus effort on the achievement of national priorities and objectives for the sector.

A key planning instrument for the Commonwealth Government is the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS). This Standard arose out of the need to provide an accurate mechanism for setting medium to long term targets in planning for Australia's future training needs, and to measure the performance of the sector. It grew from the revelation in the late 1980s that statistical deficiencies had become a serious obstacle to sensible policy analysis, system planning and institutional management in Australian vocational education and training (AVETMISS, 1995). The Standard will eventually apply to all public and private elements of the vocational education and training sector. It claims to integrate the statistical requirements for policy and planning with the information required for management, providing concise, consistent and well understood information about employment, education and training and its impact on the workforce and the labour market. It aims to identify strengths and weaknesses of the training enterprise, and become a vital component in making vocational education and training a strong, competitive and relevant industry with the ability to focus and plan effectively for the future.

4.2 RESEARCH ACTIVITY

This thesis reviews and evaluates the effect of the changed information reporting requirements, introduced by the Commonwealth Government through the AVETMISS framework, on the Western Australian Academy of Performing Arts.

A descriptive/evaluative case study approach has been adopted, utilising the 1994 and 1995 AVETMISS data collections²¹ from the Academy, in addition to other relevant sources of data contained in course profiles, annual reports and strategic planning documents of this organisation.

The data collected are reviewed and analysed with respect to their ability to provide information which can function both as a management tool to support decision-making, policy development and the planning of viable educational options, as well as an effective instrument for reporting outcomes for the purpose of public accountability in the education and training of visual and performing arts students at the Western Australian Academy of Performing Arts.

A case study approach has been adopted as the most effective means of obtaining information regarding the relationship between

- (a) system policy makers and administrators interested in the reporting and accountability aspects of the information provided and its capacity to inform policy initiatives; and
- (b) institutional managers who are concerned that the information will provide timely and relevant feedback on the state of their activities.

The thesis will be primarily concerned with a number of issues:

- the categories of information which can provide useful and meaningful data to contribute towards improving the decision-making and public accountability of TAFE level educational systems in both

²¹ *At the time of writing, the 1996 collection was not available.*

- (a) the national context, and
 - (b) a specific institutional context
- the adequacy of established reporting mechanisms for educational and Government planning purposes (with particular reference to the AVETMISS data collection and the ANTA State Training Profiles)
 - the potential use of an enhanced profile dataset to assist with managing and monitoring change expected of these institutions.

After two years of practical experience with AVETMISS reporting, it is appropriate that this mechanism be reviewed with respect to its purpose and practical application. Information provided to the national data collection is used as a feedback and monitoring system for national 'fine-tuning' and improving progress towards stated government and institutional policies and objectives. Through the information provided by the local training providers, the Commonwealth Government expects to know the extent to which its objectives have been achieved. There is an expectation therefore that common standards for reporting and monitoring performance nationally will provide evidence of:

- improvements with respect to ANTA objectives²²;
- efficiency/effectiveness gains;

²² *The Australian National Training Authority has specific objectives, which are to:*

- *develop a national vocational education and training system in which publicly-funded, private and industry providers can operate effectively, efficiently and collaboratively and which meets the needs of industry and individuals;*
- *improve the quality of outcomes of vocational education and training;*
- *improve vocational education and training opportunities and outcomes for individuals;*
- *improve the ability of the vocational education and training system to respond to the current and future needs of industry;*
- *improve access to and outcomes from vocational education and training for disadvantaged groups; and*
- *increase public recognition of the value of vocational education and training as an investment for both industry and individuals (See ANTA, 1992).*

- benchmark performance comparisons;
- quality of outcomes; and
- excellence in services provided.

4.3 KEY QUESTIONS

Are the data collected by the Commonwealth adequate for national, state and institutional planning and accountability purposes?

Will the state training profiles make proper use of the available information resources in reporting progress towards objectives?

How will the AVETMISS data be used in encouraging institutions to minimise duplication and make economic choices, particularly in course areas of low demand, while enabling healthy competition in the context of a free market economy?

How can the reporting process be modified to accommodate a greater measure of institutional autonomy, public scrutiny and accountability?

4.4 ISSUES

- What aspects of educational and institutional activity are most relevant with respect to accountability measures? Are they similar for all tertiary institutions? How should these be reported?
- Given the current state of information systems in most post-secondary institutions, is it feasible to provide integrated performance measures with respect to institutional evaluation and cross-institutional comparisons?

- With regard to resource allocation based on formula-driven performance measures and centralised cost-benefit analyses, Smith (1975: p162) notes that the cost data (and to a lesser extent, the benefit data and their relationships) are essential for any attempt to improve resource allocation, but once they become available, more fundamental questions emerge. How are these questions to be dealt with? Are models for centralised resource allocation likely to have a positive impact on the local training providers and improve overall the national education and training enterprise? If not, what is the alternative?
- Is there a framework within which institutions can develop their academic profiles based on their own mission and local issues, but with due regard given to the national priorities?

4.5 LIMITATIONS OF METHOD

There will be a significant amount of planning which is done by the academic departments and government which occurs outside of the AVETMISS framework which will not be documented in this thesis. For example, the role of the Academic Boards/Senates as political lobbying groups will not be considered, although it is probable that a significant amount of planning, policy development and decision-making has been, and will continue to be, conducted in this forum. Other limitations include

- the availability of data relating only to the AVETMISS Business Model - data relating to the AVETMISS Resources Model (finance, staffing and resources) which will allow many integrated performance measures to be developed will not be implemented until the end of 1996;
- as the focus of this thesis is the Western Australian Academy of Performing Arts, there is limited opportunity to test conclusions in other institutional settings; and

- the available data is limited essentially (for a practical analysis) to the data elements provided in the 1994 and 1995 data collections (the only collections available at the time of writing). Where appropriate, this data has been supplemented with data from other sources for the purpose of clarity.

4.6 EXPECTED OUTCOMES

1. A summary of performance indicator development in the field of tertiary education.
2. Specific recommendations on the use of current data for performance evaluation.
3. Identification of issues to be resolved before more extensive use of data for effective performance evaluation can be achieved.

This study is limited to a consideration of the AVETMISS data collections and the State Training Profile negotiations as they affect the management and academic functions of the Western Australian Academy of Performing Arts. The effect of State and Commonwealth policy with respect to technical and further education in the State, and its relationship to the State universities, has also been considered.